

The Irish Question:
An investigation into Irish language
self-efficacy beliefs in adults

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Abstract

The vast majority of adults that have received their education in Ireland undertake compulsory Irish for around 13 years. However, over 60% of adults claim to have no Irish speaking ability (CSO, 2018). This study seeks to assess the relationship between Irish language self-efficacy beliefs and performance on an Irish language proficiency test. Self-efficacy represents a task-specific, self-assessment of skills in a specific domain. Utilising a quasi-experimental, quantitative research design, an Irish language proficiency test and suite of self-efficacy scales were created and administered via an online survey platform. 1,501 participants completed the full manipulation study. Based on results at phase 1, participants were auto assigned to groups and an intervention was administered. Performers with low results were provided false, inflated results and efficacy-raising feedback. High performers were provided false, deflated results and efficacy-lowering feedback. A control group was presented with actual results. Phase 2 testing revealed that sources of self-efficacy could be manipulated to significantly affect Irish language performance with low performers improving average performance by almost 30%. Self-efficacy ratings, were significantly reduced in the high performing group upon receiving the negative intervention. Self-efficacy revealed itself as a more robust predictor of performance than a single Irish skills-based question such as that employed in the Census of Population.

Word count: 70,000

Declaration

I declare that this thesis has not been submitted as an exercise for a degree at this or any other university and it is entirely my own work.

Signed:

A handwritten signature in black ink, consisting of a large, stylized initial 'S' followed by a series of loops and a long horizontal stroke extending to the right.

1/6/23

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List of abbreviations

- AIC: Akaike's Information Criterion
- ALM: Audiolingual Method
- ALTE: Association of Language Testers in Europe
- ANOVA: Analysis of variance
- BIC: Bayesian Information Criterion
- CEFR: Common European Framework of Reference for Languages
- CFA: Confirmatory Factor Analysis
- CFI: Comparative fit index
- CILAR: Committee on Irish Language Attitudes Research
- CLIL: Content Language Integrated Learning
- CLL: Community Language Learning
- CLT: Communicative Language Teaching
- CSO: Central Statistics Office
- CTT: Classical test theory
- CVI: Content validity index
- EGA: Extreme group approach
- FL: Foreign language
- FLA: Foreign language anxiety
- FLCAS: Foreign Language Classroom Anxiety Scale
- HLM: Hierarchical Linear Modelling
- ID: Individual difference
- IRT: Item response theory
- ITÉ: Institiúid Teangeolaíochta Éireann (Linguistics Institute of Ireland)
- L1: Native/first language
- L2: Second language
- L3: Third language
- LAD: Language acquisition device
- LCA: Leaving Certificate Applied
- LCVP: Leaving Certificate Vocational Programme
- M: Mean/average

MCQs: Multiple choice questions

NCCA: National Council for Curriculum and Assessment

NFQ: National Framework of Qualification

NUI: National University of Ireland

PL: Parameter logistic (model)

SD: Standard deviation

SLA: Second language acquisition

SCT: Social Cognitive Theory

TEG: Teastas Eorpach na Gaeilge

TPR: Total Physical Response

VIF: Variance inflation factors

1. Introduction

This thesis draws upon various aspects of applied linguistics research including psycholinguistics and sociolinguistics to present a quantitative analysis of Irish language self-efficacy beliefs and Irish language performance in adults that have completed the terminal school exam in the Republic of Ireland, the Leaving Certificate. Using self-efficacy as the theoretical framework, the domain of perceptions of Irish language abilities and knowledge will be considered, while also touching on theories of second language (L2) loss, specifically language attrition. Self-efficacy of Irish language skills is a vastly under researched area and represents a new line of enquiry in Irish language perception research. As self-efficacy represents task-specific beliefs in ability, and is derived from a number of sources such as experience, feedback, emotion and peer interactions, the majority of Irish language learners traverse a number of socially contextualised environments during 13 years of school exposure to the Irish language. The importance of this belief-system is manifest in national metrics such as the Census of Population, where Irish language data is derived from self-assessment of Irish speaking skills, a process grounded in retrospective perceptions of language skills, that for most have not been accessed since finishing school. The importance attached to this data can be seen in various national policy interventions aimed at protecting, maintaining and further increasing Irish language users. This introductory chapter aims to establish the background that has motivated this research. This will offer a brief preview of what will follow in the principal chapters, namely the status of the Irish language in society, government and education, language loss or attrition, self-assessment as a measure of language abilities, and the theoretical foundation for this study: self-efficacy. General objectives and the theoretical framework will be presented. Finally, an outline of the structured thesis is presented.

1.1 Background and context

The Irish language is designated as Ireland's first official language under Article 8 of the 1937 Constitution, with English recognised as the second official language. Irish has evolved as an official language of the European Union in 2007 to an official working language in 2022, on equal footing with all other European languages (European Commission, 2022). However, despite this official status, the Irish language is largely learned as a second language (Darmody and Daly, 2015), and spoken on a daily basis by only 1.7% of the Irish population (CSO, 2017b), thus rendering it on par with languages in minority contexts (Ó Laoire, 2005b). Irish has been classified as an *endangered language* by UNESCO, defined as a language that is no longer

‘being learned as the mother tongue by children in the home.

The youngest speakers are thus of the parental generation. At this stage, parents may still speak their language to their children, but their children do not typically respond in the language’ (Moseley, 2010, p.12).

According to Fishman (2001), without intergenerational transmission, minority languages cannot be maintained. It is beyond doubt that Irish has experienced an extreme language shift – a term used to describe the change in habitual use of one language by a population for another language (Gal, 2008) – in this instance English. While this is largely due to a collapse in the population of Irish speakers in the latter 19th century, as this study will highlight, policies, economic and social orientations, and ideologies since independence have only further facilitated this shift. Despite the deterioration in number of speakers of Irish, evidenced by five-yearly census returns, Ireland is not a signatory to the European Charter for Regional or Minority Languages on the Council of Europe. The Irish language in Northern Ireland is, however, protected by the Charter in the absence of a proposed Irish Language Act. Failure to officially acknowledge minority status is paradoxical to the legal protection afforded the language at a European level where it

has obtained prestige through official working language status (Walsh, 2022).

Since the establishment of the Irish Free State in 1922, which coincided with a lack of any national Irish language policy interventions for almost 80 years, the Irish school system has remained the primary conduit for maintaining and expanding the Irish language in Ireland (Kelly, 2002, Ó Riagáin, 1997). As such, this is often the sole interface of acquisition and practice that the population has with the Irish language. Teaching and testing methods have evolved far from the pre-independence days of rote learning grammatical rules and structures, more associated with classical languages such as Latin, towards a more communicative pedagogy. Despite an increased linguistic awareness in Irish teaching methods, in 2022 the Department of Education published the chief inspector's report restating findings from the 2016 report, that in English-medium primary schools, 'pupils' learning outcomes in Irish are still of concern' with 'an over-reliance on translation from Irish to English as part of the pupils' experience of Irish' (Department of Education, 2022a, p.117). The Irish government has more recently, developed and implemented long overdue policies and interventions aimed at maintaining and increasing the number of speakers of Irish, beyond the ever-depleting Irish-speaking *Gaeltacht* geographical areas. This official response is best summarised in the *20-Year Strategy for the Irish Language 2010-2030*, an ambitious national plan which, among other objectives, seeks to increase the number of daily speakers outside education by 70% – a target unlikely to be met in the absence of a more consolidated position of the language in education, specifically in the immersion education sector (Walsh, 2022).

1.1.1 Irish as a core school subject

In Ireland, the Irish language is a compulsory core school subject, taken over a period of around 12 or 13 years, up to the terminal exam, the Leaving Certificate. However, despite the privileged status the language holds in education, once students finish the senior education

cycle at around 18 years of age, the vast majority fail to maintain or build upon the Irish language knowledge acquired during school as evidenced in census language data. The resources and hours dedicated to the teaching of Irish does not appear to correlate with Irish language maintenance or usage beyond the school system. For example, the 2016 Census of Population reveals that under 40% of the population claim to have Irish speaking skills (CSO, 2017b). This withdrawal of potential Irish language users from the population has led to a rising number of adults self-declaring as having no Irish speaking skills, the only official national metric for Irish language knowledge recorded in the Irish Census of Population (CSO, 2017b). The majority of daily speakers of the Irish language reside in the Irish-speaking Gaeltacht regions, which represent just 2% of the population. Of these 96,090 citizens, 63% claim to be able to speak the Irish language (CSO, 2017b). The reliability of census data as a true representation of Irish abilities has been questioned in previous surveys and studies (see Darmody and Daly, 2015, Murtagh, 2007), and has been suggested as a proxy for ideology and identity rather than a measure of Irish abilities (Hindley, 1990).

1.1.2 Language attrition

National surveys show that attitudes towards the Irish language are largely positive (Darmody and Daly, 2015), but this is not translating into active participation in the language. The *20-Year Strategy for the Irish Language 2010-2030*, aims to ‘increase on an incremental basis the use and knowledge of Irish as a community language’ (Government of Ireland, 2010, p.3). However, for individuals, as the period of time outside the education system increases in parallel with extended periods of non-use, perceptions of Irish language knowledge loss emerge as a significant factor (see Murtagh, 2003). Previous research on second language loss suggests that a residual knowledge of school acquired languages in individuals remains, often unknowingly, following years of non-use (Bahrck, 1984, de Bot et al., 2004, de Bot

and Stoessel, 2000, Weltens, 1989). Researchers have begun to reframe language loss as a memory retrieval issue, as opposed to a phenomenon of complete knowledge loss (Bardovi-Harlig and Stringer, 2010, Hansen, 2011, Yukawa, 1999). The activation or reactivation of Irish residual knowledge in those that believe they have lost the Irish knowledge gained in school could have potential for further reversing language shift, as well as prompting more targeted revitalisation interventions.

1.1.3 Self-assessment

The combination of language attrition as an often perceptual phenomenon and self-assessment as census methodology for measuring Irish language speaking abilities only further highlight the fallibility of asking individuals to self-declare abilities in a language that for many has not been actively accessed in decades. Dunning et al. (2003) state that individuals lack the necessary training or experience to objectively self-assess their skills. It has been demonstrated that abstract self-assessment questions such as ‘can you speak Irish?’ fail to provide the accuracy of criterion-referenced self-assessment instruments (Brantmeier, 2005). Graham (2004) suggests that individuals tend to base self-assessment on how they believe they will perform at that particular moment, rather than on their actual competencies. Recalibrating ability beliefs with actual competencies represents a first step in reengaging those that self-assess as having no Irish abilities despite the level of school exposure to the language. A key aspect of this research is to prompt interventions at the individual, societal, governmental, and educational level that will prevent these often overestimations of knowledge loss evolving into a misaligned acceptance of Irish language attrition. A key function of this aim relies on understanding the task-specific system of self-beliefs known as self-efficacy.

1.1.4 Self-efficacy

Self-efficacy, defined as ‘people’s judgments of their capabilities to organise and execute courses of action required to attain designated types of performances’ (Bandura, 1986, p.391), provides an appropriate framework for investigating the issues outlined so far. Self-efficacy moves beyond the abstract, to a task-focused self-appraisal of abilities, and is regarded as a more accurate predictor of performance than actual abilities (Hendricks, 2014). With school providing the primary interface for the majority learning and using the Irish language, the self-efficacy profile of each individual is established, creating biases or filters through which the Irish language is experienced. As self-efficacy is a measure of perceived abilities rather than a measure of actual abilities, then the relationship with the language alters greatly, dependent upon factors such as the circumstance of the learning environment. Recent developments in the UK present an increasing need to define and accurately communicate the role that self-efficacy plays in language learning in general. The UK Department for Education has identified self-efficacy as a key variable of focus in its revision of the modern foreign languages curriculum. Graham (2022) provides a highly critical overview of the misinterpretation of definitions and studies that are cited in the *OFSTED 2021 Curriculum Research Review* for languages as justification for reviewing how languages will be taught in the UK. To summarise, the *Review* seeks to boost self-efficacy by limiting what is expected of learners (Office for Standards in Education, 2021) – a reductive interpretation, as this study will seek to highlight.

1.2 Research aims and questions

The exploratory methodology used in this study seeks to gain an insight into the influence of self-efficacy on Irish adults when it comes to using the Irish language. The quasi-experimental design consists of two phases over one sitting. Participants were asked to declare their self-efficacy ratings on Irish tasks and subsequently tested on their Irish

language knowledge. Through an intervention, adults that had previously undertaken the Irish Leaving Certificate syllabus, or equivalent, were tested to determine if falsified results, and comparative feedback at phase 1 influenced their self-efficacy, performance, or time allocated to an Irish test at phase 2. It was anticipated that by manipulating two self-efficacy sources – mastery experiences, through results, and social persuasion via comparative feedback – the magnitude of self-efficacy can be assessed as an influential variable in the context of the Irish language. Furthermore, the accuracy of self-efficacy versus a single, global self-assessment question as a predictor of performance was assessed. While the methodology chapter will provide a more contextualised discussion on the research design, this study will be guided by the following research questions:

1. How accurate are Irish language self-efficacy ratings as a predictor of performance on an Irish proficiency test?
 - 1.1 What is the direction of the relationship between Irish self-efficacy and Irish test performance?
 - 1.2 How accurate is the relevant sub-scale of self-efficacy as a predictor of Irish language performance on a:
 - Irish grammar test
 - Irish listening test
 - Irish reading test
2. Do single omnibus language questions represent performance when compared with self-efficacy task-specific scales?
3. Do Irish language self-efficacy beliefs predict the allocation of time dedicated to an Irish language task?
4. Does manipulated performance and false comparative feedback have an effect on:

- Performance
- Resource allocation
- Self-efficacy

5. Which variables predict self-efficacy of Irish language skills?

6. Which variables predict performance on an Irish test?

7. Do participants believe declarations of other Irish language skills (reading, writing and listening) as well as graded “can-do” self-efficacy statements provide a valid measure of Irish language skills in a national Census of Population?

It is anticipated that these research questions will offer a new insight into perceptions of Irish language abilities, along with the influence of extant variables such as attitudes and experiences. The final question presents an opportunity to consider the current census methodology of measuring Irish speaking skills only, in presenting a more agentic perspective in not only measuring other skills, but by allowing for wider descriptors of Irish language skills.

1.3 Theoretical orientations of this study

This study employs a psycholinguistic approach in its analysis of the interaction between language learners and language ability perceptions. As Field (2011, p.472) states, psycholinguistics is a branch of linguistic enquiry concerned with ‘how the mind equips human beings to handle language.... and the cognitive processes that underlie the storage, use and acquisition of language’. Field goes on to highlight the pragmatism of this branch of linguistics in how it rejects a wholesale acceptance of normative assumptions in patterns of behaviour. A key word in the definition above is ‘storage’. This encompasses numerous complex concepts originally derived from the psychological domain, namely memory, cognition, affect and perception, and places the individual at the heart of the research. How individuals store, maintain, or even attrite a learned language has

proved a rich line of reasoning for linguists (e.g. Anderson, 1985, Baddeley and Hitch, 1974, Bahrick, 1984, Herdina and Jessner, 2002, Schmid et al., 2013, Weltens, 1987). By extension, and as will be discussed further, each language learner comprises individual differences that distinguish them from every other language learner. The multidisciplinary nature of psycholinguistics provides a robust foundation which is evidence-led, usually operationalised through controlled experiments assessing the interaction of specific processes (Reid, 1995).

Having established the general domain of enquiry through psycholinguistics, a more focused conceptual framework of this research can now be outlined. A conceptual, or theoretical framework contains the concepts, expectations, beliefs and theories that inform the research (Miles and Huberman, 1994). Figure 1.1, below, describes the key concepts in this research, beginning with L2 input and ending with a number of alternative outcomes for the Irish language learner. Second language acquisition (SLA) represents the process through which the language learner receives L2 input. As can be seen in figure 1.1, the process itself is related to a number of contextual variables including the historical and societal backgrounds of the language being studied, as well as the policies that protect or promote the language. The education system represents the pedagogic element of the SLA process. The next concept is the language learner, a variable replete with idiosyncrasies including cognition, gender, confidence, motivation, etc. The learner and their interaction with the SLA process lead to the variations in Irish language usage in the context that Irish is compulsory in the terminal exam, the Leaving Certificate.

The next step in the process is the principal theoretical frame for this research: self-efficacy. Self-efficacy is a perceptual belief system regarding abilities to take on a specific task, used to 'regulate human functioning through cognitive, motivational, affective, and decisional processes' (Bandura and Locke, 2003, p.87). Self-efficacy has more

recently been adapted as a framework of analysis to demonstrate its role as a primary predictor of language learning success and usage (e.g. Graham, 2006, Hsieh and Kang, 2010, Joët et al., 2011, Kim et al., 2015, Moritz, 1996, Piniel and Csizér, 2013, Wang and Sun, 2020, Williams and Burden, 1999, Woodrow, 2011). Self-efficacy allows for the analysis of diverse independent variables such as attitudes, gender, education attainment, abilities, etc. and their effect on outcome variables such as performance, resource allocation and self-perceptions. The conceptual framework below shows the reciprocal relationship between the independent variables that make up the language learner and their experience with the perceptual belief system of self-efficacy. The outcome of this whole process is Irish language maintenance or attrition, both from a perceptual or performance perspective, the manifestation of which emerges in national self-assessed Irish speaking data. The general assumptions in this study which follows on from accepted theoretical assumptions (see Bandura, 1997) are that Irish self-efficacy beliefs are a strong predictor of performance outcomes in Irish language test performance. Further assumptions, which will be discussed in more depth in the methodology chapter, concern the manipulation of self-efficacy beliefs and how this affects subsequent performance and resource allocation outcomes

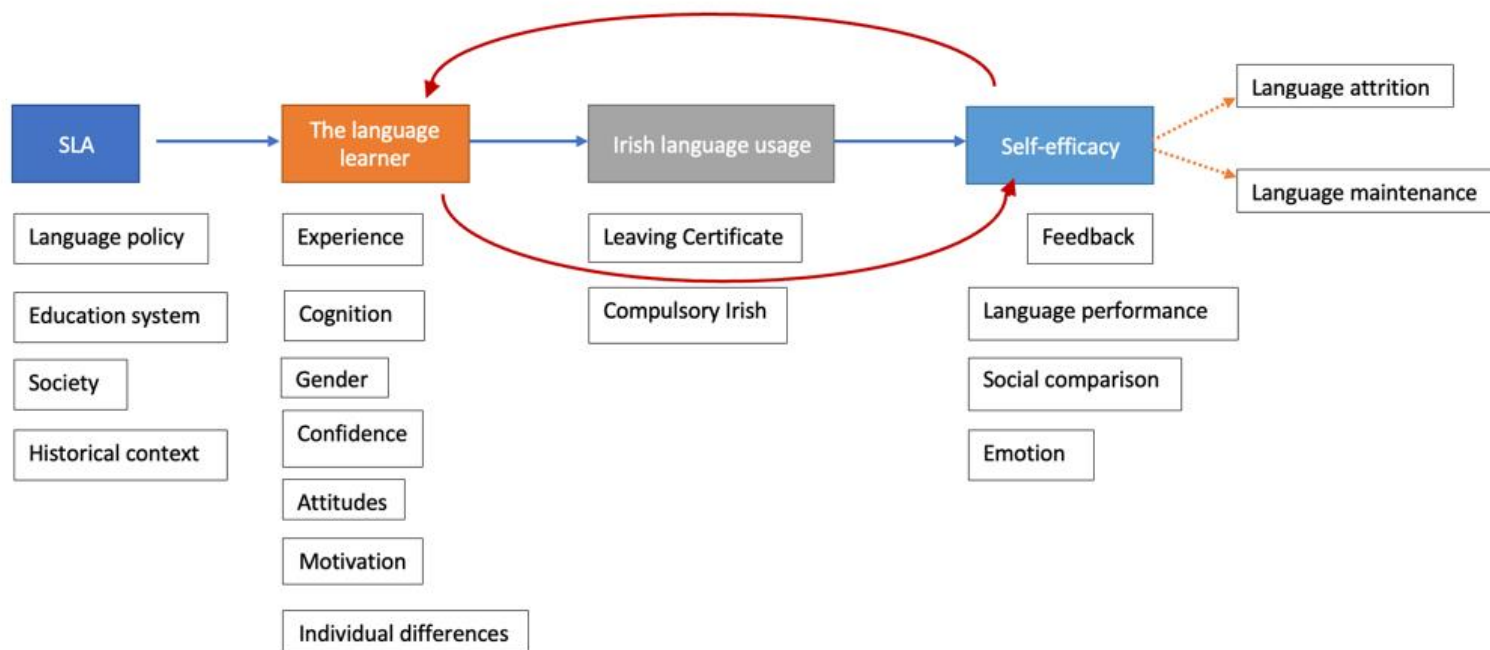


Figure 1.1 Conceptual framework for this study

1.4 Research parameters

While a thorough discussion of the limitations of research outcomes will follow the post-results analysis, the following parameters should be noted in advance. Firstly, and as will be discussed further, the emergence of Covid-19 at the half-way point in this research necessitated a number of compromises. Whereas a targeted, in-person approach to testing Irish adults that have not used the language since finishing school was the preferred approach, the evolving dynamics of Covid-19 meant that this methodology was no longer possible. A test instrument had to be designed that could be self-administered in the safety of participants' own homes. This had a consequential effect on recruitment. Individuals that could have been targeted through a more location- and ability-specific basis via the assistance of intermediaries such as Irish language teachers and schools were no longer as accessible or even open to being tested under the external strain of a public health emergency. Therefore, a social media campaign for recruitment, although successful in terms of numbers, reduced the controllability of filtering out proficient Irish language users from those that may believe the language has been attrited following periods of non-use.

As the participant criteria will outline, this study is restricted to adults that have taken the Irish school syllabus to Leaving Certificate level. It was difficult to define a participation scope beyond this without being overly prescriptive. For example, "Leaving Certificate level" could be interpreted by participants that received their education in Northern Ireland as on par with their A levels. Furthermore, participants that undertook their education in an Irish medium school would expect to have a much higher exposure to, and likely ability in Irish compared with English speaking schools. However, both cohorts will have taken the same Irish Leaving Certificate examination. The educational background possibilities are endless, and therefore difficult to account for every eventuality. The same issue applies to the concept of Irish language exposure and individuals' interpretation of exposure versus

active participation in the Irish language. As this author found in a previous study (Barry, 2020, see Appendix 1), an individual may have had a profound exposure to the Irish language in school, be recognised in their civil service role as an Irish speaker yet remain reluctant to describe themselves as an Irish speaker on official surveys. To briefly summarise, the pre-operational parameters derived from Covid-19 meant that the target population was no longer directly accessible, despite any innovative attempts at recruitment, as will be outlined further in Chapter 5.

Finally, it must be noted at this early stage that this research is not intended as an analysis of the Irish language itself, nor a critique of the acquisition of Irish as a second language. This study instead, however, uses the Irish language as the agent through which the locus of this analysis – concepts such as language self-efficacy, perceptions, attrition, etc. – is investigated. While the methods and design are equally applicable to any second language, as will become evident, the sui generis status, history and proliferation of Irish in the education system, make the Irish language an extremely fertile domain for psycholinguistic enquiry.

1.5 General outline of the dissertation

This thesis contains seven chapters, including this introductory chapter. Chapter 2 will provide a discussion on the Irish language, including the historical context that led to the Irish State using the school system as a proxy for promoting and maintaining the Irish language, and the subsequent consequences. An overview of the current Irish education system and the terminal examination, the Leaving Certificate will be presented. An analysis and summary of the Irish language data that is derived from the Irish Census of Population, and a brief overview of previous Irish language surveys is provided. Finally, the concept of new speakers of Irish will be discussed, along with the implications for this emerging dynamic, and often conflict between learners and native speakers of Irish.

Chapter 3 seeks to establish the main stakeholder in this research – the language learner. The perspective adopted is that of Irish learned as a L2 in school. The chapter will briefly outline the development of theories on L2 acquisition, and the teaching methods used. The difference between passive and active second language skills will be established; an important distinction in this research. The chapter will then highlight two specific individual differences that differentiate L2 learners: affect and motivation. The role of memory in SLA will then be outlined. This will provide some context for the final two sections: how people self-assess L2 skills; and the phenomenon of L2 loss or attrition. L2 attrition will provide some potential theoretical background as to how so many teaching resources dedicated to teaching Irish result in such low declarations of Irish language abilities following school.

Chapter 4 focuses on the theoretical framework for this study – self-efficacy – and its implications for the language learner. A general overview will lead into self-efficacy in the academic domain, followed by self-efficacy and language learning. Alternative views and critiques on self-efficacy are considered, including control theory. The notion of allocating resources such as time and effort, and how these behavioural outcomes are linked to self-efficacy will be discussed. This will be followed by an analysis of the four sources of self-efficacy, and attribution theory – a theory particular to the methodology in this study. The chapter will close with an overview of self-efficacy manipulation studies, a methodology that has only been tested once before in the Irish language context.

Chapter 5 outlines the methodology of this study and describes the research design and a justification for the chosen approach, including the objectives and research questions that define this study. The development, refinement, review, piloting and administration of the data instrument is considered in-depth. This includes an outline of each

aspect of the instrument, including the design of an Irish language proficiency test, the development and validation of Irish self-efficacy scale items, and attitudinal questions presented to participants.

Chapter 6 presents the data analysis and results. An explanation of the dataset and how it is used across various interpretations and analyses will be presented. Item response theory will be employed to analyse the effectiveness of the full Irish language test. The self-efficacy scales will then be tested for reliability. Having established the effectiveness of the data collection instruments, the statistical analyses will consider each of the research questions, including the effectiveness of manipulating self-efficacy and its effect on behavioural outcomes and perceptions.

Chapter 7 will summarise and discuss the main findings and objectives of this study in the context of self-efficacy of Irish language skills. The implications arising from this research will be presented relative to the principal stakeholders: the language learner, the State, and wider society. Finally, the limitations and directions for future research will be considered.

2. The Irish language context

2.1 Introduction

This chapter aims to disentangle some of the interwoven strands that have culminated in the current status and dynamic conferred upon the Irish language, and by extension the Irish language learner. This involves establishing three broad, overlapping aims: outlining the current status of Irish; setting out the State approach to Irish language revival and maintenance since independence; and to situate the Irish language in the educational context. The outcomes of these three aims or themes, as will become clear, are in the main interdependent. For example, the status of Irish is derived from government policy with education and its practices as a primary policy driver in sustaining the transmission of Irish. The journey that the language has undertaken from independence to the current day is complex and multi-faceted, difficult to outline in a chronological, concise fashion, and involving many stakeholders. For the purposes of brevity, this chapter seeks to highlight the most relevant developments for this research context, and does not attempt to provide a thorough discussion on the history of the Irish language, a full critique of state interventions, or a detailed analysis on the linguistic structure of the language itself. The objective is to provide enough contextual background to highlight the interactive relationship between the Irish language learner and the Irish education system. To this end, the chapter will open with a brief synopsis of the current status of the language at the national and international level. A short discussion on the status of the language in Northern Ireland is also provided further for comparative reasons. The chapter will then provide a summary of the Irish education system, followed by the position of the Irish language in the school system. As will be evidenced, the Irish education system post-independence has assumed the proxy role of maintaining and reviving the Irish language. This will be discussed, including a summary of government policy interventions. The chapter will then present an Irish language-centred discussion of

the second language acquisition and pedagogic concepts that will be outlined further in the next chapter. We will see how the methods of teaching Irish have developed, largely thanks to the work of external, linguistic-focused committees and experts. The principal Irish language data collection instrument – the five-yearly Census of Population – will be critiqued along with a comparison with other international censuses. The chapter will close on two areas central to the outcomes in this study: attitudes towards the Irish language – covering findings from the first official analysis from the 1970s to present; and the notion of “new speakers” of Irish – an emerging dynamic in Irish language learning.

2.2 The status of Irish

Irish is the first of two official working languages designated in Article 8 of the 1937 Irish Constitution, with English as the second official language. The Irish language is a member of the Celtic sub-group of Indo-European languages, and has been spoken on the island of Ireland since before the introduction of Christianity in the period c.400 – c.600 AD (Doyle, 2015, Hindley, 1990). Irish has been recognised as an official language of the European Union since 2007 and was designated full official and working language status at EU level on January 1st, 2022. This means that the Irish language is now on equal footing with all other European languages when it comes to translated materials and communications produced by the European Union institutions. However, despite its official status, Irish remains a minority language, spoken mainly as a learned second language (Darmody and Daly, 2015, McCloskey, 2001). Ireland has been one of the only EU member states, with Luxembourg and Belgium, where the percentage of population claiming the national language as their mother tongue is below 70% (Eurobarometer, 2012). Irish was declared a compulsory school subject for primary level in 1922, and post-primary (secondary) level in 1927, meaning that all students, with limited exceptions, must take the language to the terminal examination, the Leaving Certificate, to fully

complete the compulsory education cycle. To become a primary school teacher in Ireland, you are required to have a minimum of a H4 grade (60% to 69%) in Irish at Leaving Certificate level. This requirement has recently become questioned as a potential barrier to the recruitment of non-national teachers (McBride, 2022). The 2016 Irish Census returns reveal that from a population of 4,761,865 people, under 40% declare themselves as Irish speakers, with only 4% of these using the language on a daily basis (CSO, 2017b). The majority of these Irish speakers reside in the Irish-speaking Gaeltacht regions, which represents just 2% of the population.

2.3 Irish in Northern Ireland

From a population of around 1.9 million, 11% of the population of Northern Ireland express some degree of Irish language ability (Northern Ireland Statistics Research Agency, 2014). Irish is not recognised as an official language in Northern Ireland, is not a core school subject, and is taught as a standalone, optional subject, generally limited to Catholic schools. The status of the Irish language in Northern Ireland is a highly contentious issue. Since Irish independence in the 1920s, the English and Irish languages, including Ulster Scots, in the North 'have been misappropriated as instruments to perform and perpetuate the Protestant/Unionist – Catholic/Nationalist divide' (Sharma, 2021, p.310). Two agreements, the *Good Friday Agreement* (1998) and the *St Andrews Agreement* (2006) have recognised the need for a legislative instrument similar to the *Welsh Language Act 1993* and the *Gaelic Language Act 2000*. The number of Irish-medium education schools has risen to 30 (Department of Education, 2022c), with the number of pupils in Irish-medium education up 472% since the Good Friday Agreement (Sharma, 2021). In 2001, the UK government ratified the European Charter for Regional or Minority Languages, giving the highest level of protection to Irish – a position yet to be officialised south of the border (Ó Ciaráin, 2019). However, the creation of a dedicated Irish Language Act in Northern Ireland has been prevented to date as a result of the political binary in the North, where

other legislative orders have been invoked to weaken the visibility of the Irish language.

2.4 Irish education structure

The *Education (Welfare) Act 2000* makes school attendance in Ireland up to the age of 16 obligatory, or to at least three years of post-primary education. The Department of Education coupled with the advisory role of the National Council for Curriculum and Assessment and *An Chomhairle um Oideachas Gaeltachta & Gaelscolaíochta*, are responsible for developing and administering the Irish language curriculum. Curricula delivered through the Irish language, outside the native-speaking Gaeltacht areas, are available through primary and post-primary Irish-medium schools known as *Gaelscoileanna*. Irish-medium education is in increasingly high demand, with over 350 *Gaelscoileanna* now providing primary and post-primary education through the Irish language (Gaeloideachas, 2021). The compulsory Irish education system generally consists of two education cycles – primary and secondary education. The eight-year primary cycle consists of junior and senior infants followed by first to sixth class, and usually begins at age four. Secondary education consists of a three-year junior cycle followed by a two- or three-year senior cycle, depending on whether the optional Transition Year is taken in year four. The end of the junior cycle is marked by the Junior Certificate exam. At the end of the senior cycle, students sit the Leaving Certificate examinations, typically at age 17 or 18 years. The standard Leaving Certificate programme was established in 1924, and now requires students to take at least five subjects, one of which must be Irish, from more than 30 subject options available (Department of Education and Skills, 2020). The average student receives compulsory Irish classes for five hours per week in primary, and 3 hours per week in secondary level, culminating in between 1,500 and 2,300 classroom contact hours by the time they complete the Leaving Certificate (Ó Ceallaigh and Ní Dhonnabháin, 2015, Ó Laoire, 2005a, Ó Laoire, 2005b). A number of

limited exemptions from taking compulsory Irish are available in restricted circumstances, including students with specific learning difficulties, students that undertook their primary education abroad or are re-enrolling following a sustained period abroad (Department of Education, 2019a). Decisions on exemptions are devolved to the individual schools, with teachers expressing concern at the ‘unchecked growth in the number of exemptions’ (Association of Secondary Teachers in Ireland, 2022, p.2). The exemptions were reviewed and updated by the Department in 2019 and 2022 with a shift away from outdated psychological assessments towards more standardised test scores (O’Brien, 2021). There are two alternative Leaving Certificate programmes available – the Leaving Certificate Vocational Programme (LCVP) and the Leaving Certificate Applied Programme (LCA). The LCVP, introduced in 1989, is similar to the Leaving Certificate but focuses more on technical subjects and vocational modules with the aim of preparing students for work and work experience. The LCA, introduced in 1995, is a person-centred two-year course, addressing the educational needs of those that are not catered for in the other programmes (Department of Education and Skills, 2018). The LCA does not require Irish as a compulsory subject.

The Leaving Certificate for the Irish language is available at three different levels – Higher, Ordinary and Foundation. The exam is divided into a number of papers testing written ability and comprehension, as well as an oral, and a listening examination. The oral examination is worth 40% of the final marks. Foundation level was introduced in 1996 for students unable to perform at the Higher or Ordinary levels and is only available in mathematics and Irish. The Foundation paper is based on basic communicative and functional literacy skills, with students offered multiple-choice answers for answering questions on written extracts, with written composition based around simple structures such as postcards. Leaving Certificate results are a combined system of grades and a common points scale. The points scale is used in the tertiary education sector, where course

entry is determined by a points threshold. In 2017, a new grading scheme was introduced to reduce the previous 14 grade possibilities to eight. Grade descriptors changed from a previous alphabetical system of A to F grades, to a numerical system of 1 to 8, with the level indicated. Points are allocated according to grade. For example, a H1 grade equates to the maximum number of 100 points, whereas the highest ordinary level, O1 grade equates to 56 points.

2.5 Irish in the education system

By the time that Ireland was subsumed into the British State in 1801, language shift was already underway. A number of interrelated factors led to the decline of the Irish language, including the exclusion of the language from the primary curriculum, increased English usage in the Catholic church and by nationalist activists, as well as an ever-growing circulation of English language newspapers and printed materials. This led to English being favourably viewed as ‘the language of the pulpit, commerce, prosperity and emigration’ (Walsh, 2012, p.11). The Great Famine of the 1840s saw the population fall by over 50%, whereby in 1912, the number of Irish speakers had declined to just 12% of the population. The emergent education system resulted in increased attendance and by extension a subsequent bias towards English, which now was seen as a prerequisite for economic prosperity (Kelly, 2002).

In 1831, the Commissioners of National Education established a network of national schools in Ireland, which was further extended through the *Intermediate Education Act of 1878*, providing funding to aid the establishment of secondary schools (Ó Buachalla, 1984). The national school system aimed to develop English language skills; a socialisation of norms that provided no Irish language support for the population that only spoke Irish or were bilingual (Walsh, 2016a). Previous to this, education had been provided by private, fee-paying Hedge Schools – unregulated schools established to teach non-protestant faiths, and by state-funded Catholic teaching orders, resulting in a wide network of primary schools (Walsh, 2012). Initially

a non-denominational education system, the board of commissioners ceded to the concerted efforts of the Catholic Church, resulting in the Catholic clergy taking control of the running of schools at the local level (Kelly, 2002).

The *Intermediate Education Act of 1878* introduced the Irish language for the first time into the curriculum, but only as an inferior subject with lower marks assigned than subjects such as Latin or Greek. Despite the inclusion of Irish as an extra subject, there was no subsequent provision to train teachers in the language until 1897, with no Irish lecturer employed in the Training Colleges until 1900 (Ó Buachalla, 1984). In 1908, the *Irish Universities Act* established the National University of Ireland (NUI) network of universities, with a pass grade in Irish introduced as a requirement for entry to NUIs in 1913, a requirement that still exists for four of the seven universities to this day. This requirement for tertiary-level education access in the NUI network cemented the position of Irish in the secondary education system.

In 1921, an Intermediate (Junior) and Leaving Certificate examination were introduced. A pass mark in Irish or English was required to pass these examinations. Without consultation or consideration of teachers or resources, as part of the 1922 National Programme for education, the Irish language was to be taught or used as a medium of instruction for at least one hour per day in every primary school. By 1928, over 1,200 primary schools were instructing entirely through the medium of Irish, whereas only 373 primary schools were instructing solely through English. Secondary schools, thanks to their lower student population and independence, were less inclined to follow a strict adoption of Irish as a medium of instruction (Kelly, 2002). Following an increasing politicisation and opposition to Irish as a medium of instruction, the decision was eventually reversed in 1960. In 1961, the five main preparatory all-Irish training colleges were discontinued, the effect of which saw a large decline in Irish language teaching standards

(Coolahan, 1981). A pass grade in Irish became a prerequisite required for passing the Intermediate Certificate examinations in 1927, followed by the Leaving Certificate in 1934. This compulsion was dropped in 1973, although the pass requirement for matriculation in the majority of NUIs still remains to this day. The Council of Education, reinforcing growing criticism that the examinations contained no oral element, stated in their report on the secondary curriculum that ‘the restoration of Irish as a living language in general use among our people is an integral part of national policy’, only achievable by focusing on oral skills (Council of Education, 1962, p.118). Oral assessment was introduced in 1960, accounting for only a sixth of the total marks. The 37-year period covering the implementation of the 1934 Revised National Programme, the third major revision since the establishment of the Free State, reinforced the Fianna Fáil government’s reorientation towards an exam-oriented curriculum (Hyland, 1986). This has embedded a lasting culture whereby the Irish language’s sole functional purpose for many is to pass the terminal exam. A child-centred curriculum was introduced in 1971, aiming to foster preparation for future citizenship, followed by the abolition of corporal punishment in 1982. This first major curricular reform was followed by a number of evaluations throughout the 1970s in which, while the standards of subjects such as mathematics increased, the standard of Irish in pupils was shown to have disimproved markedly (Walsh, 2016). The suitability of Irish standards, teaching resources and the appropriateness of the *Buntús Cainte* syllabus, discussed below, were questioned. The National Council for Curriculum and Assessment advocated for new communicative syllabi in the 1980s, modelled on the approach taken for other European languages. This was introduced in post-primary schools in 1989 and updated in 2017, and was introduced at primary level in 1999, updated in 2015 (Walsh, 2022). In 2012, the oral examination allocated marks increased from 25% to 40% of the final result, placing an emphasis on increasing the use and knowledge of Irish as a community language (Department of Education, 2007).

2.6 Irish language revival and policies

With the establishment of the Irish Free State in 1922, the government's approach to Irish language revival focused on two principal objectives: the preservation and expansion of the Irish speaking regions – the *Gaeltachtaí*; and the use of state education to achieve bilingualism. According to Kelly (2002), the flaw of the Free State government in its attempts to revive the Irish language, was its failure to recognise the association between English and economic prosperity, instead taking the approach that a de-anglicised education system would lead to a revival of Irish. A philosophy of cultural nationalism aided by an education system focused on Irish language skills – to the potential detriment of students' educational development – became the pervasive policy approach (Ó Riagáin, 1997). The government's Irish language revival philosophy resulted in what Kelly (2002, p.12 & 14) describes as a 'gulf between nationalist ideals and pragmatic realities...theoretical aspiration and practical application'.

The founding of *Conradh na Gaeilge* (The Gaelic League) in 1893, with the aim of promoting the Irish language, successfully campaigned for the matriculation of Irish in the NUI network in 1913. As a result, secondary level schools required more contemporary Irish language materials. This coupled with the government's post-independence desire to promote Irish not only through the school system, but through law, administration and official publications, led to an overdue necessity for a standardised system of spelling and grammar (Ó Baoill, 1988). Irish spelling to this point had included consonant clusters no longer reflective of contemporary phonology (Walsh, 2022) The resulting finalised publication *Gramadach na Gaeilge agus Litriu na Gaeilge* (The Grammar and Spelling of Irish) was published in 1958. Similar efforts for standardising spoken Irish in the 1980s were unsuccessful.

In the 1920s and 30s, the Irish language was increasingly being given exceptional status (Ó Laoire, 2005a). The compulsory introduction as part of the curricula of national and secondary schools, the requirement that a pass in the Leaving Certificate being requisite for award, the necessity for entry into the civil service, as well as financial incentives for schools participating in teaching through the medium of Irish all contributed to the position of the education system as the proxy site for driving the restoration process. However, the residual effects of a marriage ban, effective from 1933, where female teachers were forced to leave their employment and ‘safeguard their role in the home as wives and mothers’ once married (Redmond and Harford, 2010, p.639), lead to a widespread loss of capable Irish language teachers from the education system (Dunne, 2020). This legislative intervention at addressing economic downturn was discontinued in 1958. From the 1950s, the State began to establish external advisory boards to assess policies and recommend changes, giving the impression that the government was beginning to distance itself from taking leadership on Irish language policies (Ó Riagáin, 1997). With a number of reports commissioned on language restoration and language planning in the late 1950s and 1960s, highlighting an obvious issue still prevalent today – restoration through education could not take place in isolation from the external society. Wider concerns for the decline in Irish language skills prompted the government to review its approach, gravitating away from re-Gaelicisation towards a vaguer policy of bilingualism, best exemplified in the 1965 *White Paper on the Restoration of the Irish Language* (Ó Laoire, 2005a, Walsh, 2012a). This redirection resulted in a large number of institutional supports for the language being withdrawn or removed (Walsh and McLeod, 2008). However, the government attempted to address increasing concerns that native-speaking areas were in danger of disappearing by introducing the *Ministers and Secretaries (Amendment) Act, 1956*, referred to as the Gaeltacht Act (Kearns, 1974). The Act established *Roinn na Gaeltachta* (Department of the Gaeltacht) to support the use of Irish in the region, and defined the Gaeltacht as a linguistic rather

than geographical entity. Free post-primary education was introduced in 1967, greatly increasing both the opportunities for students and demands on the education system. The liberalisation of the Irish economy, the resultant growth of the private sector, and the pivot towards Europe in the 1960s meant that any remaining utilitarian need for learning Irish was only further weakened. The establishment of *Comhairle na Gaeilge* (Council of Irish) in 1969 marked an acknowledgement of linguistic research as an important contributor in public policies on the Irish language. The *Comhairle* produced a number of landmark reports, most significantly *Implementing a Language Policy* and *Irish in Education*, where ground-breaking recommendations rooted in linguistic fields such as sociolinguistics and psycholinguistics were submitted to government. For example, proposals such as the concept of diglossia, where Irish curricula would develop in parallel with community language programmes (Walsh, 2022). One of its most salient contributions, however, was the establishment of the Committee on Irish Language Attitudes Research (CILAR) in 1970, comprising academic and professional experts in education and linguistics, tasked with carrying out a comprehensive assessment on current attitudes to the Irish language and the support for language policies. The report found that public support, although positive in regard to cultural and ethnic integrity of the language, was waning to the degree that ‘the language is not very suitable to modern life’ (CILAR, 1975, p.24). This growing absence of sustained public support coincided with the withdrawal of Irish as a requirement for entry into the civil service in 1974. These developments appear to have been counterbalanced to an extent by the increasing calls for State support for Irish-medium education *Gaelscoileanna* since the 1970s (Ó Ceallaigh and Ní Dhonnabháin, 2015). This period of research from the 1960’s to the 1980’s, while commendable for the breath of work produced by numerous, temporary consultative bodies, is marked by a lack of commitment by the various governments of the day. The failure to establish or resource these entities on a statutory footing naturally led to a paucity of any Irish language national strategy. In fact, the

closure of the Linguistics Institute of Ireland (ITÉ) (see below) in 2003 has now left the Irish state without its own language research agency.

The Irish government's current principal Irish language policy document, the *20-Year Strategy for the Irish Language 2010-2030* (Government of Ireland, 2010), aims to 'increase on an incremental basis the use and knowledge of Irish as a community language' and to 'ensure that as many citizens as possible are bilingual in both Irish and English' (Government of Ireland, 2010, p.3). The *Statement on the Irish Language 2006* cites other government interventions, chiefly the status given to the Irish language in the Constitution; legislation such as the *Official Languages Act 2003*; the *Education Act 1998*; the *Planning and Development Act 2000*; the *Broadcasting Act 2001*; and the *Gaeltacht Act 2012*, which aims to stabilise the current patterns of language shift (Ó Ceallaigh and Ní Dhonnabháin, 2015). As part of the *Official Languages Act 2003* (updated with over 300 amendments in 2021), the role of *An Coimisinéir Teanga* (Irish Language Commissioner) was established to monitor the compliance of public bodies with providing services through Irish, and to investigate complaints made by the public in instances where their Irish language requirements are not being met (An Coimisinéir Teanga, 2018). A small but significant change in the amended Act saw public service IT systems being required to be capable of correctly recording the use of the *fada*, the only diacritic mark used in Irish spelling. The Government's *Polasaí don Oideachas Gaeltachta 2017-2022* (Policy on Gaeltacht Education 2017-2022) was launched in 2016, marking the first policy intervention addressing the educational needs of Gaeltacht areas, aiming to promote total immersion in secondary schools. The *Polasaí* is part of the *20-Year Strategy*, where one of the quantifiable objectives is to: 'increase the number of people with a knowledge of Irish to 2 million'; and 'increase the number of daily speakers of Irish to 250,000' (Government of Ireland, 2010, p.9). However, a pervading, unresolved issue is the explicit use of 'knowledge' as a metric. It is difficult to envisage how success will be measured if the only

population-wide measure on Irish language ability available to the State is the Census of Population, which reports on speaking ability only. This concept of Irish language “knowledge” is one that will be discussed, referred to, and questioned in a number of contexts within this research.

2.7 Irish language teaching methods

In Ireland, the Irish language is taught in three very different contexts: English-medium schools, Irish-medium schools and Gaeltacht schools. Gaeltacht pupils were taught the same curriculum as native English speaking students up until 2017, where the government eventually recognised the need for a separate syllabus for Irish-medium environments (Walsh, 2022). For the purposes of this section, the context of analysis and background will be mainly focused on the teaching of Irish as a L2 in an English-medium context.

With the introduction of Irish into the curriculum following the *Intermediate Education Act 1878*, Irish language teaching methods were modelled on the rote learning associated teaching of Latin and Greek. Furthermore, Intermediate Certificate students were examined on a knowledge of Early Modern Irish, which had not been spoken for over 300 years (Doyle, 2015). It wasn't until the 1900s that modern grammar and readings were introduced into the curricula. The Gaelic League, which was established in 1893 with the aim of keeping the Irish language alive through the promotion of speaking the language, viewed all Irish people as potential Irish speakers, with language use framed not as a competence but as a willingness (Doyle, 2015). The local voluntary classes provided by the League employed the direct method of language teaching – one of the “natural approaches” to language teaching where classroom instruction is conducted exclusively through the target language and grammar is taught inductively (Richards and Rodgers, 1986). In *Notes for Teachers: Irish*, circulated by the Department of Education in the 1920s, primary school teachers were advised to use this direct method for teaching Irish,

suggesting the phrase method for junior classes, as well as series method, and the triangular conversation method (Kelly, 2002). The *Notes* underlined the importance of conversation ability. A content-type syllabus was introduced which presented language as a set of finite rules which could be arranged to form meaning (Ó Laoire, 2005a). The issue with this methodology is that teachers were required to be native-speakers or have native-like abilities in Irish – an issue exacerbated by the fact that less than one third of all lay teachers had Irish language competencies (Hyland, 1986). A wider issue was that the direct method, according to linguists in the 1920s and 1930s, lacked a thorough methodological basis (Richards and Rodgers, 1986). Despite curricular revisions through the years, including a focus on communication and audio-visual materials, the legacy of the direct method is still felt to this day (Ó Laoire, 2012). Between the 1930s and 1960s, the ABC method was consistently applied in primary schools (Harris and Ó Duibhir, 2011). This was based on an aural-oral approach focusing on three aspects of the Irish language – structure, vocabulary, and free conversation. Many teachers continued with this approach, even with the growth in popularity of another course method, the audio-lingual method (ALM), outlined below.

The grammar translation method, a text-based approach to learning grammatical rules that had been inherited from the classical method associated with teaching Greek or Latin, had been a feature associated with fee-paying schools and elitism until the introduction of free secondary education in 1967 (Ó Laoire, 2005a). With the induction of students from a variety of socio-economic backgrounds, this pedagogic approach quickly became outdated. In the decade preceding this development, an over-emphasis on a syllabus founded on comprehending overly difficult literary texts was cited as a prime reason for a deterioration of standards in Irish and an increase in failure rates (Curriculum and Examinations Board, 1985). The use of ALM took prominence in the classroom from the 1950's onwards (Ó Duibhir and Cummins, 2012). ALM is a behaviourist approach based on a

structural view of language where linguistic items are recognised as systematically related elements including phonology, grammar, lexical items, etc. (Richards and Rodgers, 1986). This pedagogic approach reduces language learners to passive agents, ultimately learning through repetition rather than interaction (see Larsen-Freeman, 2011). Reading was minimised as a reaction to the literary association in the grammar translation method. ALM was formalised in the 1971 curriculum, and remained as such until replaced with a communicative approach in the 1999 curriculum (Dunne, 2020). Popularity with ALM began to recede with growing evidence of the advantages of cognitive and socio-cultural approaches in which language input and output became critical objectives (Ó Duibhir and Cummins, 2012).

A professionalisation of language policy emerged in the mid 1960's, culminating in the appointment of Fr Colmán Ó Hullacháin, a trained linguist and primary driver in modernising Irish teaching methods at the Franciscan College in Meath, as linguistics advisor to the Minister for Education, Patrick Hillary, in 1963 (Walsh, 2022). Ó Hullacháin's research on morphology and syntax of spoken Irish led to the production of *Buntús Cainte*, an audio-visual course for primary education focusing on conversational Irish. The course provided handbooks, recordings, images, graded reading books based on oral assessment, all for the purpose of preparing teachers in developing in class Irish conversation. Between 1967 and 1970, the course was piloted across primary and secondary schools with teachers trained in delivering the method. The course was refined and formed a core aspect of the 1971 curriculum reform. *Buntús* was welcomed by teachers due to the provision of resources and clarity of teaching aims (Walsh, 2012b), and became the official model for the Department of Education's conversational course *Nuachursaí*. However, an over-reliance on the course methods has since been regarded as having had a negative impact on standards (Mac Aogain, 1990). Despite criticisms, the *Buntús* series eventually morphed into a self-learning course for adults, as well as becoming a standard in, and influence on teaching,

specifically in primary school, up to 2000 (Ó Laoire, 2010). Ó Hullacháin's influence on Irish language policy continued over the following years, with his appointment as director of the Linguistics Institute of Ireland (*Institiúid Teangeolaíochta Éireann, ITÉ*), where he invited the sociolinguist Joshua Fishman to meet with and make recommendations to the government on Irish language policy. The bureaucratic obstacles that greeted Fishman and Ó Hullacháin, ultimately leading to the latter's dismissal from the ITÉ in 1971, is a narrative beyond the scope of this study.

In the 1980s, the focus began to shift toward syllabi that promoted the teaching and learning of languages for communicative purposes, and marked a move away from a focus on reading and writing skills. This had been prompted by Ireland's accession to the European Economic Community in 1973. A reformed communicative-oriented syllabus was developed and implemented in post-primary in 1989 followed by primary level in 1999, and updated in 2017 and 2015 respectively (Walsh, 2022). However, Irish and other modern languages still tended to be taught in isolation from each other (Council of Europe, 2008), thus preventing teachers from achieving the learning efficiencies associated with directing children's attention to the similarities and differences between languages. Empirical research began to emerge which highlighted the advantages of an integrated language curriculum which advocated for a transfer of literacy and learning strategies to other languages (Ó Duibhir and Cummins, 2012). In 1999, general curriculum planning at the primary level was reconceptualised as an opportunity for creating 'connections between learning in different subjects' in a process which 'emphasises the interconnectedness of knowledge and ideas and reinforces the learning process' (Department of Education, 1999, p.11). The positioning of language in this approach has become all the more pertinent in the context of a growing multilingual society and classroom, with over 600,000 Irish residents speaking a language other than Irish or English at home (CSO, 2017c).

These developments have naturally evolved towards an integrated approach, spearheaded by Content and Language Integrated Learning (CLIL), where the target language is used as the medium to teach both content and language. This methodology seeks to distance language learning from the reductive methods of recycling existing language knowledge, where form and meaning are often separated (Coyle et al., 2009). Previous communicative language teaching methods have presented the challenge of providing students with authentic contexts for language teaching. CLIL's advantage is that context and content are intertwined, leading students to derive meaning from the lessons (Harris and Ó Duibhir, 2011). A further holistic goal is to foster innovation in teaching methods focusing on didactic communication, digital and critical literacy (Dunne, 2020). In 2019, the Department of Education announced a three-year pilot project involving 19 schools from pre- to post-primary adopting CLIL in the teaching of Irish through subjects such as physical education (Department of Education, 2019b). The initiative highlights the benefits of CLIL, including improved motivation, cultural awareness and cognition in pupils, as well as aligning with the suite of objectives in the *20-Year Strategy*.

2.8 Measuring abilities and attitudes

2.8.1 The Irish Census

The Irish language question in the Census is among the oldest consistently recorded public statistic on any language in the world (Riagáin, 2001). The first Census of Population was carried out on the island of Ireland in 1821 and continued at 10-yearly intervals up to 1911. The Civil War meant that the next Census was not conducted until 1926. The 10-year frequency resumed until 1946. The only interruptions to the subsequent 5-year census cycles occurred in 1976, with a restricted version taken in 1979, followed by a full census in 1981; and the 2001 Census – postponed until 2002 due to an outbreak of foot and mouth disease (The National Archives of Ireland, 2021). The Irish language question was introduced as an education component

question in 1851. This was separated into its own category in 1881 (Punch, 2008), where people were asked to write speaking ability ('Irish' or 'Irish and English') beside each occupant of a household.

The 1926 Census, the first conducted following independence, introduced 'Irish only', 'Irish and English' for native Irish speakers who could speak English and 'English and Irish' for native English speakers who could speak Irish, as well as 'read but cannot speak Irish' (CSO, 1926). In 1936 the second and third categories were amalgamated as 'Irish and English'; this remained up to 1991. The 1926 Census results acknowledge the limitations of Irish language data derived from census returns by stating 'it is extremely difficult to devise a method simple enough for census purposes which would permit a rigid distinction being made between those who 'know Irish' and those who do not' (CSO, 1926, p.iii). The 1926 publication also discuss the difficulty that the population were having in self-declarations with a proposed "native speaker" category, with an abandoned trial indicating people were interpreting proficient knowledge as the same as native speaking ability. Until 1996, those who indicated they could either speak 'Irish only' or 'Irish and English' were categorised as Irish speakers, while those that could 'read but cannot speak Irish' were classified with English-only speakers as 'Non-Irish speakers'.

Coverage of the Irish language question was restricted to people 'over 3 years' from 1961. The 1993 annual labour force survey was used to test question layouts, in consultation with *Roinn na Gaeltachta* (Punch, 2008). The result is the current format, where declaration of frequency was introduced for the first time. The 1996 Census represented a break in continuity from previous Irish language data collection in reducing the language question to a binary option based on speaking ability only. The question now reads 'Can you speak Irish?' with a 'yes/no' option. For those that choose 'yes', they are asked to declare the frequency from the following options: 'daily, within the education system';

‘daily, outside the education system’; ‘weekly’; ‘less often’ and ‘never’. In the absence of Irish speaker definition, this format change has more than likely led to inconsistencies in self-declarations, as those with even the most limited Irish speaking ability may consider themselves as “speakers” of Irish (Ó Riagáin, 2018). Following a consultative process in 2017, the 2022 Census included a further question on Irish. For those that stated they could speak Irish, they were also asked ‘If ‘Yes’, how well do you speak Irish?’, followed by three options: ‘very well’, ‘well’, and ‘not well’ (CSO, 2022b). This format is similar to self-assessing English in the UK and US censuses.

Census data’s advantage is coverage and geographical analysis. A disadvantage is adults of varying educational attainment self-evaluating, thus precluding trained interviewers from probing deeper. The next chapter will provide a general appraisal of self-evaluation of language abilities, including the methodological issues associated with perceptual and metacognitive miscalibrations. We will see how reliability of language self-assessment is questionable due to variables such as self-awareness, confidence, experience, etc., as well as the inverse phenomenon of high performers providing conservative estimates of ability compared with low performers’ over estimations. To this end, Hindley (1990, p.47) provides a critical assessment of census Irish language data by suggesting that the figures are inflated by ‘patriotic and nationalistic sentiment, ‘wishful thinking’ by persons who would like to speak Irish’, thus making the process akin to a public opinion poll on what the status of Irish ought to be. Darmody and Daly (2015) and Murtagh (2007) also caution against the interpretation of census data, by highlighting the ever-present issue of self-declaration when interpreting the term “speaker”. Watson and Nic Ghiolla Phádgraig (2011) argue that only a third of self-declared speakers can actually use the language appropriately. For example, an individual may symbolically classify himself or herself as an Irish speaker but may not actively produce the language (Barry, 2020). Furthermore, the 2016 Census shows that of the almost 1.8 million Irish speakers, 24%

of these (418,420) claim to ‘never’ speak the language (CSO, 2017a). A further disadvantage in interpreting Irish language data collected in the Census is that we cannot establish how many of the non-speakers have studied Irish to Leaving Certificate level. This measure would provide for a more solid foundation in debates around the nature of compulsory Irish in education. However, in the absence of a more robust alternative to self-evaluative population-wide data, the Census remains the only population metric on Irish abilities for the State. Alternative metrics such as public examination results from the Department of Education and Skills have been previously cautioned against due to changes in grading standards year on year (Harris, 1982). Figure 2.1 below, based on CSO reports, represents the total self-declared Irish speakers relative to the population from 1926 to 2016. From 2001, the number of speakers relative to a growing population have declined with each census return.

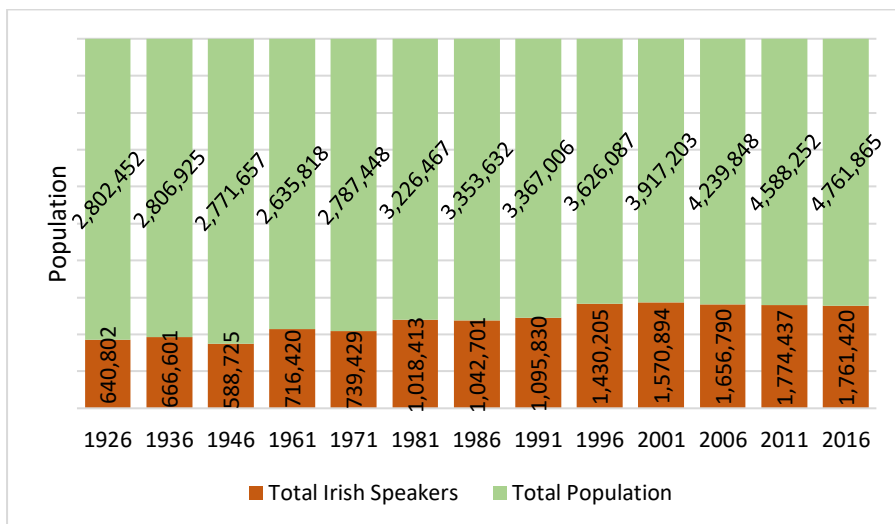


Figure 2.1 Census data on Irish speakers 1926 – 2016

2.8.2 Other national censuses

National censuses are far from being simple enumeration exercises; they are often politically- or ideologically-driven (Higgs et al., 2004). The questions asked and the order in which they appear can empower or disempower linguistic and ethnic groups (Sebba, 2019). While the

Irish Census is no longer concerned with counting understanding of Irish reading or writing, the UK Census, as an example, since 2001, has included such questions on minority languages as: ‘can you understand, read, or write Scottish Gaelic?’. In the Northern Ireland Census (2011), the question asked on Irish was ‘can you understand, speak, read or write Irish...?’. The collection of statistical data on minority languages has the potential to advocate for resources for maintenance and revitalisation (Urla and Burdick, 2018). The inclusion of the Scots Gaelic language question is interesting in how it was seen as a useful tool for language policy development, education planning, cultural and touristic development (Sebba, 2019). The original language questions were piloted by the Office of National Statistics (ONS) as a matrix, with respondents required to tick whether they could understand, speak, read or write English and Welsh. However, using these terms in a matrix format have been known to cause difficulties in interpretation; as borne out by the pilot and international research (Office for National Statistics, 2009). The ONS even piloted the New Zealand census question, which asks to choose from a list of languages how many they can ‘have a conversation about a lot of everyday things’. Interpretation of ‘everyday things’ proved difficult for respondents.

The use of categories of proficiency for self-assessing speaking abilities in English in the UK Census is identical to that of the US Census – ‘very well’, ‘well’, ‘not well’ and ‘not at all’. As discussed, this has now been added to the Irish language question on the Irish Census. This arbitrary categorisation of language ability is replete with reliability issues. Edele et al. (2015) and Finnie and Meng (2005) highlight both the inaccuracy of arbitrary categories and the only moderate correlation of non-specific, context-free ability questions with actual tested linguistic ability. In the case of the study of literacy self-assessment, actual abilities and labour outcomes, Finnie and Meng (2005, p.1947) found that ‘individuals seem to assess their literacy levels relative to some ‘local’ standard (defined by educational level, immigration status, place of residence, etc.)’. The use of a perceptual,

comparative standard emerges as a factor in Irish language self-assessments, as will be discussed further below.

2.9 Attitudes towards the Irish language

Despite largely positive attitudes towards the Irish language (see Darmody and Daly, 2015, Mac Gréil and Rhatigan, 2009, Ó Riagáin and Ó Gliasáin, 1994), there is an increasing gap between these attitudes and everyday use (Atkinson and Kelly-Holmes, 2016, CSO, 2017b). In fact, Edwards (2017) goes as far as to suggest that these reported attitudes are often prone to exaggeration by Irish language activists that carry out this research. Once students leave the education system, levels of Irish language use dramatically plummet due to extending periods of non-use (Murtagh, 2007), while Irish-speaking networks have never been sufficiently large enough to create self-sustaining, Irish-speaking communities in urban centres where the language can be practiced outside the classroom (Ó Riagáin, 1997). Devitt et al. (2018) make an important distinction between attitudes towards the language and attitudes towards learning the language. With the majority of people's experience with Irish being for the purpose of sitting the Leaving Certificate, it is likely that these positive attitudes in adults are more associated with the symbolism of the language rather than the learning experience (Atkinson and Kelly-Holmes, 2016, Watson, 2008). The CILAR report found that attitudes towards Irish in education demonstrated a weak correlation with public support towards Irish, a trend that still exists today. What emerges is a dual, often non-converging ideological orientation where sometimes negative school experiences with learning Irish appear to coexist with overall positive attitudes to the language in general (Barry, 2020). The CILAR report found that these negative school attitudes recovered somewhat in the years after leaving school. Tovey et al. (1989) allude to this post school enthusiasm for the Irish language as akin to a “recovery period” in which negative associations dissipate with the passing of time.

2.10 New Speakers

The term “new speaker” describes an individual that:

‘did not learn a (minority) language through family transmission in the home or through exposure to its use within their local community, but instead acquired it through the education system or as adult learners, often in the context of language revitalisation projects’ (Brennan and O'Rourke, 2019, p.8).

This definition is used to describe the majority of citizens in the Republic of Ireland that have experienced Irish through the education system (O'Rourke and Walsh, 2015). Applying this definition means that there are vastly more new speakers of Irish than native speakers, which raises an ongoing concern in minority language contexts, the concept of language ownership and legitimate speakers (O'Rourke, 2011). Woolard (2008) posits that language is legitimised not only by its speakers, but by non-speakers seeking out authenticity or legitimacy. This appears to be the case with the Irish language, where a “them” versus “us” dichotomy often emerges in language learning contexts (O'Rourke, 2011, p.334). Authenticity, in the Irish context is traditionally legitimised through the native speaker. It has been documented that new speakers rarely achieve native-like proficiency, instead acquiring a qualitatively different language variety (Ó Murchadha and Flynn, 2022). In a qualitative study based on interviews with civil servants of varying Irish abilities conducted by Barry (2020), it was found that adult learners referenced the language ownership concept in differing contexts. For example, an intermediate learner of Irish had joined a number of social clubs comprised entirely of native Irish speakers. The learner found that the group often switched to speaking English in their presence and responded to their Irish language attempts in English. The same study found that participants who were educated through Irish and interfaced regularly with the public through Irish were still reluctant to recognise themselves as Irish speakers. In a study on the experiences of teenagers spending time in

the Irish-speaking *Gaeltacht* to improve their learned Irish skills, Coughlan (2021) identifies the conflicting needs of new speakers and marginal community members, similar to the experiences of the participant in the previously mentioned study. New speakers that rely on the status of Irish as a national emblem believe there is an automatic kinship with native speakers, and that these people are linguistic “resources” – a feeling that is not always reciprocated. Walsh (2019) analysed a series of interviews with new speakers of Irish, in which he highlights language trajectories – the individual journeys taken by learners – as a key dynamic. He concluded that the emotions experienced by new speakers represent ‘critical junctures of language transformation’ (p. 233) and that the act of acquiring a minoritised language leads to a contentment far greater than that associated with a wider spoken L2. According to Ó Murchadha and Flynn (2022), the Irish language teacher has a dual role to play: be the upholder of authentic and traditional Irish, as well as encourage new speaker participation in Irish language revitalisation through language varieties. With an increasingly diverse linguistic population in Ireland where over 620,000 people speak a language other than Irish or English at home (CSO, 2017c), these findings only further highlight the sociocultural complexities in which Irish finds itself among competing language ideologies (Atkinson and Kelly-Holmes, 2016).

2.11 Conclusion

This chapter has sought to demonstrate how the Irish language revival movement post-independence has had overlapping policy, economic, and societal consequences that have coalesced around the Irish education system. Faced with declining numbers of Irish speakers, various iterations of the Irish government have attempted to intervene to arrest the phenomenon of language shift. The introduction of compulsory Irish in the education system in the 1920s did not provide the holistic solution sought by various Irish language activists. The embedding of the English language over previous centuries across such keystones as the church, the economy and the school system greatly

diluted the utilitarian requirements in which a language thrives. Walsh (2022, p.319) aptly summarises the past 100 years of Irish language policies as being characterised by ‘idealism, naivety, dedication, enthusiasm, hypocrisy, apathy and hostility’. As discussed, the inability to move beyond bureaucratic gesturing, as evidenced by the indifference faced by committees or external experts, has led to the current position where the Irish language receives more protection at a European level, or from the UK government via the European Charter for Regional or Minority Languages.

This chapter has outlined how the Irish language has evolved through the education system, conferring upon Irish L2 learners the status of new speakers. The marked decline in Irish language standards in pupils from the mid-1980s up to the curricular changes in 1999 are, according to Dunne (2020), largely attributable to legacy curriculum, the reduced time allocated to Irish with the addition of new subjects in 1971 and 1991, unrealistic expectations that the education system could reverse language shift, but most importantly, an ambivalent public in the face of these declining pupil standards. This last point merits further consideration. The source of this ambivalence is hardly enigmatic in nature. The lack of, or limited opportunities to use a language outside the school environment is detrimental to both language acquisition and maintenance. The undeniable link between English and economic prosperity further compounded this ambivalence. Therefore, the general acceptance is that Irish is learned for passing an examination (Darmody and Daly, 2015). The failure to increase active participation in the language outside the education system has seen curricular changes assuming pedagogic approaches more akin to the teaching of European languages. The focus on communication, aided by the increase in marks awarded in the Irish oral examination in the Leaving Certificate is a positive acknowledgement of the social situatedness of second language acquisition.

This chapter also provided a discussion on self-assessment on censuses as a methodology for recording national language statistics. We saw how the Irish Census highlighted self-assessment issues as far back as 1926 – a position that has not been resolved, as can be seen from the relatively small sample of national censuses also discussed in this chapter. Aptly recording the individual differences and complexities of language abilities as will be discussed further in Chapter 3 remains an ongoing concern. Supranational bodies such as the European Union have proposed solutions such as the CEFR – a descriptive matrix of “can-do” statements covering varying language levels and skills. Unfortunately, an Irish language matrix has yet to be developed. The CEFR as a language self-assessment tool is discussed further in Chapter 5.

In conclusion, the Irish education system has come to represent the primary interface for Irish language learners. The consequences of legacy curricula and teaching methods have resulted in a varying approach to the teaching and learning of Irish, with individuals receiving vastly diverging school experiences. For example, the use of corporal punishment up to 1982 often manifests itself in a general acceptance that the learning experience was negative, with Irish language error-making associated with physical punishment, thus affecting perceptions of language competency (see Barry, 2020). The outcomes of these Irish language learning experiences allow us to focus on the individual learner via the conduit of perceptual self-appraisal offered by self-efficacy. As the next chapter will show, the Irish language learner experience is replete with perceptual, institutional, cognitive and motivational variables, all of which create a complex dynamic through which the language is transmitted and acquired..

3. The Language Learner

This chapter seeks to provide a contextual background to the Irish language learner, the core stakeholder in this research. It is impossible to decouple the Irish language learner from the actual process of acquiring the language, especially if one considers the idiosyncratic nature of language acquisition itself. How the Irish language classroom has contributed to bias formation, whether from an attitudinal or perceptual perspective, is essential in considering, for example, the data behind national self-assessments of Irish language skills. By using a general overview of these processes, including references to some of the limited research in the Irish context, this chapter seeks to present some of the determining variables that influence how Irish language skills are self-assessed, including how they contribute to self-efficacy belief formation. The overall objective is to prime the reader for the overview of self-efficacy in Chapter 4. A key focus in this research will be on language learners that have learned Irish in school with the final aim of sitting the Irish language Leaving Certificate. Other Irish language learning contexts abound, such as native Irish speakers in English-medium schools. However, based on frequency of usage data (CSO, 2017b), the majority of those taking Irish in school are second language learners. Likewise, the majority of Irish language teachers are also L2 Irish language speakers (Flynn, 2020). This chapter will discuss the concept of the language learner by framing the experience in a SLA context, addressing theories of teaching and acquisition, the learner's individual differences and passive versus active language skills. This will be followed by an overview of self-assessment of language skills, the primary methodology for measuring Irish speaking abilities in the state. Finally, in concert with the principal theoretical framework of this research – self-efficacy, perceptions and beliefs of L2 loss versus retention, assessed as language attrition theory, will be considered.

3.1 The learner

Second language learning differs from other school subjects due in large part to the complexity of the learning situation, which includes the intersection of explicitly learned rules with an intuition acquired through social structures (Bialystok, 1979). This is in contrast to first language acquisition where children acquire fluency without the metalinguistic awareness or cognitive development and maturity associated with older second language learners (Lightbown and Spada, 2013). Students are not just passive agents, and teachers are not solely providers of L2 input. Learning a second language involves processing conceptual and abstract information, as well as developing and accessing mental representations of language structure through four key skills: reading, writing, listening and speaking, all within a complex social structure. The Common European Framework of Reference for Languages (CEFR) presents a second language user or learner as a ‘social agent, acting in the social world and exerting agency in the learning process’ (Council of Europe, 2001, p.28). As communication attempts are evaluated, be it in an educational or social context, the associated challenges and risks of production and interpretation are likely to confront an individual’s communicative self-concept (Horwitz, 2001). No other school-learned subject faces the same degree of scrutiny or complexity, thereby highlighting the importance of the SLA environment and the agents that operate within its structures.

Theories of language acquisition have evolved through a number of theoretical perspectives, generally in tandem with psychological paradigms (Randall, 2007). Early research exhibits an over-simplistic tendency to explain the process through universal principles, applicable across individuals and contexts (Griffiths and Soruç, 2021). For example, the behaviourist perspective, advocated for by Skinner, which suggested that acquisition was based on imitation, practice and positive reinforcement was superseded by the innatist perspective in which Chomsky argues that all children are biologically conditioned to

discover for themselves the latent rules of language based on the limited samples of language exposed to them at an early age (Cook, 1985). The internalised latent rules represent a modular approach, referred to as the language acquisition device (LAD), in which sequential stages are subconsciously progressed through to create the desired linguistic output. The interactionist perspective, which emphasised language as being socially and contextually situated, argued that the innatist view placed too much importance on an end goal of native-like competency instead of the developmental aspects of learning (Gass and Selinker, 1994). Vygotsky argued that a supportive, interactive environment using scaffolding – a method using linguistic supports to introduce new vocabulary or rules – would enable children to more effectively advance towards an independent command of the language (Dunn and Lantolf, 1998). Criticisms of this constructivist approach tend to centre on the lack of encouraged spontaneity in cognitive processing – a rigid perspective that appears to reflect Vygotsky’s own personal school experiences (see Shayer, 2003).

Stephen Krashen introduced the first attempt at formalising SLA as a theory with the Monitor Model – founded on concepts derived from Chomsky’s first language acquisition theories, comprising five hypotheses. One of these, the Monitor hypothesis, best summarises the Model in suggesting that L2-produced utterances are derived from an acquired sub-conscious level, with the Monitor functioning as the editor. To access this function, learners must be conscious of the rule and be conscious of the need to achieve correctness in communication (Krashen, 1985). Another of Krashen’s hypothesis is particularly relevant to this research – the affective filter. According to Krashen and Terrell (1983), affective variables such as motivation, self-confidence, and anxiety strongly correlate with L2 acquisition. Having a low socio-affective filter (Dulay and Burt, 1977) is necessary for developing an “open” attitude to the acquisition process. If a learner demonstrates a high affective filter, a perceptual block often prevents them from fully engaging with L2 input and output. Furthermore, input will never reach

the LAD and may lead to fossilisation – a state of arrested L2 learning progress where learners find it extremely difficult to develop beyond learned rules and vocabulary (Krashen, 1985). The loss of brain plasticity in advancing years means that attainment of the L2 remains incomplete with deviances from the L2 norms becoming fossilised (see Selinker, 1972). Evidence of fossilised linguistic forms usually emerge when learners are required to move beyond rote-learned grammatical structures, for example, to produce a meaningful performance in their own words. With a lowered filter the learner is less influenced by affective variables in gaining access to the L2 speech community. These learners are regarded as those with optimal attitudes towards the L2 acquisition process (Krashen, 1981). Long (1996) built on another of Krashen's hypotheses that comprehensible input is the crucial ingredient in SLA. Long's interaction hypothesis argues that the L2 is only acquired through communicative interactions, negotiation of meaning and post-modified input – a form of feedback that involves reformulating the learner's inaccuracies (Randall, 2007).

Another influential hypothesis that intersects some of the theories of L2 learning in this study is the critical period hypothesis, developed by Lenneberg (1967). This states that a brief window, anchored to biological development, usually between the ages of two years up to puberty, provides optimum conditions for language acquisition. For new speakers of Irish, i.e., those that acquire the language through school or as adults, the emergence of Irish language varieties is often viewed as a failure to acquire native speaker norms due to lack of input during this critical period (Ó Murchadha and Flynn, 2022). Jackendoff (1985, p.16) assigned the term 'cognitive constraint' to explain how age-related deficiencies in peripheral systems such as vision, nonverbal audition and kinaesthesia directly impend upon linguistic capacity. Despite the proliferation of empirical evidence, researchers such as DeKeyser (2013) have questioned the instrumentation and sampling methods on age related research in L2 acquisition, including failures to factor in concepts such as identity issues, individual characteristics or

affect. Although reductive to generalise, biological and cognitive maturation does appear to reduce brain elasticity in the majority of individuals. Following this critical period, the acquisition of grammar is difficult and less achievable (Fromkin et al., 2013). The number of hypotheses and theories on language acquisition are wide and varied. While the outline above is brief and serves to only present some of the main theoretical developments, as already stated, its purpose is to highlight some of the key concepts encountered throughout this research.

3.2 Second language acquisition

In order to acquire a communicative skill such as a second language, individuals require explicit input and more often than not, instruction and interfacing with language teachers. As such, and similar to theories of L2 acquisition, L2 teaching methods have evolved as variables such as technology, learning environments, social and economic contexts, and learner demands have changed through the years. Spolsky aptly describes these changes:

‘Where once they were faced with Berlitz Methods, and Army Methods, and Ollendorf Methods, and Direct Methods, and Series Methods, language teachers are now offered the Total Physical Response, Community Counselling, and Suggestopedia’

(Spolsky, 1989, p.1).

The list of L2 teaching methods above, which is by no means exhaustive, describes an ever-evolving dynamic between learner and teacher. While already touched upon in Chapter 2, the methods presented below provide a summary of SLA approaches. Briefly, the Direct Method, referred to as the natural method, was a monolingual approach based on the premise that a foreign language could be taught to pupils through translating the L2 to their native language, focusing on form and meaning association (Richards and Rodgers, 1986). This

methodology was successfully commercialised as the Berlitz Method. Criticised for its oversimplified assumption regarding the similarities between first and second language learning, this was the methodology favoured for the teaching of Irish in the pre- and immediate post-independence years (Doyle, 2015). ALM, referred to as the army method, was a reading-based approach largely concerned with intensity of contact with the target language, popularised by overseas army training programs. The grammar translation method, popularised by Ollendorf, was originally referred to as the Prussian method in the US from as early as the 1840s (Richards and Rodgers, 1986) in which the objective was to learn a language to read or write, with little emphasis on speaking or listening. This method was dominant in Europe up to the 1940s. Total Physical Response (TPR) is a method which emphasises coordinating speech with physical action. The approach builds on Gouin's Series Method which placed the verb as the most important element in a methodology built on phrasal structure building, taking the focus away from the single word. TPR's use of actions to initiate verbs is best suited to young learners. Richards and Rodgers (1986) criticise the effectiveness of this method in language teaching. Community Counselling, or Community Language Learning (CLL) is a technique where the language teacher acts as a mediator seeking to lower anxiety in students by encouraging students to work together through interactive exercises (Scrivener, 2002). Suggestopedia focuses on relaxation methods to make students more amenable to L2 input. The method, developed by Georgi Lozanov, is grounded in the field of psychotherapy. Communicative Language Teaching (CLT) emerged following Chomsky's criticisms of structural linguistics, the theory underlying audiolingualism (Cook, 1985). The Council of Europe began funding research into newer, more effective communicative methods for teaching second languages, resulting in influential concepts from researchers such as Hymes' communicative competence (Richards and Rodgers, 1986). CLT focused on routine communicative functions, moving away from memory drills and encouraging the use of learner resources to interact in the L2. This approach further led to

the development of CLIL, where the L2 is the conduit through which other school subjects are learned. This differs from the immersive environment of schools where the target language is the sole mode of communication. The principal premise is constructing knowledge through interaction with the L2 environment (Coyle et al., 2009). CLIL provides an aim for language learners, i.e., production of the language, thus increasing motivation, cognitive engagement, and higher order thinking. CLIL represents an integrated approach to addressing the limited tuition hours dedicated to active Irish language exposure, particularly at primary level (Ní Bhrolcháin, 2021). As seen in Chapter 2, CLIL is regarded by the Irish government as a means to introduce partial immersion in Irish schools and Early-years settings where English is the medium of instruction. By creating ‘real contexts beyond discrete Irish language lessons’ it is suggested that CLIL will ‘improve learner competence, confidence and disposition to Irish’ (Department of Education, 2019c, p.1&2). A current government-initiated CLIL Irish Pilot Project is underway. Originally launched in 2019 but postponed due to COVID-19, the three-year project is being rolled out across a number of Early-years education settings, focusing on students in the first year of the Junior Cycle (Department of Education, 2022b). The *Gaelscoileanna* approach, whereby the immersion experience is not married with an explicit focus on language skills, represents an effective, ‘strong version of CLIL in practice’ (Dillon, 2009, p.17). Translanguaging is another term that has grown in stature in language education, emerging from Welsh bilingual education, promoting language learners to draw on linguistic resources in their native language and the target language (Cenoz and Gorter, 2022). This flexible approach of employing linguistic code-switching to achieve communicative aims offers opportunities in aiding minority language revitalisation (Moriarty, 2017). Moriarty’s ethnographic study on implementing translanguaging pedagogic resources shows not only the benefits but also the challenges. For example, the empowerment in using rapping in the Irish language with occasional code-switching to English, Polish, French and Nigerian for students and teachers is

counterbalanced with an anxiety or lack of confidence from the teacher regarding resources, and reactions from parents and students. However, the use of translanguaging as an additional, complimentary resource for traditional methods potentially provides a flexible, agentic approach to L2 learning. Other empirically investigated Irish L2 teaching methods include precision teaching (PT), a method adapted from the behaviourist approach in which focused, measurable Irish language targets are identified and explicitly delivered to students (Batardière et al., 2023). In a study conducted by Mannion and Griffin (2018), Irish reading PT, delivered over three weeks to primary school students, resulted in significant influences in aspects of reading fluency. Findings such as these, including, for example, the potential for plurilingualism – a dynamic use of language and cultural varieties in social structures – as an approach to SLA and testing, are largely absent from general discussion (Batardière et al., 2023).

3.2.1 Receptive versus productive skills

L2 skills are commonly described as falling into two main categories: receptive (listening and reading) or productive (writing and speaking), also referred to as passive/comprehensive and active skills. Actively producing a language requires the ability to generate and communicate meaning through speech and text, whereas passive, receptive skills require a decoding of written texts or spoken language, focusing ultimately on mapping form onto meaning (Field, 2011). The depth of processing for live participation in active speech requires awareness of prosodic and paralinguistic features – the rhythms, stresses, accents, tones, non-verbal cues, etc. (Tsui, 2011). For example, in a live conversation, as O'Keeffe and McCarthy (2014) state, listeners are not just passive agents; they often anticipate and complete grammatical structures, add extra clauses, or interject with short turns to indicate they are actively listening. Speaking a L2 requires planning under intense time pressures. This real-time process occurs over a number of proposed stages, according to Levelt et al. (1999): conceptualising and

planning how to express an idea; lexical selection of a word or lemma; morphological encoding of the word or lemma; phonological encoding the abstract for verbal expression; phonetic encoding the concept for easier articulation; articulating the utterance; and self-monitoring the output for immediate or future repair. If we consider that two or three words are retrieved from a lexicon of tens of thousands of items per second (Levelt et al., 1999, p.4), then we can begin to appreciate the speed of cognitive processing involved in speaking a L2.

Receptive or passive skills do not equate to passive readers or listeners. Some of the skills required for conversation participation are applicable in aural interpretation. For example, the lack of direct observation of paralinguistic features such as gestures or facial expressions, means that the listener must draw upon lexical segmentation such as prosodic cues as well as vocabulary and grammar. Furthermore, as Field (2011) states, listening to L2 speech involves a perceptual phase where the linguistic units of speech are analysed, and a conceptual phase where meaning and representations are assigned. Similar to listening, reading requires readers to retain decoded words until reaching the end of a sentence or clause where syntactic patterns can be assigned to the structure. Rastle (2016) suggests that both listeners and readers identify words through competition as a selection mechanism, whereby information flows bidirectionally across the mental lexicon networks until word recognition is achieved. Comprehending spoken or written L2 output also requires combining macro-information on the wider discourse context with micro-information such as grammar, lexis, phonology, etc. into a conceptual structure from which meaning is extracted (Field, 2011). The processes described in this section represent a complex interaction with acquired linguistic information upon which effective L2 participation relies heavily. From a hierarchical perspective, speaking a language emerges as the most cognitively pressurised process, involving semi-automated procedures such as decoding, interpreting paralinguistic and contextual macro-factors, activating and retrieving lexis from memory stores, producing

utterances, and live self-monitoring. From the Irish language learning perspective, due to the lack of opportunities to speak Irish outside the Irish-speaking *Gaeltacht* areas, Irish abilities in school leavers are more than likely passive, with active knowledge decreasing over time (Darmody and Daly, 2015, p.24).

3.3 Individual differences

Individual differences (IDs) focus on and acknowledge that L2 learners are different, and that the constraints of universal theories contradict the idiosyncrasies of these individuals. The number of identified IDs is increasing, with more recent research highlighting self-efficacy as an important variable (Piniel and Csizér, 2013). Discussions on self-efficacy will be reserved for Chapter 4, where the concept is described thoroughly. In a review of the literature, Griffiths and Soruç (2021) identify the following eleven IDs in language learners: age; gender; race/ nationality/ ethnicity/ culture; language aptitude; personality; learning style; learning strategies; autonomy; beliefs; affect; and motivation. While each variable merits its own discussion relative to the language learner, for the purposes of brevity, this section will focus on the final two variables. These two IDs are the most relevant to the Irish language learner within the context of self-efficacy in this study.

3.3.1 Affective factors in second language acquisition

According to Stern (1983), affect contributes just as much to language learning as cognition. Emotive and experiential factors influence how we interface with a L2 at the acquisition and processing stage, as well as impact upon perceptions of L2 language skills (Gardner et al., 1987). As already highlighted above, Krashen describes an affective filter through which personality factors associated with emotion impact on the SLA process. According to Schumann (1994, p.240), these affective factors are inseparable from the cognitive process of ‘sustained deep learning’ – a developmental sequence that is essential for longer-term L2 maintenance. The L2 acquisition phase, and the

choice of classroom pedagogy has the capability of affecting the SLA process to such an extent that perceptual evaluations made by learners at this early stage are more than likely to impact attitudes and motivation towards the L2 that carry on into adult life (Walsh, 2016). As the classroom is likely the sole opportunity for Irish learners to practice the language (Darmody and Daly, 2015), the status of the classroom and the Leaving Certificate itself have an emotive influence on the relationship with the language. For example, a classroom culture that fosters competition may invoke what Horwitz et al. (1986) refer to as foreign language anxiety (FLA). FLA makes an important contribution to research on IDs in that it argues that regardless of ability, some individuals are naturally anxious about learning and performing a L2 (Horwitz, 2000). Previously, Gardner (1985) had attributed this as a specific construct of anxiety entirely related to the active production of the language, or a willingness to communicate (see MacIntyre, 2020). Schumann (1994), in discussing Leventhal's concept of schematic emotional memory in which one memory system deals with events and the other with emotions, proposes an emotional memory system. This system operates as a dedicated feedback system establishing preferences and aversions that direct emotional responses to similar stimuli in the future. With Harris and Murtagh (1999) having already identified anxiety as a significant predictor in Irish language test performance in school-aged learners, the negative recursion of bad performance, low test scores, anxiety, reduced willingness to communicate, and worsening performance identified in Baker and MacIntyre (2003) may be prevalent in Irish learners. Although this recursive consequence has not been empirically tested in the Irish language, glimpses have been evidenced in qualitative research conducted by Barry (2020), for example, where participants described feelings of shame and regret associated with test performance in school carried through to adulthood.

3.3.2 Motivation

Motivation has proven to be one of the most influential IDs that influences SLA (Griffiths and Soruç, 2021); it represents an aspect of goal expectation. Gardner (1982) states that motivation comprises three variables: effort; desire; and affect. Effort refers to the drive of the learner to study, use the language, etc. Desire represents the hunger to achieve proficiency. Affect is the emotional reaction produced by language learning, often at a physiological level. Gardner and Lambert (1972) divide motivation into two strands: integrative and instrumental. Integrative motivation is concerned with personal growth, attitudes towards the target language community and cultural enrichment. Integrative orientated learners would normally exhibit characteristics such as adapting native-like speech accents or informal lexical patterns. Instrumental motivation, on the other hand, is more closely associated with the functionality of language learning, with the end result being social, academic or economic reward (Carrió-Pastor and Mestre, 2014). Reducing motivation to two strands has been questioned, with research suggesting learners display multiple orientations beyond the two described, including prestige, friendship, travel, etc. (Ellis, 2004). Further consideration of this is beyond the scope of this study.

The motivation to speak or interact in the L2 increases the cognitive stimulus that causes variability in successful language acquisition (Schumann, 1994). With advances in modern language pedagogy emphasising the benefits of communication for learners, a willingness to communicate has emerged as an ID dependent upon personality and previous communicative experiences (MacIntyre et al., 2003). Communication apprehension derived from anxiety or fear of failure prohibits the motivation to verbally activate the language in individuals (Richmond et al., 1987). Dörnyei and Ushioda (2021) place motivation in a socio-cultural context, highlighting perceived lack of opportunities to use the L2, the perceived utility of the language, and perceptions of the L2 speech community, as motivational sub-variables. These sub variables have previously been identified in Irish language research

where Darmody and Daly (2015) found that positive perceptions towards the Irish language more likely results in respondents speaking it with more frequency. Devitt et al. (2018) identify a general disengagement from Irish in the primary school classroom, more pronounced in children with no exposure to spoken Irish outside school. The dangers of a perceived lack of social and economic utility with learning Irish is discussed in McCubbin (2010). In this study, the author questions the issues around minority language ownership, as facilitated by state policies; a process which ‘naturalises an ethnically essentialist understanding of language ownership’ (McCubbin, 2010, p.462). This nullifying effect on motivation is further highlighted in Barry (2020), where adult Irish language learners express being denied access to Irish speech communities. This phenomenon of the Irish language ownership and its legitimisation through native speakers has already been discussed in Chapter 3.

3.4 Memory

Language learning is a communicative and cognitive activity in which memory acts as a mediating tool (Swain and Lapkin, 1998). There is an indisputable link between language acquisition and executive functions – the top-down cognitive processes which manage skills such as behavioural inhibition, working memory and attention control (Diamond, 2013, Gooch et al., 2016). During SLA, successful acquisition hinges on whether learners can develop and solidify the L2 linguistic system in parallel with their own cognitive system (Hedgcock, 1991). Cognitive processes assign meaning through language patterns and chunks – often unconscious linguistic triggers employed by learners for expediency (O’Keeffe, 2006) – as opposed to a lexicon of individual words. Bates and MacWhinney (1987) introduced a connectionist network where form and function are inseparable, relying on establishing cues and saliency from L2 input. These interlinked L2 patterns, in concert with cognitive processing, form a complex structured mental schema of the linguistic system

(Neisser, 1984). Cognitive processing of the schema operates within a series of memory stores: sensory memory; working or short-term memory; and long-term memory (Randall, 2007). Stimuli from the environment flows through the sensory memory, where essential information is extracted. This then migrates to the working memory where the extracted information is further processed. Working memory consists of two peripherally based storage systems comprising a phonological loop and visuospatial sketchpad and a central administrator which allocates attentional resources (Köpke, 2007). The visuospatial sketchpad is where visual and spatial information is temporarily held, whereas the phonological loop temporarily retains verbal information. Limited capacity is a core determiner at this part of the process. Randall (2007) states, based on empirical evidence, that only as much information that can be recited in between 1.5 and 2 seconds can be retained and processed in the working memory. Simulation studies cited in Hurford and Kirby (1999) state that exposure to the L2 can actually expand working memory.

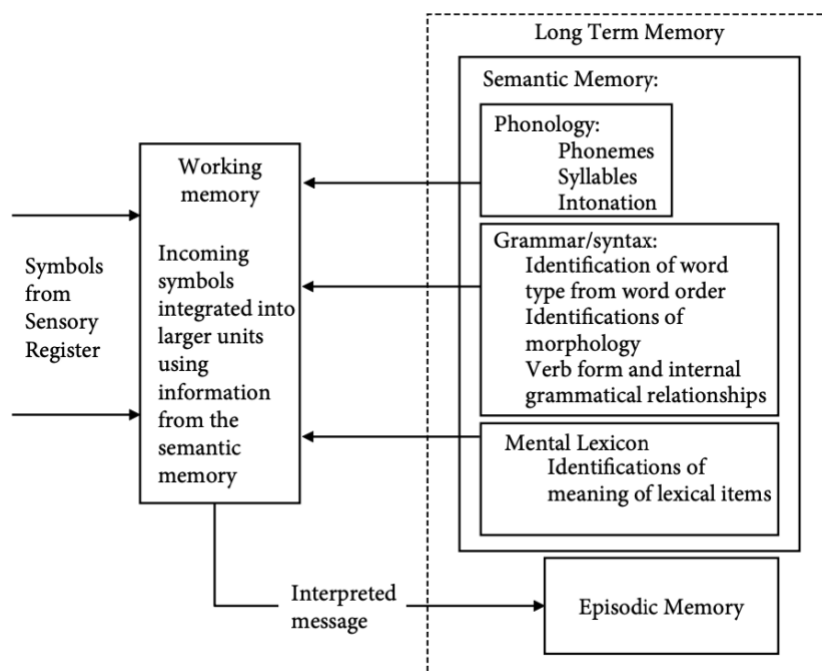


Figure 3.1 L2 cognitive processing via memory stores. Taken from (Randall, 2007, p.89)

Any “surviving” information moves from working memory to long-term memory. Figure 3.1 above represents the processing of L2 stimuli with a focus on the final long-term memory store. According to Gass (2003), only deeper semantic representations of the linguistic stimuli can efficiently pass through to long-term memory for future access. Furthermore, trace amounts of this knowledge remain in the short-term memory. The long-term memory is where the experiential and abstract representations are retained, and as can be seen in the figure above, comprises semantic and episodic memory. Semantic memory represents a systematic set of general knowledge about the world shared by a cultural group including, for example, what things are called and how they are represented spatially or pictorially (Snodgrass, 1993). Episodic memory is knowledge derived from life events and experience, and is critical for the retrieval of spatial and temporal contextual information (Zhang et al., 2021). The memory stores discussed here represent the automated cognitive process that occurs during the SLA process, acting in part as a filter for the L2 stimuli encountered, especially during school. As will be discussed further below, this memory storage process represents only part of the overall picture of the Irish language learner. Accessing these stores of memory complicates the SLA process, leading to, in a worst-case scenario, perceptions of irretrievability that create wider consequences at both the micro and macro level.

3.5 Self-assessment of language abilities

Self-assessment of language skills has been regarded as a means to promote a student-centred, motivation-based approach to SLA in which the evaluative opinion of the teacher is reinforced with a self-identification of individual learning needs (Blanche and Merino, 1989). Boud (2013) argues that the self-assessment function has always been embedded in the SLA process, with students regularly testing themselves against vocabulary lists, for example. The rationale for employing self-assessment as a measure of second language abilities

was argued in Upshur (1971), in which the author correctly suggested that a proficiency test can only sample a portion of L2 abilities, whereas the individual themselves has access to the full spectrum of their experiential failures or successes in the language (Heilenman, 1990). A further rationale is based on pragmatism, particularly where longitudinal studies are difficult to operationalise or impractical (Bardovi-Harlig and Stringer, 2010). A key, general assumption is that individuals are apt at interpreting these experiences. To this end, L2 self-report methodologies have been criticised, chiefly for the impact of biases such as over- or under-estimation of abilities (Blue, 1988). Research shows that people tend to hold largely positive beliefs in their abilities to a ‘logically impossible degree’, according to Ehrlinger et al. (2008, p.98). Overestimation of abilities in poor performers is a widespread phenomenon that, according to Ehrlinger et al. (2008), is due largely to their incompetence which deprives them of the required skills to acknowledge deficits. In assessments such as grammar and logical reasoning, Kruger and Dunning (1999) found that the bottom 25% of performers believed their performance above the 60th percentile. A general, more structural issue is identified in Harris (1997), where the progress of learning in an educational setting, measured through memorised and reproduced digested knowledge, often conflicts with the idiosyncratic communicative goals of L2 performance. Setting aside the wider issues associated with a culture of using a single exam such as the Leaving Certificate as a measure of abilities, the issue of inaccuracy in L2 self-assessment is that it prevents individuals from attending to deficiencies in aspects of their abilities at the expense of others, affecting engagement in experiences or learning appropriate to their level. Ultimately, L2 inaccuracies in self-assessment are attributable to an entrenchment of self-opinions in abilities developed through the social context in which language is situated. For example, Trofimovich et al. (2016) found that high performing L2 speakers often underestimate their abilities as they preoccupy themselves with minor, inconsequential linguistic errors. This underestimation, as Dunning et al. (2003) outline, is usually small

but statistically significant. The existing limited research on Irish language testing which includes some form of self-assessment provides contradicting results in this regard. For example, self-assessed competencies have shown that higher-level performers, including those on immersion programmes, tend to rate their abilities in line with actual competency (Kavanagh, 1999, Murtagh, 2007).

Dunning et al. (2003) identify how preconceived notions of a specific skill not only result in self-assessment errors but lead to behavioural consequences from the top-down nature of self-assessment followed by performance. If we briefly consider the construct of the ideal (usually native) Irish speaker, and the status projected (usually by L2 learners of Irish) on such a construct (see O'Rourke, 2011, O'Rourke and Walsh, 2015), then this ideal Irish L2 speaker becomes the comparative measure of skill against which Irish learners judge themselves. If we continue with the theoretical strand offered in Dunning et al. (2003), then the self-assessment of speaking skills in the Census can be further scrutinised for validity. For example, capable Irish speakers may be conservatively underestimating their own Irish speaking abilities. Furthermore, the finding that 24% of self-declared Irish speakers in the Census 'never' speak the language (CSO, 2017b) begs even further questions on the validity of this data. If we consider the finding that L2 production, i.e. speaking and writing skills, are most subjective to language attrition (Cohen, 1989), then the accuracy of self-assessment for these inactive speakers must be questioned. This may further bolster the idea that the concept of "speaking" Irish is embedded in some through perception rather than through practice.

Seminal research in Howard and Dailey (1979) noted the effect of inconsequential assessments on self-assessment. In experimental studies, pre- and post-treatment self-assessment changes, referred to as a response-shift bias, were investigated. Participants that did not receive a treatment produced very little changes in self-assessment over two time periods, whereas the group that received the treatment

displayed a marked difference in assessments. A similar occurrence may be evident in declaring Irish speaking abilities in the absence of any follow-up test. As Graham (2004) suggests, language learners tend to base self-assessment ratings on how well they believed they could be, rather than on their actual level. It is likely that this is the case for former language learners. In a correlation meta-analysis of self-assessment studies, Ross (1998) found higher, positive correlations between self-assessment and receptive skills (listening and reading) compared with productive skills (speaking and writing). This is particularly relevant to the Irish Census question, which is based entirely on speaking skills. Potential misaligned self-assessment in this context has implications beyond the individual and towards the societal level if one considers the resources and policies targeted at Irish revival and maintenance.

3.6 Language attrition

Having briefly presented some of the key components of SLA at the beginning of this chapter, one of the possible outcomes for learners once they have exited the education system is language attrition or language loss. Perhaps one of the most comprehensive definitions for the phenomenon of language attrition specific to this research is put forward by Schmid:

‘Language attrition is a developmental experience unfolding across the lifespan, and as such it is shaped by literally everything else that the language user experiences across decades – changes in their language environment, in their occupation, in their family situation or in their circle of friends, the decision to take up another language, and so on.’

(Schmid, 2022, p.5)

The dynamic conditions of language attrition traverse a language learner/user’s life, often grounded in the experiential and by extension, perceptual. Language attrition is defined more generally as an individual’s language loss and is often exhibited as a decrease in lexical

diversity and overall fluency, particularly over periods of non- to low-use (Bardovi-Harlig and Stringer, 2010). Weltens (1987) describes attrition as a deficiency in one or several linguistic sub-skills including phonology, morphosyntax, etc., and attributes attrition as a failure to achieve automaticity in these skills due to an inadequate depth of processing of L2 knowledge. Ecke and Hall (2013) expand on this in describing attrition as a consequence of the diminished use of one language in contrast to the increased use and development of another language – a definition quite similar to language shift. This leads to a simplification of the language systems, and most relevant to this research, the ‘impairment of access to them’ (p.735). This argument of access impairment represents a reframing of language attrition and will be discussed further, below.

According to Van Els et al. (1983, referenced in Weltens, 1987, p.24), language attrition can be divided into four distinct categories:

- 1) Attrition of a native language (L1) in a L1 environment: often manifested in sufferers of aphasia;
- 2) attrition of a L1 in an L2 environment: most likely to occur in people that have migrated from their country of birth to another country;
- 3) attrition of a L2 in a L1 environment: this occurs most frequently when a school learned L2 is no longer used outside the school environment, and is the focus of this overview;
- 4) attrition of a L2 in a L2 environment: may occur in aging migrants, where there is evidence of a regression to the L1 with reduced cognition.

Losing complete contact with the L2 is an extremely rare occurrence, as is most likely to be the case with the Irish language for non-native speakers, which remains prevalent thanks in part to policies, although in a generally passive form, i.e., bilingual official notices, brief radio bulletins on English language stations, Irish language audio and visual media, etc. Horwitz (1990) describes language learning as being

strongly associated with risk-taking and potential embarrassment, thus having a direct effect on self-efficacy beliefs through perception of previous experiences. How an individual reacts to, for example, an unsuccessful public performance in the Irish language may lead to a withdrawal from potential post-learning communicative opportunities (Barry, 2020). Furthermore, a conscious withdrawal from the Irish L2 acquisition environment due to general non-maintenance leads individuals to equate these periods of non-use to assumed perceptions of L2 loss or attrition (see Murtagh, 2007). Two of the most researched attrition hypotheses contextually salient to this study – the regression hypothesis and the dormant language hypothesis, provide further context, and are discussed below.

3.6.1 The regression hypothesis

A number of hypotheses have positioned language loss as part or consequence of the SLA process. The regression hypothesis (Jakobson, 1941), which states that linguistic features are attrited in the reverse order in which acquired (“first in, last out”), has been one of the most empirically tested and contested hypotheses in L2 attrition studies. For example, seminal, longitudinal work carried out by Weltens (1989) supports this reverse chronology of loss. However, Andersen (1982) suggests that what is learned “best” is forgotten last, referred to as the critical threshold hypothesis. This view appears more robust if we consider that vocabulary and grammar become entrenched through regular usage (Schmid, 2002). The regression hypothesis was successfully challenged by Hedgcock (1991) where, based on syllabus input for first year Spanish students, an oral elicitation task demonstrated very weak correlations with accuracy and the order in which items were presented. At the core of Andersen’s “best learned, last out” hypothesis is the suggestion that higher proficiency learners of the L2 may be more immune to attrition. Murtagh and van der Slik (2004) have demonstrated that students, regardless of proficiency level, did not show any notable evidence of Irish language attrition after 18

months upon completion of school. A further alternative to the regression hypothesis that builds on the critical threshold hypothesis is put forward by Hansen (1999) – “the more you know, the less you lose” This alternate view is more aligned to classic memory research as evidenced by a number of studies adapting Ebbinghaus’ forgetting curve (1885) which claims that attrition levels are relative to the amount of knowledge obtained (see Smythe et al., 1973; Clark and Jordan, 1984). Overall, this layered concept in which attrition takes a top-down approach, working its way from the recently acquired linguistic layers downwards towards the earliest acquired items seems an over-simplistic view where the idiosyncrasies of language learning are discounted. In a review of language attrition research, Ecke (2004) also echoed some of the criticisms of the regression hypothesis in claiming that it is too unrefined as a predictor of attrition patterns, and that empirical research seems to continuously reflect findings in Jordens et al. (1989) where there is some evidence of attrition, manifest as over-usage of phrases and cases, but it does not represent a reverse chronology of SLA.

3.6.2 Dormant language hypothesis

According to Bahrck (1984), the principal elements of an acquired second language are retained in a residual “permastore” that is accessible even after 50 years of non-use. Certain vocabulary or grammatical features of a second language appear to be “forgotten”, when it is more likely due to retrieval issues rather than extensive language loss (Yukawa, 1999). This is referred to as the dormant language hypothesis and is evidenced in studies of residual L2 knowledge using the “savings effect” – a premise that older L2 knowledge is more effectively recalled once relearned briefly than newly introduced L2 knowledge. The unused or non-referenced cognitive schema of the second language determines what Paradis (1993) refers to as the activation threshold hypothesis. This hypothesis further suggests that accessibility is more affected than the representation of language itself, and that maintenance is the only

solution. This hypothesis of a dormant language that lies below a particular activation threshold has been tested using Nelson's (1978) concept of savings, whereby previous learners of a language exhibit a learning advantage over new learners. In de Bot et al. (2004), participants – all previous learners of French – were presented with a list of 20 previously learned (“old”) words and 20 less-likely encountered (“new”) words to memorise. Following phased testing over periods of up to three weeks, participants displayed an average improvement of 40% in recalling the previously encountered words. The study was subsequently replicated in the Irish language context by Barry (2022, see Appendix 2), where, over two months of testing, findings were almost identical, with quite large effect sizes ($d=1.37$) highlighting the difference in new versus old recall, as well as an unexpected use of cognates as a translation strategy. These studies support the savings paradigm that subthreshold linguistic memory – in this case vocabulary lists – are never completely subject to attrition but remain at the residual level.

It is important to further consider the large-scale study in Spanish language attrition by Bahrck (1984), which comprised almost 800 participants. The attrition rates of Spanish in current, but mainly former learners of the language revealed a number of findings that have dominated L2 attrition research. Firstly, there is a marked decline in knowledge between three and six years after instruction when the language is not accessed; a plateau of forgetting. Following this period, remaining linguistic knowledge endures for at least 25 years, and up to 50 years. Secondly, the level and quality of acquisition acted as a strong predictor of attrition. For example, the higher proficiency former students achieved a greater portion of content for the permastore compared with lower proficiency former learners who became almost indistinguishable from a control group who had never learned Spanish previously. Thirdly, and most importantly, attrition affects active recall much more so than passive recognition of vocabulary. Schmid (2022), while acknowledging the importance of this finding highlights a

related, often overlooked finding, that grammar recall ‘declines most precipitously andshow[s] no clear evidence of stabilising during the retention interval’ (Bahrick, 1984, p.111). She goes on to cite contrary findings in Bardovi-Harlig and Stringer (2010) and Larson-Hall (2019) suggesting that the difference in results is due to changes in pedagogic styles related to SLA and teaching theories. This is likely the case with Irish language teaching, as will be discussed further. The contrast with Bahrick’s sample population is that the grammar-translation method was largely the dominant mode of classroom delivery from the 1930s to the 1980s, whereas the latter-day studies are derived from a more communicative-focused environment which emphasises interpersonal functions of spoken, everyday grammar. In contrast, Mickan et al. (2019) dismiss that it should be taken as fact that vocabulary is the most vulnerable to attrition. Contradictory findings suggest that pronunciation rules or grammar are equally prone to attrition (e.g. Yoshitomi, 1999).

3.6.3 Retrieval failures of residual knowledge

Pan and Gleason (1986, p.198) state that once L2 knowledge is acquired it creates a ‘critical mass’, somewhat immune to complete loss. As already outlined, psychological memory research argues that once L2 information has been processed from working memory it is stored in more permanent long-term memory. Early studies on the presence of residual L2 knowledge suffered from a methodology based on testing surface L2 skills rather than the linguistic sub-system (Bardovi-Harlig and Stringer, 2010). More recent cognitive psychology studies on reactivating non-used linguistic systems have empirically proven that residual knowledge of lexical items encountered in childhood remain for periods up to 30 years (see Barry, 2022, de Bot and Stoessel, 2000). The identification of residual knowledge has implications for L2 reactivation interventions (Grendel, 1993), and can facilitate a subsequent relearning process (Herdina and Jessner, 2002, Slavkov, 2015). Gardner et al. (1987, p.31) refer to the period of L2 non-use as an ‘incubation period’ or the ‘latent period

when obvious attention wasn't being directed toward the task at hand' (Gardner et al., 1985, p.520). This incubation period has been suggested as an important cognitive phase in which problem areas encountered during intense SLA are often unconsciously resolved (Cohen, 1975). Hedgcock (1991) posits that this unconscious categorisation of L2 components, leads to a deeper entrenchment of the language. This residual learning represents the continuation of the learning process at the sub-conscious level and explains the improved L2 test scores following periods of non-use in attrition studies (see Smyth et al., 1973; Weltens, 1989). With regard to the Irish context, Murtagh and van der Slik (2004) have confirmed this hypothesis by proving that students previously engaged in Irish language immersion programmes demonstrated higher results following 18 months of non-use. What this line of reasoning suggests is that the Irish language remains at the residual level, and that former learners may perceive inactivity as language loss.

3.6.4 Attrition and self-efficacy

A full account of self-efficacy will be presented in Chapter 4. However, the overlap with language attrition merits a brief discussion here. According to Bandura (1995, p.359), 'self-percepts foster actions that generate information as well as serve as a filtering mechanism for self-referent information in the self-maintaining process'. Pajares (1996) further highlights the potent influence of this filter, and its effect on how new phenomena and experiences are interpreted, as well as the resulting mediated behaviours. In a correlational analysis between self-efficacy and performance, Pintrich and De Groot (1990) identified test anxiety as a negatively influencing variable on students' abilities to retrieve information from memory. Situations that create a cognitive load on individuals such as regular L2 exams can potentially lead to language learners strengthening the negative physiological indices that contribute to not only their self-efficacy, but also their perceptions of L2 attrition. As discussed, language attrition is an individual psycholinguistic phenomenon caused by a reduction in linguistic skills,

attributable to a ‘long-term lack of simulation’ (Paradis, 2007, p.125). This is certainly the case with the Irish language, of which the vast majority of speakers are non-native, second language users whose primary learning objective is to pass a compulsory state exam (McCloskey, 2001). With lack of language practice, often arrives a perception of holistic language loss. However, as will be discussed further in Chapter 4, an omnibus measure of Irish language competency should be interpreted with caution as a true representation of individual linguistic efficacy. With declarations of ability confined to a single question, there is no authentic means to assess the various self-efficacy constructs associated with Irish language knowledge, resulting in potential over-estimations of language attrition. The limitations of this approach to assessing L2 skills is demonstrated in a study of English second language learners conducted by Cotterall (1999), in which 88% of participants expressed a confidence in general second language learning beliefs. However, when asked about self-efficacy on writing accuracy, this confidence index dropped to 42%.

When individuals assess the difficulty of tasks, and whether they have the capacity to take on a task, they often revert to normative information regarding the performance success rates of others on a similar task (Bandura, 1997). With census data returning low figures for Irish language ability on a continuous basis, and regular debates on whether teaching resources would be better served if Irish was no longer a compulsory subject (National Council for Curriculum and Assessment, 2019), there is a potential (and perhaps perceptual) environmental factor affecting previous learners of the language with low-efficacy beliefs. As will be discussed further in Chapter 4, Bandura (2001, 2012) describes a model of triadic reciprocal causation where personal, behavioural, and environmental factors interact to determine an individual’s behaviour. Therefore, it is likely that census returns are not reflective of Irish language self-efficacy, but by a normative assumption that the language has attrited. This phenomenon of miscalibrated self-assessments is likely to extend to and negatively affect

self-efficacy beliefs. According to Bandura (2012, p.10), ‘individuals are unlikely to take seriously their self-appraisals in performance situations in which misjudgement of capability is inconsequential.’ The effect of this proposal in the context of an untested national measure of language competency is unknown.

A language learner’s self-efficacy is a key factor of human agency that acts as mediator of competencies and their subsequent performances (Van Dinther et al., 2011). Considering this substantial role in determining linguistic behaviours, specifically in minority language contexts, it is essential to understand how Irish language self-efficacy is developed and supported. As Schmid (2022, p.2) states, ‘we currently have no understanding of how – or even if – FL [(foreign language)] skills can attrite’ or the pedagogic approaches and learner characteristics and/or personality that lead to attrition. The implicit interpretation here brings the role of the perceptual filter back into focus. As will be seen in Chapter 4, if Irish language self-efficacy beliefs are as dynamic as the literature suggests then it is crucial that the potential to positively alter these beliefs is investigated.

3.7 Conclusion

This chapter has introduced the central stakeholder in this research – the language learner, and has sought to set out the cognitive and social situatedness of L2 learning and Irish L2 learning. The purpose of this has been to introduce some of the theoretical concepts that overlap with the central tenet of this research – self-efficacy. The chapter has shown how the seeds of perceptions of Irish language abilities, particularly in the case of former language learners, are sown at the acquisition stage, often manifesting in miscalibrations of self-assessed abilities. Once we gain an understanding of how a language is acquired, how periods of low or non-usage, or how learners’ individual differences – be it cognitive, attitudinal, perceptual, etc., all converge into self-percepts, then we can consider the post-learning perceptual phenomena of attrition and self-efficacy.

The chapter began by distinguishing language learning from other school subjects, focusing on the social dynamic between input and output. It is evident that theories and approaches to SLA have evolved, thanks largely to advances in psychological and psycholinguistic research, allowing for the focus to move from the reductive behaviourist theories to the more individual-focused cognitive theories. This has allowed for the advancement of pedagogic methods, evolving from oversimplistic approaches such as the grammar translation methods to more modern communicative, student-centred approaches such as CLIL. The application of these methods in the Irish classroom was discussed in Chapter 2. Principle L2 skills were then divided into two categories: active and passive. The subconscious cognitive processes that underpin these skills was briefly discussed in an effort to demonstrate the cognitive complexity of receiving and producing a L2. The overview of two specific individual differences – affect and motivation – provided context on the individual profiles of Irish L2 learners. The role of the various types of memory prevalent in SLA research was outlined. The importance of the long-term memory, and the process that precipitates L2 activation was highlighted. This autonomous process is grounded in the storage and retrieval of semantic and episodic L2 memories. Success, again, relies on the multi-layered experiential plain of L2 acquisition. As an example, the deployment of resources such as individual learning strategies is wholly dependent on the individual, their metacognitive awareness, the classroom or social environment, peer interaction, and so on, leading to L2 output. The composition of variables and factors is immense, even before we consider the post-performance filter of self-assessment.

The use of self-assessment in L2 learning has been shown to be relatively fallible when measured against performance. This section demonstrated the inverse phenomenon where poor performers tend to overestimate abilities while higher-level performers are more conservative in their self-perceptions. This self-appraisal process becomes all the more consequential for the language learner if

inaccuracies prevent them from attending to deficiencies. A key component in this process is feedback, which will be discussed in Chapter 4 in the context of self-efficacy. Furthermore, we will see how self-efficacy promotes declarations of future tasks as opposed to retrospection.

The chapter concluded with an overview of language attrition research, focusing on a learned L2. Two main hypotheses were presented to provide some contextual background to various aspects encountered in this area, including the concepts of a permastore or critical mass of L2 knowledge that is somewhat immune to loss. This was further explored in residual L2 knowledge research, specifically in the Irish language context where a relearning advantage was identified in previous learners of Irish. Reintroduced Irish nouns were shown to be more effectively retrievable up to two months later – a significant outcome which demonstrates the strength of long-term memory. What emerged from this section is that language attrition is being more likened to a memory retrieval process issue rather than a phenomenon of complete L2 loss. The chapter concluded in positioning perceived Irish language attrition as a potential residual factor of self-efficacy belief construction, where normative assumptions, periods of non-use and experiential factors all coalesce into a perceptual filter through which Irish language abilities are appraised. The next chapter will introduce the theoretical core of this research: self-efficacy.

4. Self-efficacy

4.1 Introduction

This chapter aims to set out the principal theoretical foundation of this research: self-efficacy, the central pillar of social cognitive theory (SCT) (Bandura, 1977a). Adapting this theoretical approach allows us to marry two of the main concepts discussed in Chapter 3, the social and cognitive aspects of language acquisition and language usage, and to establish how behavioural outcomes in L2 performance are derived. SCT emphasises learning in a social context in which the individual seeks agency, a percept derived from self-efficacy. The chapter will begin by defining SCT and self-efficacy, moving from a general to academic to language learning perspective. Self-efficacy in language learning will be discussed from both a learner and teacher standpoint. The allocation of resources such as time and effort, and their relationship with self-efficacy will be outlined. This is followed by a discussion on the four sources of information that individuals draw upon when developing their self-efficacy beliefs. How individuals attribute success and failure following a performance will be briefly considered, followed by an overview of methodological concerns and issues, as outlined in empirical research. Finally, a core methodological aspect of this research will be discussed: the manipulation of self-efficacy. As will be evident, the paucity of any L2 self-efficacy experimental manipulation research has imposed some methodological constraints, chief among them a directly comparable study in which perceptions of language performance ability is deliberately affected by a targeted intervention. That being said, self-efficacy manipulation studies in other domains will be presented as a primer for the next chapter, which lays out the methodology for this study.

4.2 Social Cognitive Theory

Bandura's social cognitive theory (SCT) states that individuals have the autonomy to regulate their own behaviours when operating within

a broad network of socio-structural influences, represented as rules, social practices and sanctions (Bandura, 2001). In other words, people are pro-active, self-regulating agents of experience, manipulating motivation, behaviours and intentional actions in their individual interpretations of these social structures. The nature of our experiences, and their subsequent influence on cognitive processes, are a function of the social and physical environments that we willingly choose to construct (Bandura, 2001). Feedback information from behavioural responses and their associated consequences lead to the creation of cognitive representations that affect future behaviour toward similar stimuli. Bandura (1977b, p.9) underlines the importance and implications of this process in stating that the ‘experiences generated by behaviour also partly determine what a person becomes and can do’. To put this another way, people are less likely to engage in tasks they feel that are beyond their competence (Zeldin and Pajares, 2000). Bandura (1997) highlights the conduit of this process – self-reflection – as the most influential mediator of human agency. This cognitive representation of future consequences becomes an influential source of motivation through which individuals potentially develop self-prescribed standards to which resources such as persistence and coping mechanisms can be allocated accordingly (Bandura, 1977a). Bandura (2012) not only declares SCT as having the power to predict behaviour, but also as a theory of learning and change in which individuals acquire knowledge structures in domains including the social, cognitive and emotional, resulting directly from partaking in operational processes.

4.3 Self-efficacy

Self-efficacy, the central tenet of SCT, represents the system of beliefs that individuals possess which mediates personal agency through behavioural change when faced with a specific task (Mills et al., 2007, Weinberg et al., 1981). Task specificity, rather than a general, omnibus measures of beliefs, represents the foundation upon which self-efficacy should be operationalised (Linnenbrink and Pintrich, 2003). These

beliefs create a filter of skill perception through which individuals think pessimistically or optimistically about a task, which can have enhancing or debilitating consequences (Bandura, 2001). In other words, this contextually dependent filter represents perceived ability to perform a target behaviour, guiding choices individuals make, and the effort and persistence allocated in achieving this target behaviour (Graham, 2007). As self-efficacy focuses on how individuals declare future-orientated situational judgments of ability, it has been shown to be a better predictor of achievement than actual ability (Bjorklund et al., 2020, Bong, 2006, Hendricks, 2014). This is because these cognitive representations of potential future outcomes influence an individual's motivation as well as other factors including coping mechanisms (Bandura, 1977a, Pinel and Csizér, 2013). Efficacy beliefs can have a profound effect on emotional reactions and thought patterns, where, for example, a low level of self-efficacy can 'foster stress, depression, and a narrow vision of how best to solve a problem' (Pajares, 1996, p.544-545).

The differences between an individual's perceptions of self-efficacy and their actual competency are the result of a complex process of self-persuasion that relies on the cognitive processing of four sources of influence (discussed in detail, further below): enactive mastery experience – encompassing perceptions of previous performances; vicarious experiences – experiences with social modelling and social comparison; verbal persuasion – reinforcing or de-valuative feedback; and physiological and affective states – the emotional reaction triggered when faced with a task (Bandura, 1986, Bandura, 1995, Schunk, 1984). This self-persuasion process forms an essential component in motivation across academic domains with high efficacy individuals believing themselves to be 'capable of orchestrating events that lead to favourable outcomes [that] sets in motion a series of cognitive, emotional, and behavioural responses that result in healthier emotional states and higher achievement' (Pajares and Valiante, 2001, p.367). Studies have shown that a strong sense of self-efficacy

generally leads to better academic performance (Jackson, 2002) as well as a more flexible use of learning strategies (Zimmerman et al., 1992). SCT is best represented as a framework of triadic reciprocal causation (see figure 4.1, below) comprising personal and behavioural factors, and the external environment, where self-efficacy is represented as a personal factor of causation (Chan and Lam, 2010). These personal factors include cognition, biological events, and affect, which directly impact on the behavioural determinants. Environmental factors refer to the context in which the behaviour is actioned. This notion of context is important from a language learning perspective. For example, environmental factors can include educational settings and associated stakeholders such as teachers, peers, families and communities (Schunk and DiBenedetto, 2016). This point only further emphasises the situatedness of agency, behaviour, and language learning and practice within a social framework. Bandura (2001) argues that a high level of individual self-efficacy has benefits within the wider social system, often promoting a cooperativeness, collaboration and sharing in a vested interest. For example, in an Irish language ethnographic study, Ní Dhúda (2017) found that by promoting the ‘autonomous action of agency’ (2017, p.239), users of Irish were found to have created practice interventions which produced a cumulative effect on promoting Irish language use in the area.

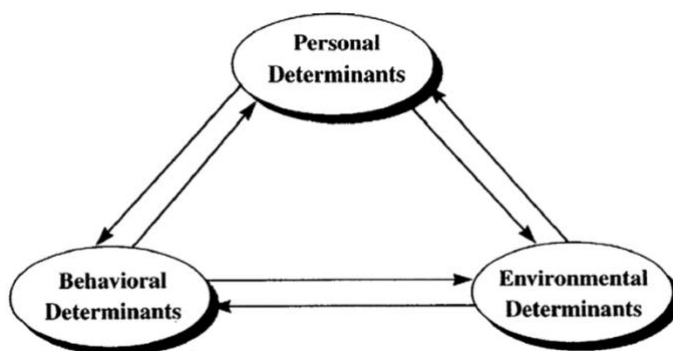


Figure 2.1 Schema of Triadic Reciprocal Determination in the Causal Model of Social Cognitive Theory (Bandura, 2011)

Piniel and Csizér (2013) suggest that one of the reasons that research into L2 motivation and anxiety produces mixed results is that self-efficacy is often misinterpreted as other “self”-related concepts. Whereas self-efficacy is based on judging competencies in predicting future capabilities on specific tasks, self-assessment – the default methodology for the Irish Census of Population - represents retrospective judgements that occur after the completion of a task such as the Leaving Certificate (Mills et al., 2007). Similarly, self-confidence is a global, social construct (Dörnyei, 2005) overlapping with aspects of self-concept – a composite, general view of the self that is derived from direct experiences and third-party evaluations (Bandura, 1997). Self-efficacy, on the other hand, is a cognitively defined, task-oriented construct, and is internally referenced (Hsieh and Kang, 2010, Marsh et al., 1991). Finally, where self-efficacy is concerned with perceptions of personal competencies, another construct – self-esteem – is based on emotional judgements of self-worth, with no fixed relationship between abilities and self-worth (Bandura, 1997). In other words, individuals may possess extremely low self-efficacy beliefs without having any effect on their self-esteem as they choose not to invest self-worth in the task at hand.

4.3.1 Gender and race

Aside from being recognised as an ID variable in SLA, gender and race have been identified in a limited number of studies as potential determining factor in self-efficacy beliefs. Usher and Pajares (2006) found that girls in a school environment rely four times more on information from relationships than from previous achievements. In male dominated fields, such as science and technology, females relied on social persuasion and vicarious experience more so than their male counterparts, whose primary source was enactive mastery experiences (Lent et al., 1996, Zeldin and Pajares, 2000). However, female students demonstrate higher self-efficacy in language arts disciplines (Pajares and Valiante, 2006). Both Mills et al. (2007) and Wright (1999) found

that motivational variables such as self-efficacy of academic self-regulation varied as a function of gender, with female students expressing a higher interest in value, interest and enjoyment of learning French than their male counterparts. In a further study conducted among a large group of science students (N=262), Britner and Pajares (2001) found that race emerged as a dependent variable of social persuasion. African American students with a history of low academic performance and social and economic disadvantage, tended to attach more weight to social persuasion than interpretations of mastery experiences. The significance of gender and race become more evident if we consider how self-efficacy beliefs determine the choices people make, their degree of effort, coping strategies, perseverance, and the positive or negative physiological associations they experience when approaching a specific task (Usher and Pajares, 2008b). In other words, individuals with high self-efficacy beliefs are more likely to actively seek to overcome obstacles in achieving tasks than those with low perceptions of self-efficacy. People with low self-efficacy beliefs are less likely to have the coping mechanisms to overcome obstacles and aversive consequences (Hutchinson et al., 2008). Ultimately, self-efficacy beliefs determine whether individuals adopt self-enhancing or self-debilitating behaviours.

4.3.2 Goals and motivation

Self-efficacy is a goal-referenced measure of outcome expectations (Linnenbrink and Pintrich, 2003). We saw in Chapter 3 how motivation also emerges as one of the most influential ID variables. The motivation to set goals is not only derived from the individual Irish language learner but establishes itself as a permeating factor in determining Irish self-efficacy beliefs. Goal orientations are an important cognitive process which affect motivation (Schunk, 1991). More specifically, Stock and Cervone (1990, p.485) state that ‘the motivational effects of goal-setting derive not from the goals themselves, but from a cognitive comparison process in which

individuals evaluate relations between their current efforts and their performance goals.’ This comparison process requires two actions: an appraisal of the performance, and a mediating process of self-assessing abilities for future performances in the same domain. Individuals are unlikely to pursue goals that they perceive as neither unobtainable nor highly valued. Schunk (1991) discusses the properties that determine goal orientation, and by extension the motivation to achieve these outcomes: proximity, specificity, and difficulty. Proximal goals, as opposed to distal goals, are short-term in nature, thus providing individuals with opportunities to monitor progress and recalibrate performance more effectively than distal, often more abstract goals. In a study assessing the effects of both proximal and distal goal-setting, proximal sub-goals were found to enhance self-efficacy and persistence compared with the distal goal-setting group of students (Stock and Cervone, 1990). Specific goals, again provide agency by reducing general goals to achievable constituent parts. For example, compare “do your best” versus “try to complete at least three of the four reading comprehensions”. Reduced ambiguity in goals often lead to more successful performance outcomes, in turn leading to an increase in self-efficacy (Williams and Rhodes, 2016).

Once motivation is at a level to engage in a behaviour, self-efficacy determines the initiation of the behaviour and the effort to be expended and sustained in the face of any challenges (Hutchinson et al., 2008). If an outcome is perceived as favourable, individuals are likely to initiate successful behaviour changes to achieve these perceived outcomes (Williams and French, 2011). As individuals seek out situations in which they feel competent, thus being allowed to exhibit agency, self-efficacy beliefs influence the environment that individuals choose to engage with or avoid (Jackson, 2002). To put it simply, failures lower self-efficacy and success raises self-efficacy. Two cognitive representations are required to motivate behaviour. Firstly, an individual will imagine what type of behaviour is required to achieve a successful outcome, and secondly, the individual will assess their own

efficacy at being able to activate the required behaviour. A further cognitively based source of motivation relates to goal-setting and self-evaluation (Bandura, 1997); specifically the perceived discrepancies between performance and self-prescribed standards. This gap-noticing function will be discussed further below in the section on the self-efficacy-performance relationship.

4.3.3 Education

The implication from an educational perspective is that beliefs of inefficacy can lead to individuals developing a ‘negative framework for interpreting new information such that inefficacy appraisals are perpetuated, often leading to debilitating behaviour’ (Lindsley et al., 1995, p.646). Students with low self-efficacy are less likely to deploy learning strategies or coping mechanisms and will naturally disengage from challenging circumstances in the school environment. In some instances, these individuals develop a sense of learned helplessness – a related individual perception concept – where behaviour is viewed as uncontrollable and unrelated to outcomes (Linnenbrink and Pintrich, 2003). Contrary to this are students with high levels of self-efficacy that exhibit sustained persistence, lower levels of anxiety, more flexibility in learning strategies and more accurately self-assess; ultimately attaining higher levels of intellectual achievement (Mills et al., 2007). Through raising student self-efficacy, and by extension strategising, students can be consciously taught how to combine newly learned knowledge to pre-acquired concepts, thus improving long-term memory (Chularut and DeBacker, 2004). This is especially relevant to the Irish language context, where, in the absence of explicitly taught metacognitive or self-regulation strategies, rote learning for examination purposes remains a prominent strategy for learners (see Council of Europe, 2008, McCloskey, 2001). It has long been established that students who adapt surface learning strategies such as rote learning through verbal repetition fail to achieve a level of conceptual learning when compared with students employing

metacognitive methods such as paraphrasing or summarising (Weinstein and Mayer, 1986).

It is important to note that self-efficacy itself is not the only influence on learners' behaviour. As Schunk (1989) explains, high self-efficacy does not automatically equate to competent performance if individuals do not have the requisite skills. Similarly, a declared level of self-efficacy does not always guarantee a linear relationship with behaviour when factors such as self-assurance or self-confidence are not considered (Bandura, 2006). However, if an individual has adequate skills, positive outcome expectations, and values these outcomes, then self-efficacy is more likely to play a prominent role in behavioural choice (Schunk, 1989). A wider implication for academic self-efficacy is how highly efficacious students tend to consider wider career choices and can use self-regulation to prepare for these occupations (Betz and Hackett, 1997, Lent et al., 1994). In summary, career pursuits and opportunities can be determined by the complex belief systems developed during an individual's early academic experiences.

4.3.4 Teacher self-efficacy

A wider implication for the academic environment is the self-efficacy beliefs of teachers, which impacts teaching behaviours, persistence, choice of activities, strategies, feedback, etc. Teacher self-efficacy is the belief that teaching methods are effective in producing positive student outcomes (Perera et al., 2019). Teachers with low efficacy beliefs tend to avoid activities that exceed their perceived capabilities, thus directly affecting student experiences and student self-efficacy beliefs (Schunk, 1989). Swanson (2012) discusses how low self-efficacy in language teachers may lead to less effort in motivating students to learn and value the L2. Higher teacher self-efficacy has been found to contribute to a more positive teaching environment, with less use of criticism, more frequent progress checking, and overall increased student performance (Ashton and Webb, 1986). In a latent class analysis study by Yoon and Kim (2022), used to identify hidden

groups for developing teacher profiles (N=2,411), it was found that in US based teachers, teaching self-efficacy strongly correlated with job satisfaction and active continuous professional development. Again, this demonstrates the impact of the environmental and social determinants of SCT, and how a causal link can be determined from the macro to micro level – environmental conditions of employment and reinforcement all filtering down to contribute towards the learning environment and individual student level.

It is important to note the role teachers play in both establishing evaluative standards and perceived judgement of student abilities, thus playing a pivotal role in determining student mastery experiences (Chan and Lam, 2010). Urhahne et al. (2011) found that teachers' judgements of students' performance on a standardised maths test resulted in not only a large overestimation for some students, but with a smaller distinct group also being incorrectly underestimated. Teachers were found to have little knowledge of important academic traits such as self-concept (which sometimes overlaps with self-efficacy based on research designs (see Bong and Clark, 1999)), expectancy of success or aspiration in their students. Whereas both underestimated and overestimated groups achieved an almost identical mean performance on the test, it was the underestimated students that expressed the lower levels of expectancy of success as well as higher levels of anxiety. This finding suggests that academic self-beliefs in students can be mediated to some extent by teachers' judgement of abilities and subsequent expectations.

The classroom culture, often evolving from the teacher's management and communication skills, plays a pivotal role in determining how cognitive perceptions are appraised. For example, a social-comparative structure versus a self-comparative structure establishes reference points through which self-efficacy is assessed (Bandura, 1997). In a feedback manipulation study, Chan and Lam (2010) examined the effectiveness of four types of feedback in raising self-efficacy in

Chinese English language students. Formative feedback facilitates learning goal orientations, leading students to increase efforts or change strategies in outcome pursuits. Summative feedback focuses on the outcome only without providing agency to students on how goals can be achieved. This is a common source for Irish language students, with previous learners claiming, ‘your summer exams – your result – that was your feedback’ (Barry, 2020, p.185). Self-referenced feedback encourages controllability by urging students to continuously adopt and reflect on learning goals. Norm- or social comparative-referenced feedback places the focus back on peers, and encourages students to outperform others, often leading to a lowering of self-efficacy and increased anxiety. Results show that student self-efficacy can be positively altered, resulting in improved performance, when formative or self-referenced feedback is used. On the other hand, summative or norm-referenced feedback removes agency and control. In summary, the social context in which teacher and student agency is propagated creates a complicated dynamic. As will be discussed further below, teachers mostly represent the expert model that students draw upon to gain performance experience and feedback. Classroom environments in which peer comparison is advocated over self-reflection is likely to affect the learner experience. Finally, factors such as student achievement (Muijs and Reynolds, 2002) have a direct influence on how a teacher develops their self-efficacy beliefs, impacting on how they present themselves in the classroom, thus perpetuating these recursive outcomes anew.

4.3.5 Language learning

Self-efficacy is an essential component to language learning success, as it has the potential to provide individuals with the intellectual tools, self-beliefs, and self-regulatory capacity required for autonomously interfacing with a language (Bandura, 1993). Studies have shown how language self-efficacy negatively correlates with apprehension and performance-avoidance (Pajares and Valiante, 2001). In a meta-analysis of self-efficacy and language proficiency effect sizes, Wang

and Sun (2020) identified a number of mediating factors including educational setting and cultural contexts, leading the authors to distinguish between Western, Middle Eastern, and East Asian language learners. Findings show that the relationship between self-efficacy and English language proficiency is stronger in the Middle East and East Asia than in Western countries, with the authors suggesting stronger feedback interventions being essential for developing accurate self-efficacy beliefs. Graham (2007) suggests that the number of UK L2 learners that drop the language as soon as they no longer have to learn it, could be potentially reduced through the promotion of positive self-efficacy beliefs. Once self-efficacy in a domain has been established, it can take more than an occasional success or failure to alter that belief (Schunk, 1989). For example, a robust self-belief system that has served a protective function over a number of years, such as the perception that a L2 is inaccessible to a low-efficacy learner (Graham, 2006), will require 'powerful confirmatory experiences' to produce enduring changes in self-efficacy (Bandura, 1997, p.87). Furthermore, the relationship between self-beliefs and action may be distorted by extraneous factors, often derived from incorrect self-appraisals (Bandura, 2012).

Self-efficacy is positively related to performance, and the allocation of resources such as time and effort in pursuing performance related outcomes. Mills et al. (2007) employed hierarchical multiple regression analysis to determine that self-efficacy for self-regulation emerged as the best performance predictor in over 300 intermediate French language students. The study further shows that, through teacher-led interventions, self-efficacy can be raised when students perceive themselves capable of employing metacognitive strategies in the monitoring of academic work, leading to improved performance. However, Stone (1994) found that manipulating and provoking mild negative expectations can lead to improved performances in decision making tasks, even going as far as to offset influencing variables on over-estimation such as over-confidence. Self-efficacy is a key

mediator of motivation and performance, and in instances of planning for allocating resources such as time for studying for an exam, is likely to play an influential role in this planning process (Vancouver and Kendall, 2006). The problem with inaccurate self-efficacy constructions from a language learning perspective is that individuals over-estimating the capacity to achieve a task will become demoralised with repeated failures, while those that underestimate abilities potentially avoid achievement opportunities (Schunk, 1981). As a word of caution, Stone (1994) states that self-efficacy is prone to the same idiosyncratic constraints that affect other self-assessment decisions, namely interpretation of scales, memory, cognitive processing and varying attention spans. In summary, self-efficacy judgements are ‘made in uncertainty’ and are the ‘product of heuristic-based processes’ (Stone, 1994, p.453). This will be discussed further in the section on methodological issues, below.

Self-efficacy acts as a contributory motivational component to the ID variables that determine success in language learning (Schunk, 1981, Dörnyei, 2005). Previous research by Tremblay and Gardner (1995) demonstrated statistical significance in a structural equation model involving students in a francophone school, with self-efficacy emerging as a mediator of attitude and motivation, ultimately having an inverse relationship with anxiety. Piniel and Csizér (2013) applied a similar modelling process to Hungarian school students studying English and found that Dörnyei’s (2009) tripartite model of motivation-cognition-effect emerged as a model of interrelated constructs. The model demonstrates that the learning experience of students directly affects self-efficacy construction, which then leads to a direct effect on anxiety, finally influencing the motivational behaviours related to language performance. A recent longitudinal study on curricular changes at Irish primary level has revealed that the move from a content- to student-centred curriculum has increased student confidence and responsibility through the promotion of agency in the classroom (McGarr et al., 2022). With Moreno and Kilpatrick (2018)

demonstrating how L2 usage improves efficacy beliefs, the impact of efficacy-lowering variables such as anxiety only lead to a withdrawal from the communicative process. Lindsley et al. (1995) refer to this as a downward efficacy-performance spiral, where negative associations with performance create low efficacy beliefs, leading to disengagement which only further decreases beliefs. Previous studies have shown how language students often make maladaptive attributions for performing less well in foreign languages, blaming factors beyond their control, such as perceived task difficulty or a general sense of low language abilities (Graham, 2006). These findings extend to the L2 teacher-level also, with Cooke and Faez (2018) showing how French language immersion teachers have higher self-efficacy than their non-immersive counterparts.

Graham (2007, p.81) categorises agency through self-efficacy as a metacognitive belief – itself described as ‘an important characteristic of the ‘good language learner’’. In the same study, the author found that a group of students that received a high degree of awareness-raising interventions showed the highest gains in performance and self-efficacy on a French listening exam over a period of six months. By demonstrating strategy use, constructive feedback and getting participants to retain diaries, the study, though small in scale, provides evidence that metacognition strategies are beneficial to L2 students. Graham framed the study in the context of high drop-out rates in modern foreign language courses in the UK. In a study on L2 learners’ belief structures, Mori (1999), discussing Schommer, 1990, describes how these systems consist of multiple independent dimensions including, among others, controllability of the learning environment and quickness of knowledge acquisition.

MacIntyre and colleagues have conducted a number of studies on language learner confidence to show how the construct of perceived competence often overrides an individual’s actual abilities (see Baker and MacIntyre, 2003, MacIntyre et al., 1997) which is a similar

construct to self-efficacy (Mills et al., 2006). To combat this phenomenon, Saito (2020, p.162) recommends that interventions are implemented at the L2 acquisition stage to ‘enhance the possible cyclical relation of learners’ sense of efficacy and positive learning behaviour’, thereby leading to higher degrees of L2 proficiency. Chularut and DeBacker (2004) employed concept-mapping for teaching ESL students learning strategies, finding statistically significant gains in both self-efficacy and test performance compared with a control group. Students were guided towards constructing maps for reading passages of varying difficulty, suggesting that the benefits of such strategies lead to students developing complex cognitive structures in the specific domain. The authors found that higher and lower proficiency students equally benefited from the process.

4.3.6 The self-efficacy-performance relationship

Bandura and Locke further state that efficacy beliefs are ‘autocorrelated and affect both prior and later performance’ (2003, p.91). Debates have emerged on the direction and causality of the self-efficacy-performance relationship, and whether self-efficacy is a driver of future performance or a result of previous, past performances (Vancouver et al., 2001). Control theory (Powers, 1991) represents an alternative view of self-regulation and behaviour in individuals. Whereas self-efficacy frames both outcome and efficacy expectations as the principal determinants of human behaviour in the pursuit of outcomes, control theory considers self-awareness and its implications as the more salient factor in how outcome expectancies direct behaviour (Jacobs et al., 1984). A heightened self-awareness allows an individual to compare present performance with behavioural standards, i.e., through a negative feedback loop. Vancouver and Purl (2017) state that Bandura’s triadic reciprocal causation model is essentially the same as this loop. Control theory suggests that self-efficacy allows individuals to construct perceptions of their current states, which are then used to compare with their desired states (Powers, 1991). Reacting

to, and reducing this gap is the key function in perceptual control theory. According to Vancouver et al. (2002), the suggestion that the self-efficacy-performance relationship is reciprocal (Bandura, 1997) only prevents the establishment of causality. Powers (1991) declared that belief in an individual's capabilities are debilitating in the context of closing the negative feedback loop. For example, Stone (1994) found that overconfidence biases at the initial stage of judging self-efficacy may lead to reductions in goal discrepancy perceptions, thereby inducing complacency when it comes to performance. These perceptions only serve to influence the discrepancies between the referenced goal and the perceived performance (Bandura, 2012).

Vancouver et al. (2002) and Vancouver et al. (2001) claimed that the relationship between self-efficacy and performance could in fact be negative, where manipulated results lead to overconfidence and a subsequent withdrawal of resources. Bandura and Locke (2003, p.87) critique the control theory approach taken here as an overly systematic, reductionist approach to understanding behaviour which is 'rooted solely in a negative feedback control system aimed at error correction.' They further explain that discrepancy reduction is not the primary motivation for action, arguing that if this was the case then individuals would just seek out goals that had already achieved to ensure that no discrepancy exists at all. This contrasts with SCT's proactive, agentic perspective of human behaviour where individuals seek to attain goals and valued outcomes rather than eliminate discrepancies. Bandura (2012) further suggests that error through negative feedback loops do not take into account that self-motivation is not solely about reactively reducing discrepancies but also proactively producing discrepancies. Stajkovic and Bandura (2010), in a reanalysis of the data in a study by Vancouver and Kendall (2006) which claimed that self-efficacy negatively related to subsequent performance, found 'no statistical basis for the claim that self-efficacy impairs performance' (Bandura, 2012, p.28). Vancouver et al. (2001) argue that as performance begins to match goals or expectations, resources such as persistence and time

are allocated less so when compared to when individuals believed goals were not being met. This contrasts with the belief in the positive correlation that if you believe you can complete a task then you will work harder to accomplish this goal. Furthermore, Vancouver et al. (2001) suggest that despite this rejection of control theory and its paradigms, Bandura (1997, p.131) does indeed acknowledge the role of control theory, albeit reluctantly, going so far as to state that discrepancy reduction is only half of the self-regulation story, and ‘not necessarily the more interesting half’.

4.3.7 Cognition and self-efficacy

Self-efficacy is not only influenced by individual cognition but can also influence cognitive development, especially at early developmental stages. For example, how a child construes ability affects cognitive functioning (Bandura, 1993). If a child regards ability as an acquirable skill that can be improved through further engagement with the subject, they develop a functional-learning outlook, seeking further cognitive challenges, developing metacognitive skills through learning from mistakes. A child that regards ability as an inherent trait sees challenges and errors as high evaluative threats, preferring to minimise errors. This self-diagnostic view assumes a self-protective approach to task engagement, thus greatly reducing potential cognitive and meta-cognitive development. In a language-learning context, students sometimes perceive ability as an unobtainable attribution in an uncontrollable environment (Graham, 2002). Even the peer group an individual interacts within will influence self-efficacy beliefs. Values, standards of conduct and lifestyles that govern the peer group are sanctioned by its members directly and indirectly (Bandura, 1993).

Usher and Pajares (2008a) found that as a child progresses through school, the educational aids used at the beginning stages are naturally withdrawn resulting in an increase in demand for self-regulatory skills. Self-efficacy is likely to reduce in students ill-equipped for these more autonomously guided challenges. A learning environment that

promotes ability as an acquired concept and deemphasises competitive social comparisons produces the ideal conditions for academic development (Bandura, 1993). Schunk (1987) developed a self-efficacy model of the cognitive domain which acknowledges the reciprocal relationship between self-efficacy, task engagement variables and achievement behaviours. At the beginning of a task, individuals' self-efficacy operates as a function of previous experiences and traits such as attitudes and abilities. The task itself then provides cues including performance and progress, psychological change, social comparisons, attributions, etc. – all of which mediate self-efficacy, influencing motivation, performance, and ultimately cognitive development (Schunk, 1989). According to Bandura (1993), human behaviour is regulated by embodying cognised goals and perceiving whether capabilities can achieve these goals. The use of forethought in this process requires the effective cognitive appraisal of information often replete with ambiguities. Interpreting these ambiguities is an important developmental process in SLA. Critical teaching interventions can provide a facilitative function in maximising awareness, reflection, and regulation in the classroom, ultimately leading to more effective L2 learners (Chan, 1996).

4.4 Resource allocation

Self-efficacy can be categorised as a form of expectancy in which individuals believe they can organise and allocate resources to achieve certain levels of performance (Bandura, 1977a, Vancouver et al., 2008). However, Bandura (1977a) differentiates between outcome and self-efficacy expectations by stating that individuals may understand that an action will produce a certain outcome yet may doubt their ability to perform the actual action. Bandura positions efficacy expectations at the pre-behaviour stage, with outcome expectancy between post-behaviour and outcome stages (see figure 4.2 below).



Figure 4.2 Bandura's distinction between outcome and efficacy expectations (Bandura, 1977a)

Allocating resources such as persistence and effort to operationalise the behaviour required for task achievement is a key characteristic of high self-efficacy language learners. Once negative associations with the L2 are formed, individuals can perceive that they do not have the resources to reach a specific target (Piniel and Csizér, 2013). Depending on the learning/task context, higher self-efficacy does not always equal greater persistence. For example, students will persist on a learning task, in the beginning stages at least, regardless of self-efficacy beliefs because the task is overseen by a teacher (Schunk, 1989). Cervone and Peake (1986) conducted studies on how anchoring biases affect perceptions of self-efficacy, as well as task persistence. Applying Tversky and Kahneman's (1974) research into making judgements using heuristics in the absence of certainty, participants were provided with an either low (4 out of 20), high (18 out of 20), or no anchor value out of 20, and asked if they could achieve higher than, lower than, or equal that result when asked to complete 20 anagrams. 11 of the anagrams were unsolvable. The results showed that when provided with an arbitrary anchor point, participants' self-efficacy and persistence seemed to gravitate towards these values. Subjects provided with the 18 out of 20 anchor attempted almost double the number of trials that the low anchor group, as well as declaring their self-efficacy on the task to be almost 50% higher than the low anchor condition. This study shows how manipulated judgement biases have a causal influence on the allocation of resources such as persistence. The provision of anchors upon which to judge abilities will form an important aspect in the methodology in this study and will be outlined further in Chapter 5.

While the accepted view taken is that self-efficacy beliefs are positively related to the allocation of resources (Bandura, 1997), more recent studies have begun to investigate the negative relationship between beliefs and performance, and how this, rather than being debilitating, leads to an adaptive resource allocation process when time scarcity is a factor (Beck and Schmidt, 2015). The authors propose that in time scarce conditions, individuals' behaviour may be affected more so by the allocation of resource needs than perceptions of self-efficacy, i.e., the less time available leads individuals to make strategic allocations of finite resources such as time. Similarly, Vancouver et al. (2001) found that highly efficacious participants tended to commit without reflection on problem-solving tasks, thus negatively affecting performance. A further explanation for a potential negative relationship is that high levels of confidence on the task may lead to risk-taking, thus hindering performance and resource allocation (Campbell et. al, cited in Woodman et al., 2010). Vancouver et al. (2002) found that by inducing high self-efficacy through false feedback on a computerised game led to participants reaching their confidence goal too soon. This inflated sense of competence resulted in decreasing performance when compared to when their self-efficacy was at lower levels on the task.

In Vancouver and Kendall (2006), the authors found that self-efficacy influences performance expectations and the discrepancies against which resources are deployed. In other words, individuals with high self-efficacy beliefs, are less likely to dedicate resources such as study time before an exam that they perceive as being simple. This can lead to a miscalculation of perceived task requirements which, coupled with a withdrawal of resources, can lead to negative performance outcomes. Similarly, Stone (1994) found a negative self-efficacy-performance relationship for cognitively complex tasks that lacked immediate feedback, with manipulated, overconfident participants reducing task effort and performance. Bandura and Locke (2003), despite misgivings around the negative self-efficacy/performance relationship go so far as to suggest that by reducing self-efficacy slightly, the resulting self-

doubt *can* actually lead to an increase in the allocation of resources such as effort, thereby contributing positively to overall performance.

4.5 Sources of self-efficacy

Bandura (1997) strongly predicts an overall positive relationship between self-efficacy and performance in consideration of the four sources that facilitate how self-efficacy beliefs are formed by individuals: enactive mastery experience; vicarious experience; social persuasion; and physiological states (Bandura, 1986). These interpreted sources rarely operate in isolation to each other. For example, a language learner may receive social persuasion via feedback following a positive enactive mastery experience such as an informal exchange in class, while simultaneously receiving information inferred from their physiological or emotional state. The interaction and weight of importance of these sources in differing contexts form the individual's domain-specific self-efficacy profile.

4.5.1 Enactive mastery experience

Mastery experiences (sometimes referred to as performance accomplishments (see Moreno and Kilpatrick, 2018)) are the beliefs based on previous, personal performance accomplishments, and are regarded as the strongest source. Bandura defines previous performance as 'a conglomerate index encompassing the set of unmeasured socio-cognitive factors operating at the time' (2003, p.91). Experiences have the power to leave lasting effects by how they are coded, retained and recalled in the memory representation (Bandura, 1977a). As discussed in Chapter 3, L2 long-term memory comprises experiential representations. Once a task performance has been perceived as being successful or unsuccessful, this interpretation of accomplishment becomes a crucial determiner of future efficacy judgements. According to Hackett and Betz (1995, p.246), 'individuals are more likely to recall their own successes and failures than to remember comments of others or observational experiences'. Therefore, these experiences provide the most authentic evidence for

individuals, with successes raising efficacy beliefs, while failures lowering them (Bandura, 1997). Language tasks that provide graded representations of performance for students, as well as feedback, are the most effective at affecting behavioural change (Hutchinson et al., 2008, Turk, 2004). Tschannen-Moran et al. (1998) describe beliefs as being cyclical in nature in that performance proficiency creates a new mastery experience, and the information of this experience guides future decisions. In other words, the most recent experiences in a domain are more than likely easier to recall, and if these experiences are not reflective of actual capabilities, the information retrieved is biased towards the success or failings of those (and future) outcomes.

However, simply performing well in a task does not lead to an automatic raising of self-efficacy. Other affective factors such as cognitive processing of performances, preconceptions of capabilities, effort required, and perceived task difficulty all play a mediating role in interpreting performances. For example, a positive experience that is inconsistent with a pre-existing, negatively biased self-schema is likely to be minimised in memory reconstructions (Bandura, 1997). Multiple enactive mastery experiences over time which lead to varying levels of performance leave room for interpretation. Holec (1996) describes mis-calibrated experiential beliefs as being dysfunctional for the language learner, leading to misrepresentations of the learning experience. Individuals with a high-efficacious self-schema are likely to reference the positives from these multiple performances. However, in a minority language context such as Irish, with extended periods of non-use, these previous experiences become tethered to the outcome of the terminal exam, the Leaving Certificate.

4.5.2 Vicarious experience

Vicarious experience is a social comparative process derived from two sources of information: social comparison with peers, and modelling. When individuals have little knowledge or experience needed for judging their capacity to complete a task, observing the success or

failings of others of similar capabilities becomes a highly influential source of self-efficacy, on occasion impacting more directly than a comparative enactive mastery experience (Bandura, 1977b, Zeldin and Pajares, 2000). This skill of learning through observation ‘enables people to acquire large integrated patterns of behaviour without having to form them gradually by tedious trial and error’ (Bandura, 1977b, p.12). An individual’s adequacy is generally judged in relation to a normative comparison with the performance of others (Bandura, 1997). Similar to social comparison theory, if there is an absence of objective standards, individuals will employ perceptions of their peers’ performance to establish their own levels (Sitzmann et al., 2010). If individuals perceive a negative social comparison, then this will undermine self-efficacy and subsequent performance. Similarly, a positive comparison enhances performance and self-efficacy beliefs (Bandura and Jourden, 1991).

Social comparison allows for the individual to develop a diagnostic with which to judge their capabilities in the task domain. When, for example, in a classroom environment, the individual observes a classmate of perceived similar ability fail at a task, then the comparative diagnostics for success and failure can be altered. In this example, the inefficacious student observer may accept their own perceived deficiencies, and thus alter their own future behaviours to similar tasks by choosing to disengage with the activity regardless of actual competencies. On the other hand, while Bandura (1995, p.4) advises that individuals should ‘measure their success in terms of self-improvement rather than triumphs over others’, Graham (2006) found that, in her study on metacognition in French language learners, students had developed the habit of comparing themselves favourably with their classmates. For the language learner, this becomes problematic when learners, believing themselves to be superior at intermediate level, are suddenly moved to an advanced class with a new cohort of learners, and find they are no longer at their previous superior level. This may be the case for Irish secondary students who progress

from third to fifth year by not taking the optional transition year. These students often find themselves joining classmates who have completed transition year having experienced an extra year of Irish language tuition, often with an added cultural element.

When direct knowledge of capabilities is absent, individuals rely more heavily on modelled indicators. For example, a knowledgeable model allows novices to observe appropriate behaviours such as coping strategies or resilience. According to Bandura (1977b, p.35), ‘by observing a model of desired behaviour, an individual forms an idea of how response components must be combined and sequenced to produce new behaviour.’ Individuals often seek mastery models with desirable competencies and behaviours to aspire to; those that can potentially instil positive self-efficacy raising beliefs (Schunk and DiBenedetto, 2016). The influential power of modelled behaviour was highlighted in early self-efficacy research into resource allocation (Brown and Inouye, 1978). Modelled failures in an anagram task led participants who were manipulated into believing themselves similar in abilities with the model, reduced task persistence over time. Bandura (1997) identifies four categories of modelled behaviours: actual; symbolic; self-; and cognitive self-modelling. Actual models are those within the individual’s immediate ‘association networks’ (p.92), whose motivations, competencies and attitudes are repeatedly observed, i.e., coping models, mastery models, etc. Yashima (2009) discusses the benefits of how near-peer modelling, in which L2 learners function as models for one another, can actively contribute to raising self-efficacy. Symbolic models are those outside the association network, such as those in the media whose influence is enhanced by cognitive rehearsal. For example, language learners watching TV shows that exhibit authentic, target-language dialogues; in turn, observing real applications of terms encountered in the classroom. Self-modelling occurs when individuals observe their own recorded performances. In some of the earliest studies on the use of video, Dowrick and Biggs (1983) demonstrated how edited performances with mistakes and

hesitancies removed leads to a subsequent increase in performance by the observer. Cognitive self-modelling occurs when individuals visualise themselves progressing and mastering increasingly challenging tasks. Observing multiple models achieving a task has a stronger influence than single models. However, not all models are equally influential in eliciting the types of behaviours or performance they themselves exemplify (Bandura, 1977b). In a classroom environment, simultaneous exposure to peer models and cognitive coping models such as a teacher are unlikely to be equally influential to low achievers who view teachers as vastly superior in ability (Schunk, 1985). Therefore, for low-achieving students, exposure to peers may enhance self-efficacy more so than observing expert, often faultless models such as a teacher (Schunk, 1989).

4.5.3 Social persuasion

Social or verbal persuasion is a common, indirect source of self-efficacy, usually exhibited as feedback and encouragement from peers or models (Bandura, 1997). In the classroom, teachers and classmates form the immediate, direct sources of social persuasion (Chan and Lam, 2010). The influence of social persuasion relies on the interaction of the other sources. For example, feedback that has not been operationalised through subsequent performances is unlikely to play a significant role in self-efficacy assessments. Likewise, feedback that confirms strengths and performance have greater influence on raising self-efficacy. The source of feedback is significant, in that acceptance of expert model status, or ‘impression managers’, is generally a prerequisite for depth of influence (Usher and Pajares, 2006, p.137-138).

In a qualitative study conducted by Usher (2009), the power of social persuasion on students is evidenced. Students discuss the empowerment of being solicited for advice by their peers, as well as the debilitating effect of non-existent feedback, resulting in a withdrawal from the learning process. Feedback which links strategy

use and outcomes can provide an important framework for how successes or failures are attributed (Brophy, 1998). Similarly, continuous progression feedback linked to immediate goals has the potential to raise self-efficacy (Schunk and Rice, 1991). Social persuasion has a more enduring influence when feedback is aligned with existing capabilities, and when individuals are provided with the tools to correct performances (Bandura, 1977a, Lindsley et al., 1995). In other words, persuading an individual with low performance abilities that they will do well is unlikely to have a meaningful effect on performance, often resulting in a lowering of self-efficacy beliefs. Hutchinson et al. (2008) found that if feedback is discontinued, the previous raising of self-efficacy through positive reinforcement begins to decline.

According to Zeldin and Pajares (2000), social persuasion is balanced more towards having the power to undermine efficacy beliefs than strengthen them. This is particularly significant in academic settings where teachers and peers are the immediate sources of social persuasion, with teachers establishing evaluative standards that have the power to determine a student's mastery experience (Chan and Lam, 2010). In a small-scale study of Chinese English language learners, Wang and Pape (2007) found that negative social persuasion from teachers directly led to a lowering of self-efficacy beliefs in students. Positive feedback linked to intelligence as opposed to effort can also create a negative outcome and reorientation of attribution, with students forfeiting learning opportunities by focusing more on tasks that lead to further praise, while actively avoiding situations that may lead to errors (Mueller and Dweck, 1998).

Dunning (2005) suggests that positive feedback is a rarity, and that negative feedback is often couched to protect the receiver's feelings or ego, thus preventing the development of metacognitive skills such as self-monitoring or self-correcting. Furthermore, students may master only some aspects of a skill depending on the task. For example, rote

learning passages of text for a written language exam. Students could conceivably score highly in such an exam without ever developing the skills to express themselves freely in the written form. If students lack the metacognition to identify or address potential skills gaps, they may develop mis-judged self-efficacy beliefs (Schunk, 1989). Powers (1991) suggests that in the absence of performance feedback, self-efficacy can act as a debilitating mediator on subsequent performance if individuals develop an inflated perception of performance, leading to a withdrawal of resources.

4.5.4 Physiological and affective states

According to Schachter and Singer (1962), cognitive interpretations of a current situation or task, when compared with previous similar experiences, provide an emotional framework that allows individuals to categorise their physiological arousals. Situations that elicit emotional arousal provide informative value to individuals assessing competencies. It is the interpretation of this somatic information, and not the physiological state itself that individuals infer as evidence of debilitating-arousing influences (Bandura, 1997). Interpretations are often weighted towards the outcomes of previous mastery experiences, with high-efficacy learners likely to find moderate affective arousal beneficial, while low-efficacy learners find the same prompts debilitating in nature. Empirical evidence suggests that affective, emotional states not only influence self-efficacy, but that self-efficacy impacts emotional states (Wright & Mischel, and Harter, referenced in Linnenbrink and Pintrich, 2003). Vancouver et al. (2008) suggest that arousal states may not be a representation of motivational behaviour towards the task at hand, but rather act as a pre-conditioned response to the anticipated performance.

A negative cognitive appraisal of an emotional state often leads to avoidance behaviour, with individuals believing that achievement is beyond their direct control (Turk, 2004). For example, a teacher may associate the pleasure derived from teaching an effective lesson as an

efficacy-raising event, whereas increased heartbeat and sweating may lead to a lowering of teaching self-efficacy (Tschannen-Moran et al., 1998). Usher and Pajares (2006) conducted a study of 263 students, aged between 10 and 13 years, to determine the influencing variables on their academic self-efficacy levels. Employing multiple regressions, the authors found that low performing students reported fewer mastery experiences, vicarious experiences, and social persuasion as influences on self-regulatory efficacy, instead acknowledging physiological arousal as the principal variable. For foreign language students, test anxiety is a common indicator of physiological and affective state (Cohen et al., 2008). Horwitz identifies foreign language classroom anxiety as a 'transient anxiety state' (2001, p.112), as opposed to an individual's personality trait. In developing the Foreign Language Classroom Anxiety Scale (FLCAS), Horwitz et al. (1986) found that students in L2 environments exhibited physiological symptoms associated with anxiety, and that this imposed a debilitating effect on language learners. However, the FLCAS focuses on the debilitating effect of anxiety on L2 learners, failing to take into account the positive, facilitative effects that anxiety can produce (Piniel and Csizér, 2013). In an experimental study with over 100 students, Nelson and Knight (2010) demonstrated that by developing interventions that focused on positive past achievements, students bypassed the effects of test anxiety, as self-efficacy and coping strategies increased.

4.6 Attribution theory

An important aspect of self-efficacy and general motivation theory is the concept of how individuals attribute successes or failures in a domain. Judgements of past performances create implications for similar future task engagements and motivation (Lane et al., 2004). According to Heider (1958), each behavioural action produces a result dependent upon two conditions: the internal and external environment. What distinguishes these conditions is the factor of controllability (Weiner, 1985). L2 learners that believe successes or failures are outcomes within their control are more motivated to seek similar

challenges in the future; they feel in control of internal factors such as effort or strategy use (Graham, 2007). Ability attributions are regarded as stable and uncontrollable, with an internal locus of control. Attributions of effort, on the other hand, are changeable, controllable and have an internal locus of control (Chan, 1996). Individuals that attribute successes or failures to the internal locus, are more likely to regard outcomes as being within their control, thus allocating resources or employing strategies more effectively in the pursuit of overcoming challenges. Once an individual believes that they can achieve success in a given task, and that the outcome is within their control, then they are more likely to apply themselves to the task at hand (Chan, 1996).

Language learners, being active agents within SCT, attach meanings to their respective learning situations (Hsieh and Kang, 2010). These meanings often manifest themselves as justifications or confirmations following a performance, or feedback derived from the performance. Where an individual feels that results from a performance are outside of their control or agency, they are likely to expend minimal effort on future performances in a similar domain (Turk, 2004). Weiner (1985) summarises a number of attributional studies where emotional states such as shame and embarrassment are shown to link with attributions of failures due to low abilities, while guilt and remorse relate more so to failures attributed to lack of effort.

4.7 Methodological issues

As discussed in Chapter 2 and Chapter 3, achieving accuracy in measures of the “self”, such as self-assessment is a complex task. However, moving beyond the abstract and towards the instrument itself, a number of issues continue to emerge despite growing empirical evidence. The outline provided in this section will provide context for the self-efficacy scale development in this investigation, discussed further in Chapter 5. Bandura (1997) outlines the conditions required in self-efficacy research for maximising effect sizes. These include knowledge of the task, a minimal time between providing ratings of

self-efficacy and the task, and the correlation between the scale and the task itself. A violation of the above will fail to provide an accurate measure of self-efficacy relative to the task. An important aspect of self-efficacy determination is the notion of aligning perceptions with task-specificity. Task-specificity in L2 research has been shown to contribute to higher correlations between self-assessment and performance (LeBlanc and Painchaud, 1985, Peirce et al., 1993).

Bandura (2012) cautions against the misperception that self-efficacy beliefs are a static, generalised trait. People can differ in beliefs across, as well as within, domains of functioning. However, this important consideration has not prevented various studies from advocating for the transposition of self-efficacy from a state to a trait (Shelton, 1990), or attempting to develop general trait-based self-efficacy instruments (Chen et al., 2001, Sherer et al., 1982). Furthermore, a self-efficacy study into student attrition rates on maths courses exhibits a worrying line of reasoning for diverting from the empirical norms established by Bandura, with Carmichael and Taylor (2005, p.715) stating that ‘using an item that is too specific... defeats the purpose of research, making the results too contextually based to be useful’. Bandura (1997) highlights this tendency in psychological research of developing instruments that rely on universal, omnibus measures, resulting in decontextualized scale items, as a flawed approach to self-efficacy research. Items that are designed to assess general self-efficacy, as opposed to being task-specific, instead result in measures of self-concept in a domain (Pajares and Miller, 1994). Bandura (2012) is highly critical of manipulation studies conducted by Vancouver et al. (2002) in which self-efficacy judgements are based on being able to correctly guess randomly changing colour patterns in a game, equating this to high-jumpers declaring efficacy without knowing the height of the bar. A similar methodology is employed by Vancouver et al. (2008) to demonstrate the adverse effects of self-efficacy in which a moving, on-screen target is presented to participants for hitting, with the size randomly pre-set from task to task. Again, Bandura (2012) is highly

critical by stating that the disconnectedness associated with randomisation in such tasks fail to facilitate the self-regulatory effects of self-efficacy.

Self-efficacy is based on prior-to-performance judgements, as opposed to statements of intent or conditionality such as “I will” or “I could”. Therefore, scales with descriptors using “I can” are regarded as statements of efficacy (Bandura, 2012). Studies utilising these descriptive, task-specific “can-do” L2 self-assessments such as DIALANG have shown to yield higher correlations with abilities (Brantmeier et al., 2012). To ensure that the theoretical framework of self-efficacy remains a reliable provider of empirical evidence, general self-concept beliefs and specific task judgements must be separated and treated differently (Linnenbrink and Pintrich, 2003).

A further issue encountered in studies, is the measurement indices used in the various scales. Self-efficacy is a measure of confidence in abilities to achieve a specific task, and as such, should be measured accordingly, using a unipolar confidence scale from 0 to 100 percent (Bandura, 2012). However, even amongst the limited language self-efficacy studies, Likert scales employing bipolar scale statements such as ‘no chance/ completely certain’ (Mills et al., 2006), ‘certain can/ cannot do’ (Woodrow, 2011), ‘not at all true/ completely true’ (Joët et al., 2011) continue to emerge, even with scale ranges varying from four to seven-point Likert scales. The result is an inconsistency in comparability and replicability. Mori (2002), who conducted motivational research on L2 reading efficacy, combined retrospective judgements with self-efficacy judgements on reading self-efficacy scales, thus making conclusions based on different methodological concepts. Furthermore, Williams and Rhodes (2016) argue that the colloquial interpretation of “can-do” phrases in health self-efficacy research instruments do not lead to interpretations of capabilities but reflect motivations to carry out the behaviour. This self-efficacy-as-motivation argument is best summarised by Kirsch (1995) who gives

“Could you laugh out loud during the middle of a funeral?” as an example of this potential blurring of interpretation. In this example, individuals are likely to answer based on their motivation; while most individuals are more than capable of laughing, it is the anticipated embarrassment that demotivates that behaviour.

4.8 Manipulations of self-efficacy

The dearth of self-efficacy manipulation studies in language research leads us on to the final section in this chapter. In order to demonstrate the potential influence of such an intervention, a number of manipulation studies conducted in other domains, including the sole manipulation study in the Irish language context, are discussed below.

Self-efficacy is not a fixed trait; it is informed by the interaction of the antecedents such as the four sources discussed. Initial research into self-efficacy, using laboratory settings, demonstrated how efficacy could be manipulated in areas such as snake phobia (Bandura, 1977a, Bandura et al., 1980) and depression (Davis and Yates, 1982). Bandura and Locke (2003) cite a study conducted by Litt et al. (1993) in which first-time oral surgery patients were divided into groups, one of which aimed to reduce anxiety and increase pain toleration self-efficacy through providing bogus feedback. This intervention group successfully demonstrated a lowering of agitation. When operationalised in the classroom environment, findings have shown how self-efficacy positively influences motivation and learning, goal setting, task persistence, metacognition, and self-regulation (Bouffard-Bouchard, 1990, Lent et al., 1986, Linnenbrink and Pintrich, 2003, Schunk, 2003). In a small-scale self-efficacy manipulation study, Jackson (2002) found that systematic feedback interventions had a significant influence on test performance for psychology undergraduates.

Control group studies using feedback and instruction interventions have demonstrated how teaching practices and interventions can increase self-efficacy (Schunk, 1989). In a number of enactive mastery

manipulation studies conducted by Vancouver and colleagues, groups provided with false feedback ended up with an inflated sense of self-efficacy, leading to a complacent, negative effect on subsequent performances (Vancouver et al., 2002). In a further study by Vancouver et al. (2008), the researchers, using a game requiring participants to hit as many moving boards on the computer screen as possible, provoked enacted mastery at the pre-test practice stage by exposing the high-efficacy experimental group to easier versions of the task at the initial stages, followed by gradual increases in difficulty. Enactive mastery was further manipulated with the treatment group receiving an easier version of the task (much larger boards were used, making the target area easier to hit). Test results showed how enactive experience is significantly related to self-efficacy. However, as discussed above, these studies have been criticised for their over-simplification of concepts and methodology, as well as the use of randomisation in tasks (see Bandura, 2012).

The use of false feedback coupled with false comparative information has been used as the most popular method of manipulation across research domains. Halper and Vancouver (2016), using a hand-grip task, found that unambiguous, manipulated positive feedback leads to increased persistence. In a similar study, Hutchinson et al. (2008) found significant interaction effects between false feedback and variables including self-efficacy, performance, social comparison, and affect. However, the study also found that manipulation interventions such as feedback need to be continuous. Otherwise, the effects on self-efficacy begin to decline, with the exerted effort from the three groups (efficacy-raising, -lowering, and control) becoming more analogous as the task progressed. This further explains the minimal statistical significance in a pain endurance cycling test conducted by Motl et al. (2006), where a time-lag of three days occurred between intervention and testing. Weinberg et al. (1981), using verbal cues to manipulate athletes performing a leg muscle endurance test against a false competitor, found that manipulations of performance were only effective during the

actual test, rather than during the trial test. Woodman et al. (2010) tested the use of self-doubt as a mediator of effort and performance on an experimental skipping task. The authors found a significant effect for the manipulated test instruments on self-confidence. This manipulated lowering of self-confidence led to an increase in performance in the experimental group only. The authors found no significant effect on effort. However, effort was measured as reaction time to random sounds during the skipping task. As the authors suggest themselves, this appears to be more a measure of reaction time, perhaps mediated by physical abilities, rather than a measure of conscious choice.

McAuley et al. (1999) used positive feedback and false graphs representing normative data to positively manipulate performance persistence in female exercise tasks, again highlighting the proclivity for female participants to use social persuasion and vicarious experiences as principal sources of self-efficacy. Iacullo et al. (2016) found that by manipulating feedback in a word memory task, results showed that, consistent with theories of cognitive consistency, participants sought to reduce perceived discrepancies between self-efficacy of memory and task performance. An important methodological issue was controlled for in the study – credibility of feedback. Subjects indicated on a 5-point Likert scale that they strongly believed the feedback received ($N=48$, mean (M)=4.39, standard deviation (SD)=0.72), thereby demonstrating the importance of authenticity for self-efficacy. In providing manipulated peer-comparison feedback, Bouffard-Bouchard (1990) found that participants who received positive feedback believed themselves to be more efficacious than those who received the negative feedback. This manipulation had a direct effect on task persistence through altered achievement goals, and on ability to self-regulate performance.

In the L2 context, Chan and Lam (2010) tested the manipulation of mastery experience and social persuasion by conducting a number of

studies investigating the effect of various forms of feedback on Chinese students during English vocabulary acquisition sessions. In one study, students were tested on English pre-fixes, with one group receiving summative feedback, and the other receiving formative feedback. Results show that formative feedback, which encourages agency in goal setting, was more influential on self-efficacy beliefs than summative feedback, which only provides retrospective feedback, and removes the agency element. The second study demonstrated how self-referenced feedback had a significant effect on raising self-efficacy than norm-referenced feedback. When students were compared with other students, they had little control to outperform others, thus reducing self-efficacy. What this study shows is that when learners are induced to develop low self-efficacy beliefs, they tend to ‘attribute their failures to low ability, to display negative affect, and to show marked deterioration in performance’ (Elliott and Dweck, 1988, p.5). In Barry (2021, see Appendix 3), a simple multiple choice Irish sentence formation task was used to demonstrate the power of manipulated results on performance and time allocated across two phases. Based on performance on 10 items, participants (N=450) were assigned to a low, high, or control group. Low performers were given false inflated results, while high performers were provided false deflated results. Participants were then asked to correctly form a further 10 sentences. Mixed ANOVAs for performance were significant for phase, experimental group and interaction. For time allocated, the group and interaction effects were significant. The study showed that, on a basic Irish sentence formation task, performance could be manipulated in the short-term.

4.9 Conclusion

This chapter has established the theoretical domain that guides this research. Irish language self-efficacy emerges as a complex, culmination of an individual’s experiences, interactions, and reflections on language learning, where perceptions become more

influential on behavioural outcomes than actual abilities (Hendricks, 2014). In defining self-efficacy, we become more cognisant of the experiential sources encountered by the Irish language learner in the construction of their Irish language ability beliefs. Whereas Chapter 2 allowed us to determine the Irish classroom as the principal realm in which Irish language is acquired and used by learners, the current chapter considers how more specific variables such as the classroom culture, the role of the teacher, and peer interaction influence individuals when executing behaviours relative to the Irish language. The chapter opened with a brief description of social cognitive theory and the power of agency in affecting actions in the individual. Once again, the social environment as a factor in SCT and self-efficacy allows for a continuation of the concepts behind SLA already highlighted in Chapter 3, where social structures intersect with factors including memory, affect, motivation, and even language attrition.

The chapter then outlined further, more distilled aspects of self-efficacy. The role of self-efficacy as a goal-referenced measure of outcome expectations, including how control theory provides a view of behaviour as a negative feedback loop where individuals seek to reduce the discrepancies between perceptions of current and desired states, was discussed. An emerging strand from the control theory perspective is that self-efficacy can potentially have a negative relationship with performance – a point disputed by Bandura and Locke (2003). However, as discussed, we saw an implied reluctance that some self-doubt could increase persistence and effort, thereby aligning with some of the control theory research outcomes. The chapter migrated from a general discussion on self-efficacy towards education, including teacher self-efficacy, on to language learning. The negatively correlated relationship between self-efficacy and language anxiety and performance avoidance was discussed. The role of teachers as promoters of language agency through interventions such as feedback and modelling was also considered – an important aspect in the Irish language context considering the years and resources dedicated to

teaching the language. Another important corollary in self-efficacy research – resource allocation – was outlined. We saw how low self-efficacy creates perceptions that the language environment is uncontrollable, having a detrimental effect on deploying resources such as effort, persistence, study time, self-reflection, language rehearsal, etc. Theoretically, the relationship between self-efficacy and resource allocation is positive, with highly efficacious individuals operationalising more resources than their low efficacious counterparts. However, again, control theory seeks to dispel any uncontested acceptance of this relationship in stating that a highly efficacious language learner will be confident enough in their abilities that they feel allocating resources such as study time may be unnecessary. This section was followed by an outline of the relationship between self-efficacy and cognition, and in suggesting that self-efficacy improves cognition in learners, provided further argument on the importance of self-efficacy as a variable in debates on education.

The chapter then presented an analysis of the four interacting sources that individuals draw upon in developing self-efficacy beliefs. We saw how previous performances in a language are the strongest source of information for individuals when judging abilities on similar future tasks. Vicarious experiences represented a multi-faceted, socially situated source of information, ranging from peer comparison to a variety of language models. Again, the role of the language teacher in creating an appropriate culture for classroom acquisition of Irish was highlighted as contributing to either the raising or lowering of self-efficacy. Social persuasion via feedback – a factor in previous Irish language self-efficacy research (Barry, 2020) emerges as another complicated source, where dynamics such as source, authenticity or continuation of feedback become more relevant in the L2 context. The final source, physiological and effective states, representing the emotional framework, was found to provide a link with foreign language anxiety. These arousal states of anxiety can be either debilitating or facilitative when it comes to effecting appropriate

performance behaviours. Attribution theory, of which some aspects appear to run in parallel with self-efficacy, was then considered in this chapter. The core argument is that individuals attribute success or failings in performance to internal or external factors based on where they lie on the efficacy spectrum. Hsieh and Kang (2010) identify specific language learning environments such as the classroom as a significant variable in how L2 learners attribute performance outcomes, and by extension, future L2 task engagements.

The chapter closed by describing some of the methodological issues in gathering data on self-efficacy. Some of Bandura's (2006) scale construction guidelines were presented in light of the decisions that will be taken in the next chapter. Self-efficacy research that has not adhered to these principals was also outlined to highlight methodological weaknesses such as failing to acknowledge the unipolarity of confidence ratings, the use of general self-efficacy scales or concepts, irrelevance of scale to what is being measured, or badly designed statements involving modality or ambiguity. Finally, experimental manipulation studies in a variety of domains were introduced to present one of the aims of this research: whether interventions affect performance or resources allocated towards a task. As stated, the paucity of L2 manipulation studies has mainly confined this overview to findings from non-L2 fields. What does emerge is that performance, resource allocation, and self-efficacy itself can all be manipulated through experimental designs using, for example, false comparative information, targeted feedback or by introducing self-doubt. It is anticipated that the aspects of self-efficacy presented in this chapter will be further contextualised as we move towards the methodology and design justifications for this investigation in Chapter 5.

5. Research Methodology

5.1 Introduction

This chapter outlines the design and methodology used in this study, opening with a more contextualised overview of the research aims from the introductory chapter of this study. The objectives section will reintroduce the seven principal research questions that guide this research. The research design will present post-positivism as the theoretical worldview employed in the study. As will be seen, the rationale and objectivity offered by this position aligns with the procedures and compromises that pervade this study. The absence of any empirical research as a template to build upon has called for a quasi-experimental approach to answering the research questions where participants were assigned to groups based on abilities rather than through randomisation. A fully quantitative methodology was chosen for this study, based on the use of interventions and the capture of psychological, latent concepts via the use of attitudinal and self-efficacy scales. Whereas a mixed methods design allows for an initial exploration of the topic (Tavakoli, 2012), previous research on Irish language self-efficacy and attitudes (Barry 2020, 2021), coupled with scale constructions in language research (see Mills et al. 2006), have provided enough contextual background for instrument construction. As will be revealed, the measure of self-efficacy perceptions is derived entirely from the test instrument, thus rendering a self-efficacy based qualitative research element unnecessary at this pre-analysis juncture. An overview of this two-phase procedure is presented. Participant criteria is provided with a justification for the use of random sampling methods.

The approach to manipulating self-efficacy in the context of this research is explained, including the proposed categorisation methods for participants. The decisions taken in this section refer back to the discussion on self-assessment in Chapter 3. As stated throughout, this

is a first attempt to answer this genre of questions relative to the Irish language, and as such calls for a full design of the data-collection instrument. The development of an Irish language proficiency test, and its subsequent expert panel review is thoroughly outlined. As will be seen, an existing online, self-administered Irish test covering varying levels of ability was used as a model for writing the test described here. As self-efficacy can only be accurately assessed when measured directly against the task at hand (Bandura, 2012), a scale which mirrors the Irish proficiency test was developed. The creation of the scale items and choice of Likert intervals are outlined, with reference to limited, previous empirical attempts at capturing this concept.

The attitudinal and attribution scale design is considered in depth. A statistical analysis of an Irish language attitudinal dataset from an unpublished study by this author is statistically analysed using exploratory structural equation modelling to determine the most effective questions for this investigation. The chapter will close on the piloting procedures that resulted in significant design changes and compromises, all of which are discussed in detail.

5.2 Objectives of this study

The current study seeks to investigate the accuracy of Irish self-efficacy as a measure of performance on an Irish language test in adults that have taken the final school exam, the Leaving Certificate, or equivalent. As discussed in Chapter 4, it has been argued across numerous domains that self-efficacy is a more accurate predictor of behaviour, i.e., performance, than actual abilities. This research seeks to address the gap in Irish language self-efficacy research by not only measuring the accuracy of self-declarations of Irish language self-efficacy, but by also attempting to manipulate performance outcomes, including time allocated to the task and subsequent self-efficacy declarations, through experimental conditions based on abilities. This intervention may have the potential to identify a level of Irish language

knowledge that for some participants may unknowingly exist at the residual level, thus providing evidence for targeted interventions at the early acquisition stages through for example, self-reflection or feedback. This study also takes the opportunity to compare omnibus Irish language questions such as those used in the Census of Population every five years with task-specific Irish language scales. As discussed in Chapter 4, the limitations of omnibus questions on abilities, coupled with binary response options lack the nuance of accurately measuring language knowledge. This study not only provides the opportunity to investigate this premise, but to also assess participants' opinion on having the opportunity to declare Irish language abilities in skills beyond speaking, including alternatives to the current official approach on collecting Irish language data such as an Irish language self-efficacy scale in the Census. Finally, variables extracted from the test instrument, as outlined above, will be used to investigate their contribution in predicting performance outcomes as well as self-efficacy declarations themselves.

In assessing the issues around perception and performance discussed in Chapters 3 and 4, it is hoped that this study can provide an insight into the relationship between Irish language ability beliefs and Irish language test performance outcomes for adults that have undertaken the terminal examination, the Leaving Certificate, or equivalent. This thesis sets out to establish baseline metrics on abilities through both self-assessment and actual performance and to test whether these metrics can be altered through self-efficacy interventions. For convenience, the research questions presented in the introduction to this study are restated here:

1. How accurate are Irish language self-efficacy ratings as a predictor of performance on an Irish proficiency test?

- 1.1 What is the direction of the relationship between Irish self-efficacy and Irish test performance?

1.2 How accurate is the relevant sub-scale of self-efficacy as a predictor of Irish language performance on a:

- Irish grammar test
- Irish listening test
- Irish reading test

2. Do single omnibus language questions represent performance when compared with self-efficacy task-specific scales?

3. Do Irish language self-efficacy beliefs predict the allocation of time dedicated to an Irish language task?

4. Does manipulated performance and false comparative feedback have an effect on:

- Performance
- Resource allocation
- Self-efficacy

5. Which variables predict self-efficacy of Irish language skills?

6. Which variables predict performance on an Irish test?

7. Do participants believe declarations of other Irish language skills (reading, writing and listening) as well as graded “can-do” self-efficacy statements provide a valid measure of Irish language skills in a national Census of Population?

5.3 Research design

The methodology employed in this study involves the collection of data and analysis using quantitative methods, grounded in a postpositivist worldview. Postpositivism assumes a philosophy whereby phenomena can be reduced to discreet data sets for the purposes of objectively observing and measuring real world occurrences (Creswell and Creswell, 2018). Postpositivism is regarded as a fundamentalist version

of empiricism, an epistemology advocated by John Locke in which strictly observed experience was considered the foundation for arriving at knowledge (Phillips and Burbules, 2000). The evolution of empiricism towards a postpositive world view encouraged experimental research based on latent variables. In brief, postpositivism considers empirical evidence imperfect and fallible, advocates the abandonment and/or refinement of theoretical claims, is objective in the search for developing statement on causal relationships, and most importantly, assumes a rational assessment of collected data and evidence (Creswell and Creswell, 2018). These guiding principles are central to this research, allowing for the assumption that ‘knowledge is inherently embedded in historically specific paradigms and is therefore relative rather than absolute’ (Patton, 2002, p.92) – an essential perspective for addressing a subject as emotive and ideologically driven as the Irish language. To this end, a quasi-experimental mixed design will be utilised in this investigation into Irish language self-efficacy beliefs.

The test instrument in this study comprises three distinct elements: an Irish language proficiency test; a set of task-specific Irish language self-efficacy sub-scales; and a series of attitudinal and experiential questions related to the Irish language. The test instrument is administered using the online survey software, Qualtrics, which allows for a more efficient distribution of self-administered surveys and tests, especially in the ever-evolving context of Covid-19. The assessment takes place over two defined phases within the one sitting to allow for a manipulation intervention (see discussion further below), which involves providing false results and feedback depending on group membership based on phase 1 scoring. Phase 1 begins with participants asked to provide basic demographic and Irish language background information. These brief questions are followed by a number of self-efficacy scales directly aligned with, and followed by, an Irish proficiency test consisting of a number of multiple-choice questions (MCQs). Following this first phase, based on results, participants will

be unknowingly auto assigned to groups, determining whether they received the intervention or not. Feedback and scores are provided, followed by a set of questions related to Irish language attitudes and experiences. Participants are then presented with the same self-efficacy scales already encountered in phase 1 to determine if results or performance in anyway alters the original self-efficacy declarations. The final phase of the assessment is a second series of Irish language MCQs similar to those encountered in phase 1. Following this second phase, participants are provided with information on the true nature of the experiment, including their actual results, and asked to give their consent now that they had full knowledge of the study.

5.4 Participation criteria

In order to take part in this research, all respondents were required to have fulfilled the following criteria:

- Have completed Irish as a subject in the Leaving Certificate, or equivalent; and
- Be aged 18 years or over.

These criteria seek to ensure that all candidates have at least been exposed to an equity of classroom or Irish language curriculum exposure before the age of 18. However, in order to achieve this, participation would need to be restricted to those that learned Irish as a second language in the Irish education system only, i.e., excluding those that are native speakers or grew up in a bilingual home environment where Irish was spoken. The random sampling methods used in this study, explained further below, self-administration, and the anonymisation of all participants, rendered this approach impossible. While the merits of confining participation to non-Irish speakers, or new speakers, to determine concepts such as language attrition in non-Irish language users is worthy of consideration, the input of Irish speakers provides a counterbalance from a number of perspectives. For example, self-declarations of abilities or Irish language attitudes based on school experiences are not always pre-determined by native speaker

status (see Barry, 2020). Furthermore, the common thread throughout self-efficacy research is that self-efficacy rather than abilities is a better predictor of performance behaviour. The inclusion of a Leaving Certificate equivalence was added to control for participants that completed their education in Northern Ireland.

5.5 Manipulation of self-efficacy

As seen in Chapter 4, self-efficacy can be categorised as a form of expectancy in which individuals believe they can organise and allocate resources to achieve certain levels of performance (Bandura, 1977a). Self-efficacy beliefs affect the deployment of both the quality and quantity of resources such as resilience and effort (Wyatt and Dikilitaş, 2021). In this study, these allocated resources are operationalised as time spent on both phases of the test, measured in seconds. In order to test for the influence of self-efficacy sources on performance and resource allocation, an intervention procedure is necessary. Successful manipulation of self-efficacy has been demonstrated in a number of domains, particularly sports psychology and performance (Halper and Vancouver, 2016, Marquez et al., 2002, McAuley et al., 1999, Motl et al., 2006). The methodology has also been successfully demonstrated in the Irish language context (Barry, 2021), where false results and false comparative feedback were used to affect two self-efficacy sources: enactive mastery experiences, and social persuasion.

The initial, pre-piloted, intended procedure was as follows: based on individual scores out of 38 possible marks on the proficiency test in the first phase, participants would be unknowingly auto-assigned to one of four groups divided by quartile (see table 5.1, below): a high scoring (H) group; a low scoring (L) group; and two control groups – a high scoring control group (CH) and a low scoring control group (CL). The H group would represent the upper middle quartile group of scores (between 19 and 28 marks out of 38). This group would receive falsely deflated results and a message stating that their performance was just below the average for performers on this test. The L group would

consist of participants that performed in the lower middle quartile group of scores (between 10 and 18 marks out of 38). This group would receive falsely inflated results and a message stating that their performance is above average for this test. The bottom and top quartile performers on the test would receive their actual results and no feedback message, thus representing the control groups.

Table 5.1 Pre-determined group distribution by score range at phase 1

Low control (CL)	Manipulation groups		High control (CH)
	Low (L)	High (H)	
0 - 9	10 - 18	19 - 28	29 - 38

The decision to manipulate the two middle groups of performers is based on language self-assessment studies which state that individuals often base self-assessment ratings on how well they believed they could perform, rather than on their actual, current level (Graham, 2004), particularly at the upper and lower quartiles. This widely held view (see Dunning et al., 2003, Ehrlinger et al., 2008, Kruger and Dunning, 1999) has the potential to distort the intended manipulation procedure in this study. By providing, for example, falsely inflated results and positive feedback to the lowest level performers, a confirmation bias may become an unintended factor in this research. If the empirical evidence shows that lower-level performers lack the metacognitive skills to appraise their abilities, and higher-level performers tend to underestimate abilities (Kruger and Dunning, 1999), then over- or under-confidence confirmed by results may actually lead to a confirmatory-driven, natural withdrawal of resources (see Vancouver et al., 2002, Vancouver et al., 2001). These studies highlight an important issue relative to self-efficacy research: the lower and upper quartile performers may be prone to misinterpreting previous Irish language self-efficacy sources. Due to confounding variables such as

metacognition or perceived task difficulty, as well as perceptions of language attrition following periods on non-use, these upper and lower tier groups may be less amenable to manipulation of self-efficacy through false results, i.e., someone capable of getting over 90% correct is likely aware that they have scored well and perceive feedback that they scored poorly as incorrect. Furthermore, the use of upper and lower quartiles, referred to as the extreme group approach (EGA), is cautioned against except for in unavoidable instances in Preacher et al. (2005). The authors warn that this EGA approach can influence effect sizes, statistical power, reliability, and interpretability of results.

5.6 The Irish language test instrument

5.6.1 Background

In 1991, the Council of Europe recommended the introduction of a CEFR for transparency and coherence in language teaching and learning (Council of Europe, 2001). The CEFR, formally launched in 2001, includes a set of comprehensive, “can-do” descriptors for describing language proficiency, ranging across six levels (A1 – basic user to C2 – proficient user). The CEFR has evolved into a normative standard in language assessment across over 40 European and non-European languages (Deygers et al., 2018). The prevalence of the CEFR has drawn criticism from a number of authors. For example, Fulcher (2004) argues that the politically motivated institutionalisation (and subsequent commercialisation) of the CEFR has led it to be regarded as “the” system, with language teachers often taking the level descriptors as representing a set hierarchy of L2 acquisition targets. The deliberate lack of language content specification in the descriptors has also led to tenuous links between institutional testing and the CEFR.

Currently, there are no CEFR descriptors for the Irish language. However, the Centre for Irish Language at Maynooth University has been administering the *Teastas Eorpach na Gaeilge* (TEG) certificate since 2005, which is loosely based on the CEFR descriptors and is in

line with the Association of Language Testers in Europe (ALTE) standards of quality assurance (TEG, 2021a). The TEG covers A1 to C1 levels: *Bonnleibhéal* (foundation level), covering A1 to A2; *Meánleibhéal* (intermediate level), covering B1 to B2; and finally, *Ardleibhéal* (Higher, or advanced level) for C1. According to TEG, the guided learning hours (study and tasks) required for each of the five exam levels are as follows:

Table 5.2 Teg Syllabi, exam levels, and hours of study (TEG, 2021c)

TEG Syllabi and Exam Levels	CEFR Levels	Hours of study*
Bonnleibhéal 1 (A1)	A1	80–100
Bonnleibhéal 2 (A2)	A2	+ 160–200
Meánleibhéal 1 (B1)	B1	+ 350–400
Meánleibhéal 2 (B2)	B2	+ 500–600
Ardleibhéal 1 (C1)	C1	+ 1000
	C2**	+ 1500

* *These figures are estimates.*

** *Level added for context.*

The required hours are similar to other language centres that teach languages which have been provided with CEFR descriptors. For example, for French, an estimated 950 hours are required to reach C1 level (Alliance Française Leeds, 2021) while English requires approximately 800 guided learning hours for level C1 (Cambridge University Press, 2013). The context of study hours is important in the Irish language context, as the majority of students that have taken compulsory Ordinary or Higher-level Irish to the Leaving Certificate will have received anywhere between an estimated 1,500 to 2,300 hours of classroom contact with the Irish language, excluding homework or external tuition (Ó Ceallaigh and Ní Dhonnabháin, 2015, Ó Laoire, 2005a, Ó Laoire, 2005b). A criterion for taking part in the

study was that participants had completed the Irish language Leaving Certificate, or equivalent.

The current methodology in Ireland for verifying academic achievements in language is to use the National Framework of Qualifications (NFQ) – a ‘10-level, single national entity through which all learning achievements may be measured and related to each other’, administered by Quality and Qualifications Ireland, an independent State agency (QQI, 2018). The Leaving Certificate, for example, is represented as levels 4 and 5 on the NFQ, whereas level 10 represents a doctoral degree. According to the former Minister for Education, Jan O’Sullivan, Leaving Certificate Irish is broadly comparable to levels A2 and B1 of the CEFR (O’Sullivan, 2014). As a direct relationship between examinations and the CEFR have yet to be established, the TEG syllabi and approach to mapping the Irish language (again, broadly) to the CEFR represent the only appropriate categorisation of empirically evidenced, proficiency measurement.

TEG provides a 60-question, self-administered online proficiency test to roughly determine the level of Irish ability that a person has, with the aim of identifying the appropriate level to consider when applying for an Irish language course (TEG, 2021d). Reading, writing and listening skills are tested. In most cases, multiple-choice answers are provided for the questions. In instances where writing is tested, due to the self-administration procedure, only single words are required to fill the gaps in short passages. Reading passages range from 130 to 300 words, followed by questions. There is an emphasis on grammar and contextual intuition, with difficulty increasing as candidates work through the 60 questions. For example, the first set of questions are based on material from the A1 syllabus, featuring topics such as introducing yourself, and grammar points including prepositions, pronouns, interrogative forms, etc. The test was developed to reflect the topics, functions, and grammatical and lexical items covered in the syllabi, and was based on internal research including test performance of candidates on TEG examinations (Ní Mhaonaigh, 2020). Due to its

simplicity of administration, this test has provided the model for the language test instrument in this study.

5.7 Developing a proficiency test model

In order to test for participants' levels of Irish language competencies, it is essential that the parameters of the test instrument cover a range of abilities, from those that believe Irish language attrition or loss has taken place since leaving the education system to those that are using the language daily. While the TEG test represents the most robust, accessible self-assessment of Irish language skills aligned with the CEFR, its direct use is inadequate for the methodology in this study. The main purpose of this research is to measure the influence of manipulated self-efficacy via results on performance and resources. Therefore, a phase 1 test similar in scope to the TEG test is required to establish a baseline of performance pre-intervention. To ensure that the manipulation effect can be assessed over the two phases, and that participants are not presented with the same items twice, each test item must be measurable on two occasions. For example, a question that tests participants' ability to form the future tense irregular must appear in both phases. A similar approach was taken in Graham and Macaro (2008), where UK-based GCSE students studying French were tested over three phases on a French listening test that varied slightly at each phase but assessed the same themes. This methodology allowed the authors to monitor the effects of scaffolding interventions. Based on a previous Irish reading test manipulation study (Barry, 2021), it is anticipated that the self-efficacy manipulation will manifest in inconsistencies in some of the participants' answers on these parallel items, i.e., a participant who has received false, deflated results and feedback, but has correctly answered an item, may through manipulation, reduce effort and incorrectly answer the parallel item at phase 2.

The decision was taken at the item construction stage to focus on A1 to B2. There are two reasons for this. Firstly, a criterion for taking part

in this study was that all participants have taken the Irish language to Leaving Certificate level which is based on A2/B1 level. By extension, it is expected that participants will have taken the Junior Certificate exam prior to this; an exam based on A1/A2 level, thereby ensuring that the proficiency levels required for both examinations are covered. Secondly, the TEG C1 syllabus and guidelines for teachers do not provide comprehensive lists of themes, functions, grammar and vocabulary. Instead, learners at this level are expected to build and develop on the elements contained in the A1 to B2 levels (TEG, 2021b). This expectation informs the assumption that native Irish speakers or participants highly proficient in Irish learned as a L2 taking this test are likely to achieve a perfect or very high score on the A1 to B2 questions, thereby exempting them from the manipulation procedure. Furthermore, the depth of language at C1 level requires a testing which involves for example, longer, contextualised texts which encompass behavioural dimensions (Little, 2007). When focusing on receptive L2 skills, as the proficiency test mainly aims to achieve, to assess the C1/C2 levels the test should prompt participants to use ‘grammatical and lexical cues to infer attitude, mood and intentions and anticipate what will come next’ (Council of Europe, 2001, p.72). This condition is unsuited to an online assessment that is designed to be short, accessible and engaging for all participants.

Finally, a decision was taken in the early developmental stages to exclude the testing of speaking and writing. The practicalities of developing automated scoring criteria, covering every orthographical eventuality, for an uncontrolled, idiosyncratic skill such as writing would require a level of analysis beyond the capabilities of standardised survey platforms. The same practicalities apply for testing Irish oral competencies online: relying on uncontrollable variables such as participants’ ability to record themselves speaking, and then to have a system that auto-analyses recordings that differ in quality, dialect, performance, etc., is beyond the scope of this study.

5.7.1 Proficiency test content

The final proficiency test consisted of three distinct parts: a series of grammar MCQs; a reading comprehension; and a listening comprehension. For the grammar section – based on the TEG online proficiency test – a list of grammar items from the A1 to B2 TEG syllabi was compiled to create an overview of what each level of learner should expect to encounter and have knowledge of. Using these grammar points, sentences were constructed with three multiple-choice options from which to choose the correct sentence. In total, 68 sentences were drafted, representing 34 grammar points tested across both phases. Examples of grammar to be tested included noun forms, attributive adjectives, prepositional pronouns, comparatives, future irregular verb forms, copula, and so on.

A number of sources were used to create realistic, semi-authentic sentences. For example, the 30-million word New Corpus for Ireland (Kilgarriff et al., 2006), accessed via the online text analysis tool, Sketch Engine, contains a large number of texts from 1883 to present. This body of texts facilitated the search for examples of authentic examples of the Irish language. Irish language grammar books, including the Collins Easy Learning Irish Grammar (Comer, 2017), were also consulted for model examples that were used to create original sentences for the test. These MCQs addressed specific grammar points highlighted in each of the TEG level descriptors and were framed in the relevant vocabulary for that particular level. For example, an A1 level participant should be able to use personal pronouns to introduce themselves, whereas a B2 level participant should be able to use the irregular past tense to comprehend subjects such as the media. However, it must be noted that there is considerable overlap between some of the levels. Even ALTE's Manual for Language Test Development and Examining, which uses the CEFR as its foundation, cautions that 'it is not possible to characterise a 'typical B1 student'' (ALTE, 2011, p.9).

For the reading comprehension, six semi-authentic texts were created for A1 to B1 level (two texts for each level), while extracts were taken from *Nós*, a contemporary, online Irish culture magazine for the two B2 level readings. The semi-authentic texts were created by a current Irish language test writer that has previously worked with TEG on developing their threshold levels. These texts were written in the style of letters, text-messages, blog posts, and postcards – all replicating standard Irish language test formats that participants would have encountered during their learning of Irish. MCQs, sequentially ordered relative to the text, accompanied each reading passage. The texts ranged from 80 to 140 words in length.

The listening comprehension comprised four original, semi-authentic texts in the style of a voice message, a podcast, a news report, and an advertisement for a TV show. To ensure that the participants in the final study were not overburdened, the listening texts each represented a composite level – two texts representing both A1 and A2 levels combined for both phases, and two texts for B1 and B2 combined. As with the reading comprehension, these texts were created by the same test writer. MCQs sequential to the text were included. Two primary school teachers that teach Irish (one male, one female) and two third level students studying a large number of Irish modules (both female) from two different Munster regions were recruited for providing the voices for the texts. Ages ranged from 22 years to 35 years. Using the music production software, Ableton Live, each voiceover was recorded separately using a high-quality condenser microphone. Each person recorded at least five takes of themselves reading the text. From these a master take was created by editing together the best performances. The average time for each recording was around one minute 30 seconds. Sound effects, clips and background music were then added to create further authenticity. The finalised master takes of the four recordings were then reviewed by the test writer.

5.7.2 Content validity

A panel of experts was established to review the full item pool of the three-part proficiency test. Both reviewers were independent of the research, were native Irish speakers, and work and research in developing Irish language curricula aligned with TEG and CEFR standards. In order to assess the content validity of the complete test, the reviewers were asked to consider the following three themes when providing ratings:

1. Appropriateness of level – does the sentence/question represent what an individual should understand at the proposed level?
2. Representativeness of language (for this level) – does the sentence/question represent what you would consider an important aspect of the Irish language for this level?
3. Distractor options – are the 2 incorrect distractor questions/sentences adequate enough to present a challenge at this level?

The rating scale provided was a 4-point Likert scale (see table 5.3 below). The reviewers were asked to provide a rating, with optional comment, for each of the 34 grammar MCQ pairs, a global rating using the same scale for each of the 8 reading comprehension texts and questions, and a global rating for each of the 4 listening comprehension recordings and accompanying questions. For ease of administration, and as a means to test the presentation environment of the final test, a Qualtrics survey was created for each of the three parts for review, with the ratings scale provided directly beneath each question, text or recording for review. Links to the three parts were then emailed to the reviewers, who completed the review within 6 weeks.

Table 5.3 Expert panel review scale and scores

4 = adequate for this level
3 = adequate but need revision
2 = item needs revision

1 = not adequate for this level

Once ratings were provided for the three parts of the test, a content validity index (CVI) was employed to enable item elimination. A CVI is a procedure which allows two or more reviewers to evaluate relevance and adequacy of items on a data collection instrument (Wynd et al., 2003). Utilising the rating scale provided, a process of proportion agreement was used where items deemed ‘adequate for this level’ or ‘adequate but needs revision’ are declared content valid, whereas items rated as ‘item needs revision’ or ‘not adequate for this level’ are declared content invalid (Lynn, 1986). To calculate each item CVI, the number of 3s and 4s scored per theme is averaged to get a CVI. The three theme CVIs are then averaged to get a final item CVI, representing an averaged count of content validity per item. The scores range from 0 to 1, with scores $\geq .75$ considered strong (Waltz and Bausell, 1981).

Seven of the 34 grouped grammar items, one of the reading texts, and two of the listening comprehensions failed to reach the threshold. Where comments were provided for grammar items, they related to issues on syntax, stress forms, assessing too many aspects simultaneously, or distractors potentially being also correct. For the reading texts, the comments highlighted a need for a higher order B2 text to distinguish levels. For the A1/A2 recordings comments suggest that the recording be broken into smaller portions, with the relevant MCQ below.

The loss of seven paired grammar items meant that 27 pairs remained, all receiving perfect scores of 1. This posed a problem, as the item pool was still considerable lengthy. As previously discussed, the TEG test comprises only 60 individual items. For user engagement purposes, the overall item pool on this test needed to be similar in length. A decision was taken to define “content valid” items as those that received a rating of 4 - *adequate for this level* only. Adjusting calculations to only recognise counts of 4, 16 items now remained. These 16 items now

represented the highest quality items overall, and included 6 items for A1, 5 for A2, 2 for B1, and 3 for B2. A decision was taken to use the four highest scoring items from each level to ensure consistency of scope. Items that were repeated across grades, such as copula and future tense, and items that scored high but required a rewriting based on comments were removed from A1 and A2. The next highest scoring items in B1 and B2 were reviewed based on comments and were chosen based on not asking the same question at different grade levels. The final grammar areas per grade are as follows:

- A1: noun form; preposition - *i* and *le*; question form and prepositional pronoun;
- A2: future tense; comparative and superlative; imperative and word order;
- B1: compound preposition; stronger form of preposition *le*; 'need' + pronoun; conditional mood;
- B2: dependent v independent verb forms; prepositions; place names and prepositions; copula + bias.

Comments on the reading and listening tests were addressed. The two A-level recordings were edited into three parts each with the relevant MCQs under each section. A higher-order set of B2-level reading texts were extracted from N6s. Finally, each reading text of MCQs was reduced to three questions per text. For the listening MCQs, these were reduced to five MCQs per recording. This was necessary for the purposes of reducing burden, and for having a comparable balance between phases. Upon adding the items to Qualtrics, the word order task in A2 could not be accommodated as an item that could be automatically scored. This was replaced by the next highest performing item according to the panel review – plural nouns. The full pre-piloted test is at Appendix 4.

5.8 Irish language self-efficacy scale

Self-efficacy is a perceived judgement of capability within a specific domain of functioning. As Bandura (2006, p.307) outlines, a self-efficacy scale based on general, rather than specific task-based abilities, is ‘divorced from the situational demands and circumstances’. General scales weaken the effect of self-efficacy as an independent variable on performance (Mills, 2014, Pajares, 1996). In order to achieve an appropriate measure of content and construct validity, the scale items must be capable of being mapped to a task that represents ‘gradations of challenges or impediments to successful performance’ (Bandura, 2006, p.311). Therefore, omnibus scale items such as ‘can you speak Irish?’ do not provide a true representation of the multi-dimensional nature of language capabilities. The Irish language proficiency test instrument described above forms the reference point for the development and mapping of the self-efficacy scale. As self-efficacy is based on forming specific, future-orientated judgements of ability, and is best assessed directly prior to the performance to which it is associated (Bandura, 1997, Hendricks, 2014), scale items must reflect the content of the test participants are about to take.

A valid measurement of this construct should be a unipolar declaration of confidence, ranging from 0 to 100% as opposed to a bi-polar Likert scale, which lacks the required sensitivity and often exhibits negative gradations that are arbitrary in nature (Bandura, 2006). However, in regard to sensitivity, it may be impractical to ask participants to declare ability perceptions across a 100-point scale. Coupled with the simplicity and proliferation of the Likert format across multi domains (Chyung et al., 2017, Leung, 2011), a solution is to use an interval Likert scale, where participants are asked to rate their confidence in intervals of 20%. A description was also provided for context. The 6-point scale was as follows: 0% (No confidence); 20% (Little confidence); 40% (Slightly confident); 60% (somewhat confident); 80% (Fairly confident); and 100% (Complete confidence). In Bandura’s scale construction guidelines (2006), he advises an 11-point

scale using intervals of 10%, with only three context descriptors provided: 0 (Cannot do at all); 50 (Moderately certain can do); and 100 (Highly certain can do). An issue with applying this approach is that a middle or neutral point coupled with the only non-absolute descriptor may lead participants to gravitate towards the 50% confidence mark. As the intention of measuring self-efficacy rests on absolute endpoints, research has shown that results are more prone to concentrate in the middle (Wyatt and Meyers, 1987). By removing the midpoint, participants are encouraged to actively declare whether they are 'slightly' (40%) or 'somewhat confident' (60%), thus helping to control for confounding factors such as social desirability bias (Garland, 1991).

Three subscales (see Appendix 5) were created to represent each aspect of the proficiency test: grammar, listening and reading.

5.8.1 Grammar sub-scale

A search through the literature revealed no language grammar subscale adequate enough to represent the context of this study. For example, Collins and Bissell (2004) assessed self-efficacy in English grammar by asking students to amend grammatically incorrect sentences and declare their level of confidence in their efforts. Most studies that assess grammar, do so in the context of writing abilities (see Pajares and Valiante, 1997). In a writing self-efficacy study addressing grammar by Shen et al. (2020), and using adapted scales from Bruning et al. (2013), areas such as punctuation, spelling, paragraph formation, etc. were assessed.

Lin (2021) used a similar assessment of grammar as the current study by asking English as a Foreign Language students to select the grammatically correct sentence from a number of options. However, the self-efficacy scale instrument used is built on the metalanguage with which the students would be very familiar. For example, confidence in abilities to use 'noun classes introduced by *that*'. The

issue with using grammar metalanguage is pertinent to this study. The test itself has been designed as a structured, general proficiency exam, using authentic Irish language. It is anticipated that a large number of participants will not have been examined in Irish since leaving school. Therefore, the overwhelming empirical approach of testing current language students, which facilitates framing grammar confidence scales using grammatical terms, is inappropriate in this context. The objective is to create an engaging, non-discriminatory testing environment. This is only achievable by asking participants to self-assess their grammar skills by using non-specific language. For example, for assessing prepositions in Irish, the scale item was presented as follows:

‘How confident are you that you can correctly identify: the correct link words/ prepositions in a sentence (e.g. Beidh mé abhaile **tar** éis a sé **mar** tá mé ag obair **ó** mheán lae / I’ll be home **after** six **because** I’m working **from** midday)’.

The scale item above is simplified for those unfamiliar with the term preposition, and includes an example in Irish with the English translation. In this example, the prepositions are highlighted in bold to make the process of interpretation uniform and by removing as much doubt as possible for all participants.

The grammar scale was based on the sixteen grammar areas tested in the MCQs over both phases. A decision was taken to focus on the questions that could be interpreted generally, such as verbs, prepositions, imperative, comparative and superlatives, nouns, etc. Items such as the dependent and independent forms of a verb or the copula with bias were not included due to difficulty in scale item construction. In total, 10 scale items were designed to reflect the two sets of sixteen grammar MCQs.

5.8.2 Reading and listening self-efficacy sub-scales

The model for developing these sub-scales was based on Mills et al. (2006), who developed a French listening (21 items) and French reading (14 items) self-efficacy scale directly mapped to corresponding items on a proficiency test. 95 intermediate level college students studying French were asked to declare their French self-efficacy, and then subsequently tested in French reading and listening. The scale items were based on French language skills at intermediate and advanced levels, as outlined by the American Council on the Teaching of Foreign Languages (1986). Mills and colleagues asked whether participants could either read and understand or listen and understand the ‘main ideas’, ‘details’, or ‘main topic’ of a number of tasks taken from the Council’s guidelines. For example, ‘read and understand the *details* of a page from a tourist brochure describing various organised activities in France’ (Mills et al., 2006, p.291, emphasis in original). The item is simultaneously contextualised to the item they are about to be tested on, but also representative of a general skill at that particular level. The differentiator “details” implies a depth of reading capabilities beyond “main ideas”. Mills et al. reported high internal consistency for both scales: alphas of .97 and .95 for listening and reading respectively.

Consideration had been given to adapting the “can-do” format from the CEFR. However, the global scope of these statements naturally lacks context, or the simple language required for participants that may not have been asked to assess these Irish language skills in the past. Using the context of each reading and recording, seven items were designed for the reading self-efficacy sub-scale and nine items for the listening sub-scale. Two of the differentiators from Mills et al. (2006) were used: ‘main ideas’ and ‘details’. For example, ‘How confident are you that you can: listen to and understand the *main ideas* of a casual phone message to a friend in Irish’.

5.9 Attitudes, opinions and attribution scales

Following the phase 1 test and after receiving results, participants were presented with a number of questions designed to gain insight into the following themes: overall confidence in Irish abilities, school experiences, attributions, and opinions on the Census methodology for recording Irish language data. Utilising results from an unpublished study on Irish language attitudes and perceptions conducted by this researcher in September 2021, a statistical analysis of the responses from 499 participants was conducted to determine the pool of questions. The 2021 survey elicited data on experiences and perceptions with learning and using Irish. 22 opinion-based questions relevant to this study were extracted from the larger questionnaire for analysis (see Appendix 6). Using the lavaan package (Rosseel, 2012) in the open-source statistical software package R Studio (RStudio Team, 2020) an exploratory factor analysis (EFA) was conducted. EFA assumes that unobserved or latent variables have a significant influence on the observed, measured variables (Watkins, 2020). EFA allows us to reduce these intercorrelated variables into a smaller number of dimensions or explanatory concepts. Using the data from the 499 responses, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.85 – over the recommended level of 0.6. Bartlett’s test of sphericity was also significant: $\chi^2(231) = 4019.01, p = <.001$.

In order to conduct the EFA, the number of factors needs to be determined in advance. This is achieved by performing a parallel analysis using the psych package (Revelle, 2020) in R Studio which produces a scree plot. The scree plot compares the eigenvalues – a measure of percentage of variance each latent factor contributes – between the actual data and multiple sets of random data. A generally accepted rule is that eigenvalues above the mean of the random data should be retained (Watkins, 2020). The scree plot revealed five factors (see Appendix 7). Using oblimin rotation and a minimum residual extraction, followed by a loading cut-off of 0.3, a five-factor model resulted in variables loading on multiple factors, indicating an

unsatisfactory identification of distinct dimensions. A four-factor model was analysed, and again, the factor analysis produced similar undesirable results. A three-factor model proved to produce the most satisfactory model for identifying and categorising the underlying variables, generating no cross-loadings (see Appendix 8). The three factors were labelled as: general confidence in Irish; school experiences; and attribution. Two questions related to census methodology were removed from any further analysis as they failed to load on to either of the three factors, leaving 20 latent variables.

Using the statistical package M Plus, version 8 (Muthén and Muthén, 2017), exploratory structural equation modelling (ESEM) was used to verify the factor structure identified by the EFA. Whereas confirmatory factor analysis (CFA) is one of the most widely used methods to examine the structure and test measurement model, by assuming that the observed variables are associated with targeted factors based on prior analysis or theory (Xiao et al., 2019), ESEM shares many characteristics of CFA, and represents a synergy between EFA and CFA methods (Tóth-Király et al., 2017). ESEM ultimately advocates a theory driven model specification which allows for all observed variables to load unforced onto all latent variables, thus bypassing issues such as model rejection due to non-significant secondary cross-loadings, an issue common in CFA (Marsh et al., 2013, Perry et al., 2015, Perry et al., 2021).

Using the three factors identified in the EFA and employing a robust maximum likelihood estimator, a number of decisions based on theory were taken. Firstly, the anxiety variable was grouped with the school experiences factor, as the question directly relates to school experiences. Secondly, all eight of the attribution questions were grouped together. The first model revealed ‘performed well due to abilities’ loaded negatively on its intended factor. This variable was removed. A similar result occurred for ‘anxiety’. Again, this was removed from the model. Following this, ‘performed well due to effort’ showed as having a low loading, and not loading onto the intended

factor. As such, this was removed. Finally, ‘performed bad due to abilities’ was removed for the same reason. The final model contained 15 items grouped by three factors. All items now loaded above 0.3 and all cross-loadings loaded substantively (above 0.3). The output of this model revealed a comparative fit index (CFI) of 0.92, TLI of 0.866, SRMR of 0.036, and a RMSEA of 0.077.

In an attempt to further improve the fit of the model, the modification indices were checked. All co-variances were within the same factors, demonstrating that the items were measuring the intended factors. The indices revealed that if co-variances were allowed to be shared across the variables, then the model would produce a much-improved fit (CFI 0.99, TLI 0.98, SRMR 0.022, RMSEA 0.029). However, a decision based on theory was taken not to manipulate the model any further to force an improved fit of the data. As the data is derived from a single sample group, constant modifications will eventually lead to improved fit, but render the model as sample-specific only (Perry et al., 2015), and not generalisable beyond the sampled 499 participants. The final set of 15 scale items is contained in the final test instrument at Appendix 9.

In addition, this post-phase 1 set of questions included a question on other second languages, and a question on engaging with technology to learn Irish, a factor which emerged from a previous study on Irish language self-efficacy (see Barry, 2020). Finally, the two Census questions removed during the EFA were included. The justification taken was that this instrument would be distributed a month after the 2022 Census, which included a new question in the Irish language section: ‘how well do you speak Irish?’. It was anticipated that having just engaged with the Census form for the first time in six years, participants may view the two Census methodology questions from a different point of view to that of the participants that provided the data in 2021.

All attitudinal and opinion questions in this study were presented in statement form and measured using a 5-point Likert scale (strongly

agree; agree; no opinion; disagree; strongly disagree). Any non-Census Irish ability questions were measured using the same 6-point Likert confidence scale described in the self-efficacy sub-scales outlined above.

5.10 Demographic and background information

The final outline of the survey is in table 5.4, below. At the beginning of the survey and test, participants were presented with an information sheet outlining the purpose of the study, requirements, data retention policies, anonymity, etc. followed by a consent page asking them to agree by pressing the “yes” button, which brought them to the start of the survey. If “no” was pressed, participants were brought to the end of survey message, thanking them for their participation.

Participants that consented were then asked to declare age category, gender, highest level of Irish examination, and when they last formally studied Irish. In order to avoid potential, initial over- or under-confidence biases in self-efficacy scale declarations (see Stone, 1994), participants were presented with the current Irish language Census question on ability and frequency of use that has been used since 1996. The 2022 extra question on ‘how well do you speak Irish?’ was also added. It was anticipated that this may provide some control over initial overconfidence by recalibrating individuals towards a self-assessment format with which they were most likely familiar. They were then asked a general, omnibus confidence question on general Irish abilities (‘How confident are you in your overall Irish language abilities?’), which was repeated at the very end of the survey for comparison.

Table 5.4 Final structure of the data collection instrument

Participant information
Consent
Demographic information

Self-efficacy sub-scales (grammar/ reading/ listening)
Phase 1 Irish proficiency test
Results: Auto-assignment into intervention or control groups
Attitudinal, opinion and experiential statements
Self-efficacy sub-scales presented a second time
Phase 2 Irish proficiency test
Results: actual results for all. Intervention procedure explained, with informed consent sought.
Final omnibus confidence question on general abilities

5.11 Piloting the instrument

5.11.1 First pilot: first revision

Once the survey and test were formatted within Qualtrics, a hidden timer was added to each set of questions, allowing the researcher to track where most time was being spent in the event that the instrument needed to be shortened. A number of randomly sampled participants from a previous study on memorising Irish nouns (see Barry, 2022) were emailed asking if they would like to participate in the pilot. These participants, who had not formally studied the Irish language since leaving school, were chosen as they had expressed in the previous survey that they were happy to participate in a future study. They were emailed a link to a version of the instrument where the manipulation procedure was not used. The purpose of the pilot was to determine the range of scores from participants, thus allowing the researcher to confirm the cut-off points for scores (see table 5.1) which determined the automated grouping into the experimental or control conditions.

The first two participants spent an average of over 1 hour on the instrument, well beyond the predicted 25 mins anticipated in the information sheet at the start of the survey. Further piloting was immediately paused due to the impractical length of time required to complete both phases. A number of approaches were considered, such

as removing every second item in each section, or removing some of the tested levels. The decision was taken to focus just on the levels that corresponded roughly to the Leaving Certificate – A2 and B1, thus removing any items which tested A1 and B2 abilities. However, this posed a problem for the listening section, where an earlier decision, taken to reduce burden, was made which saw both A and B levels combined into a single section. In consultation with the listening text writer, the A-level recordings were removed and the questions on the B-level recordings were altered to reflect A2 to B1 level. Two extra, A2 level questions were created for both recordings, and a B2 level question was removed. Furthermore, taking the advice from the expert panel on the A-level listening section, the two recordings were now divided into more manageable sections followed by the relevant MCQs. The grammar section was reduced to eight items per phase, removing A1 and B2 items. Similarly, the A1 and B2 reading texts and questions were removed. The test now comprised 40 items over both phases (20 parallel items). Finally, a visible timer was added to each section to control the amount of time spent on the phases. The eight MCQs in each grammar section were now presented as four items per page, with a 90 second countdown timer at the top of the page. The two reading texts in each phase now included a countdown timer of three minutes per reading. Both listening sections saw the addition of a countdown timer, giving six minutes to listen to the divided recording and answer the six MCQs.

Due to the reduction of items from the A1 and B2 levels, the self-efficacy sub-scales needed to be adjusted to reflect the new, reduced test content. The four scale items related to these levels in the grammar sub-scale were removed, leaving six items. The reading sub-scale saw three items removed, leaving four items. Two of these required rewording to reflect the context of the remaining reading texts. The listening sub-scale was reduced from nine to four items.

The participant information sheet and the section instructions were all adjusted to reflect the changes outlined.

5.11.2 Second pilot

The updated instrument was emailed to the remaining participants identified in the previous study mentioned above. A current *Gaelscoil* teacher, having expressed an interest, also took the test. All participants were informed that they were piloting a test and survey and would be given a score roughly reflecting their current abilities. The intervention was disabled for the pilot in order to verify unmanipulated performance over both phases. Over the course of a week, 15 participants undertook the second pilot. The majority of participants took a lot less time than the allotted time on each section, with an average score of 24 out of 40 (SD=7.0) on the full test. The average score on each phase suggested that the level of difficulty was similar on both sets of questions (phase 1: average score of 11.4 out of 20 (SD=3.7), phase 2: average score of 12.9 out of 20 (SD=3.6)). Based on this performance information, the manipulation was established as follows:

Table 5.5 Updated pre-determined group distribution by score range (out of 20)

	Manipulation groups		
Low control	Low	High	High control
0 - 4	5 - 10	11 - 15	16-20

Using the phase 1 median score of 10 out of 20, and the standard deviation (3.7) from the mean as a guide, the false results were established. Participants that now scored between 5 and 10 would be informed that they had scored 14 out of 20. Participants that scored between 11 and 15 would be informed that they scored 7 out of 20. Any scores between 0 and 4, and 16 and 20, would receive their actual results with no feedback. The Low group would receive false, inflated efficacy-raising feedback stating that they had performed better than 66.8% of all participants that had taken the test so far. The High group would receive false, negative, efficacy-lowering feedback stating they had performed worse than 66.8% of all participants so far. This wording replaced the initial use of ‘slightly better’ or ‘slightly worse’

as a means to remove ambiguity in interpretation, as well as provide peer comparative feedback that may affect strategy in phase 2 (see Tekian et al., 2017). The visible timers were removed, as some comments from the pilot mentioned the pressure it was putting them under, thus affecting strategy. The presence of the visible timers could potentially become a confounding variable, thus changing the nature of the study into one in which self-efficacy for coping becomes a factor. Finally, the self-efficacy question on confidence in overall Irish abilities was moved from after the revelation of the true nature of the study to just before this section, in an attempt to capture a truer, unaffected self-declaration of confidence following an Irish test. Feedback from the pilot confirmed face validity of the instrument, with participants stating that the format reminded them of the Leaving Certificate. The final, complete instrument administered is at Appendix 9.

5.12 Final instrument: participant recruitment

A random sampling approach was taken in this study, having achieved a degree of representativeness in a similar, previous study by this researcher (see Barry, 2021). Random sampling is desirable when researchers seek to generalise their findings to the wider population (Roever and Phakiti, 2018), but is also convenient when taken in the context of in-person meeting restrictions due to Covid-19. While a stratified random sampling, which ensures equal division of sub-groups, would have been the most efficient method for this research, identifying the Control, High and Low group members in advance would have been an impossibility; the test is bespoke to this study and not a standardised Irish test.

A poster was designed for social media (see Appendix 10), outlining the purpose and nature of the study, and communicated on a number of social media channels including Twitter, Facebook and Instagram. A link to the survey was also circulated in two large government departments with a combination of over 8,000 employees. Participation

and results were monitored during the first few days. A majority of participants were scoring in the high control range of results (16 or over), thereby potentially skewing representation. This was confirmed in comments from participants stating that they were teachers and had shared the instrument with colleagues, who in turn had done so themselves. A decision was taken to pay for a promoted tweet on Twitter which exposed 1,000 random users per day (with exposure criteria set for over 18 years of age and with a location as Ireland), for three days, to the instrument advertisement. The tweet itself was reworded to encourage those lacking in confidence. This approach appeared to redress the balance to some extent, with users liking and sharing amongst their own followers. The instrument remained open for two weeks only.

5.13 Conclusion

As has been outlined throughout this research, this study represents the first attempt at comprehensively recording, testing and manipulating Irish language self-efficacy beliefs and performance in individuals that have completed the Irish Leaving Certificate syllabus and examination. As has been explained, a number of practical decisions were taken, leading to a focus on testing passive language skills. This chapter has sought to further establish the research design already touched upon in the theoretical orientation section of the introductory chapter in this study, with an added discussion on the intervention procedure design and administration. As mentioned, the absence of previous research in the context of this study necessitated the development of an Irish language proficiency test and associated self-efficacy scale reflective of the ability level encountered at Leaving Certificate level. The expert panel review process for reducing test items was then outlined. The chapter also offered a theoretical and statistical methodology for determining the attitudinal questions for the survey aspect of the instrument. The chapter concluded with a review of the two instances of piloting of the test instrument, the result of which saw a further

reduction in items, and the methods for sampling. The next chapter will assess the results from the administered test instrument.

6. Results

6.1 Introduction

This chapter presents the results of the study, where a brief contextual explanation of findings will succeed each analysis conducted. The purpose is to prepare the reader for the discussion chapter in which the research questions will be addressed in full, along with other outcomes. The current chapter is laid out as follows: after an initial commentary on the final data set, and an overview of the sample group, the core aspect of the instrument – the Irish proficiency test – will be analysed from an item response theory perspective to determine its viability in assessing Irish language knowledge levels in participants. Once this has been established, the remainder of this chapter will present results in a sequential fashion, based on the order of the test instrument, beginning with the self-efficacy scale at phase 1. The scale will be analysed for reliability, and then used for a series of regression analyses on performance. Self-efficacy at phase 1 will then be compared with phase 1 omnibus measures of Irish abilities. A hierarchical regression analysis based on phase 1 data, employing self-efficacy and performance as the outcome variables, will be presented. The manipulation intervention will then be investigated in depth, focusing on three outcomes: performance; self-efficacy; and resource allocation. Phase 2 analysis will follow, beginning with a reliability analysis of the attitudinal scales, after which each attitudinal scale will be individually interrogated. The self-efficacy scales at phase 2 will be checked for reliability before a final hierarchical regression analysis is conducted for both experimental groups, with performance as the outcome variable. Finally, participant comments will be presented to add further qualitative commentary for the discussion chapter which follows.

6.2 The data set

6.2.1 Filtering the data

The cleaning of the output data from the survey results began with an initial 3,135 responses. Of these, a total of 1,501 participants completed both phases of the instrument, giving their full consent to be included in this study. However, the data provided by participants prior to dropping out at various stages were collected and used in a number of the analyses in this study. For example, over 2,600 participants provided a full set of data for phase 1 self-efficacy scores, thereby allowing for a larger sample size for conducting pre-test analyses such as reliability testing.

A range of assumptions are required to be met before carrying out a number of the statistical analyses necessitated by this research. Homoscedasticity – an assumption of classical statistical analyses such as regression and ANOVA – assumes equal variance of a variable across the range of values of a second, predictor variable. For example, as a person saves money and gets older, the amount of their savings should increase with their age. A violation of this assumption is referred to as heteroscedasticity and is usually attributable to outliers in the data (Crawley, 2014, Whelan, 2008). A solution for dealing with outliers is to either remove them from the dataset completely, or to transform the data, so that it compresses the data towards a more normal representation. Due to the unequal variance in the group subsamples used in this study, a number of the classical statistical test assumptions were violated including homoscedasticity and homogeneity of variance. The solution taken was to perform, when applicable, a variety of robust analyses, which includes methods such as bootstrapping and trimming means – all of which will be outlined in the relative sections below. This approach allows for the retention of the full dataset. Where a robust analysis has been performed, details on methods will be outlined where relevant.

6.2.2 Removing “true” outliers

For investigating outliers, the data from those that fully completed test 1 was used initially ($n=1,982$). The median time for completing the 20 Irish questions in phase 1 was just over 11 minutes, a figure in line with the pilot findings. However, the timings for test 1 ranged from 30 seconds to over 7,200 minutes, indicating outliers, most likely due to guessing or searching for answers on-line. Using the phase 1 listening test as an initial filter, 59 participants spent less than 90 seconds on this section. The three sub-recordings in this section are more than 90 seconds when combined, therefore indicating that these respondents did not listen to the full recordings, and likely guessed. These 59 responses were removed. Using the Median Absolute Deviation for identifying outliers on test 1 timing for the remaining 1,923 responses, a method more robust to outliers than using the mean, a further 244 high-value outliers were detected. These were responses that took over 32 minutes to complete the 20 questions. Removing these left 1,679 responses. With this new set of data, naturally a new set of outliers could be identified with a changed median. A decision was taken to retain this dataset for analysis.

The table below shows the number of participants that completed each relevant section, with outliers removed.

Table 6.1 Final number of participants by section

	Section	<i>n</i>
Phase 1	Self-efficacy (3 sub-scales)	2,602
	Test 1 (all 3 parts)	1,679
Phase 2	Attitudes and opinions	1,649
	Self-efficacy (3 sub-scales)	1,568
	Test 2 (all 3 parts)	1,501

6.2.3 Groups

An aim of this research was to attempt to establish a near equal number of participants in each of the four groups outlined in the manipulation

procedure in the methodology chapter. This would provide the most robust conditions for comparative analyses. However, as discussed in the previous chapter, the issue with Irish teachers sharing the instrument amongst themselves led to an over-representativeness of those at the higher end of Irish abilities. Only five respondents achieved a result that would have categorised them as Low Control, scoring between 0 and 4 out of 20 on phase 1. As a result, a single control group was used. Based on the 1,501 participants that completed the full instrument, thus allowing for the most consistent source of comparative data, the group sample sizes were as follows:

- Control group: $n=842$;
- High group: $n=484$;
- Low group: $n=175$.

6.3 Participants

In consideration of the forthcoming analyses, the demographic, education and Irish ability details of the 1,501 participants that completed both phases is presented in the tables below. Firstly, the gender representation imbalance should be noted, with over twice as many females as males. Furthermore, over half of the participants are aged 40 years or over.

Table 6.2 Gender and age frequency data with percentages in parentheses

	All N=1501	Control $n=842$	High $n=484$	Low $n=175$
<i>Gender</i>				
Male	476 (31.71)	247 (29.33)	162 (33.47)	67 (38.28)
Female	1021 (68.02)	594 (70.55)	320 (66.12)	107 (61.14)
Other	4 (0.27)	1 (0.12)	2 (0.41)	1 (0.57)
<i>Age</i>				
18 – 29 years	205	144	52	9

	(13.66)	(17.1)	(10.74)	(5.14)
30 – 39 years	281 (18.72)	158 (18.76)	83 (17.15)	40 (22.86)
40 – 49 years	455 (30.31)	240 (28.5)	161 (33.26)	54 (30.86)
50 – 64 years	497 (33.11)	259 (30.76)	172 (35.54)	66 (37.71)
65 years or over	63 (4.2)	41 (4.87)	16 (3.31)	6 (3.43)

In terms of education (see table 6.3, below), 72.7% of all participants have not studied Irish beyond the Leaving Certificate or equivalent, with 60% not having formally studied Irish in over 20 years. The ‘other’ category contained inputted answers such as training to be a barrister, FETAC exams, Ceard Teastas Gaeilge, etc.

Table 6.3 Irish education frequency data with percentages in parentheses

	All N=1501	Control n=842	High n=484	Low n=175
<i>Highest public exam taken in Irish</i>				
The Leaving Certificate or equivalent	1091 (72.68)	510 (60.57)	424 (87.6)	157 (89.71)
A level/AS/A2	20 (1.33)	10 (1.19)	6 (1.24)	4 (2.29)
University, college or third-level education full degree in Irish	41 (2.73)	37 (4.39)	4 (0.83)	-
University, college or third-level education subject only in Irish	76 (5.06)	66 (7.84)	9 (1.86)	1 (0.57)
Teacher training college	176 (11.73)	157 (18.65)	18 (3.72)	1 (0.57)
A part-time course with a certificate	38 (2.53)	28 (3.33)	7 (1.45)	3 (1.71)
Cannot recall	7 (0.47)	3 (0.46)	2 (0.41)	2 (1.14)
Other	52	31	14	7

	(3.46)	(3.68)	(2.89)	(4)
<i>The last time formally studying</i>				
<i>Irish</i>				
Less than 5 years	207 (13.79)	164 (19.48)	33 (6.82)	10 (5.71)
5 – 9 years	114 (7.59)	70 (8.31)	38 (7.85)	6 (3.43)
10 – 14 years	126 (8.39)	81 (9.62)	31 (6.4)	14 (8)
15 – 19 years	158 (10.53)	87 (10.33)	47 (9.71)	24 (13.71)
20 – 24 years	230 (15.32)	110 (13.06)	87 (17.98)	33 (18.86)
25 – 29 years	183 (12.19)	91 (10.81)	71 (14.67)	21 (12)
30 years or more	483 (32.18)	239 (28.38)	177 (36.57)	67 (38.29)

Participants were asked to indicate their Irish speaking abilities, using the Irish language question on the Census, ‘can you speak Irish?’. 1,116 participants (74%) self-declared as Irish speakers, with 385 (26%) as non-speakers of Irish. The Irish speakers comprised 344 male, 769 female, and 3 other participants. Using the follow-up Irish language question on frequency (see Figure 6.1, below, which is broken down based on group membership, to be outlined further below) – ‘how often do you speak Irish?’ – over half of Irish speakers stated that they use the language ‘less often’ or ‘never’, with 195 using the language daily in the education system, most likely in a teaching capacity.

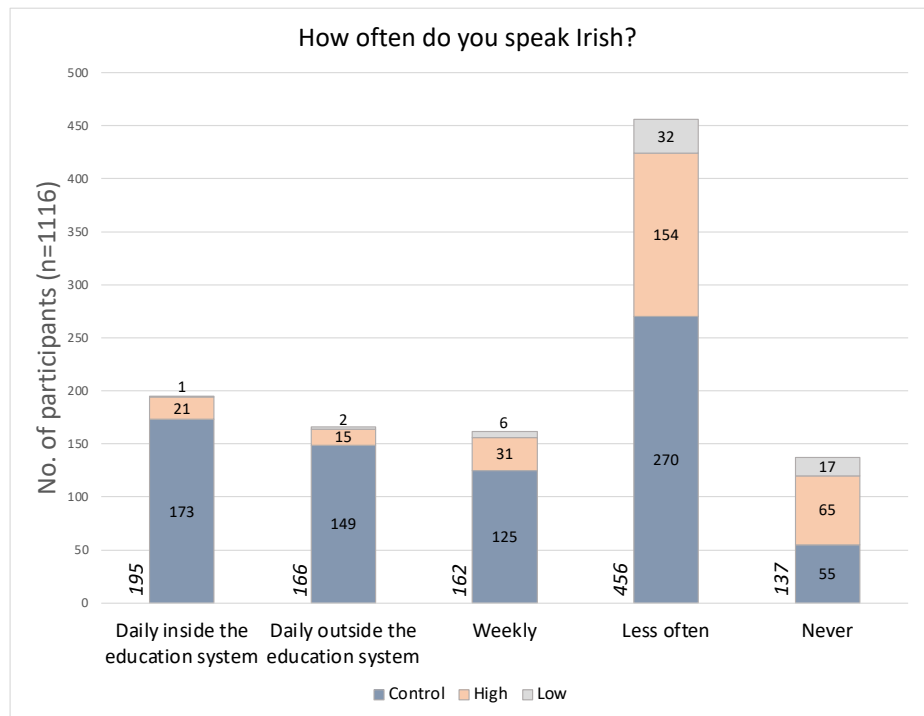


Figure 6.1 'How often do you speak Irish?'

Finally, the new Irish language question that first appeared in the 2022 Census – ‘How well do you speak Irish?’, was posed to the Irish speakers (see figure 6.2, below). 44% of Irish speakers opted for ‘not well’ to describe how well they could speak Irish.

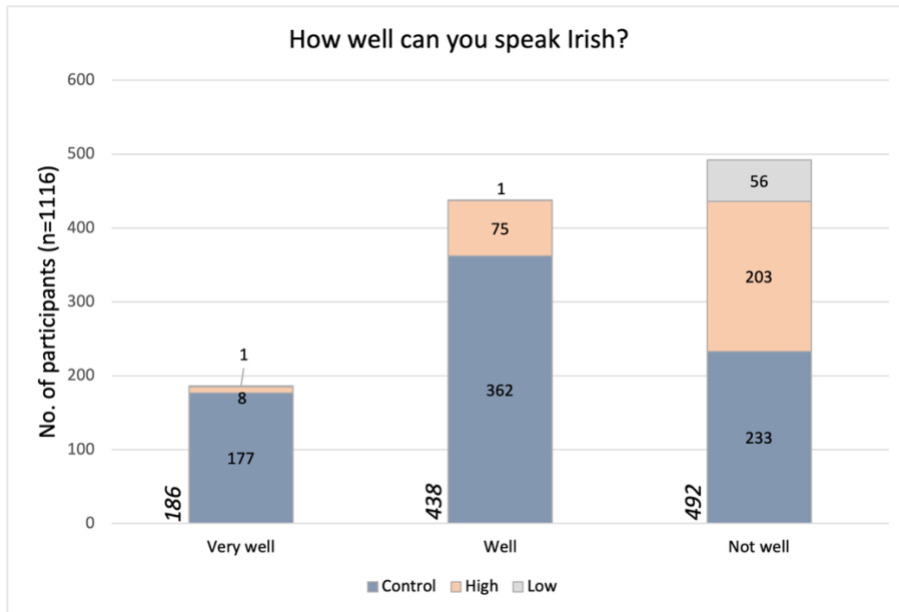


Figure 6.2 'How well can you speak Irish?'

6.4 The Irish test

The range of results are presented in figure 6.3, below. The red line represents the average number of participants. Over 50% of participants on phase 1 achieved 16 or over out of 20 marks. Almost 50% of participants on phase 2 achieved 17 or more out of 20. Based on raw scores alone and the negative skew, we can state that the test is not capturing a wide number of abilities. The ideal distribution would be a normal, bell-curve shaped with a clustering around the mid-point, i.e., 10 marks out of 20. Instead, the cluster is around 18 out of 20. As will become evident further in this analysis, the non-normality of data requires a number of statistical compromises.

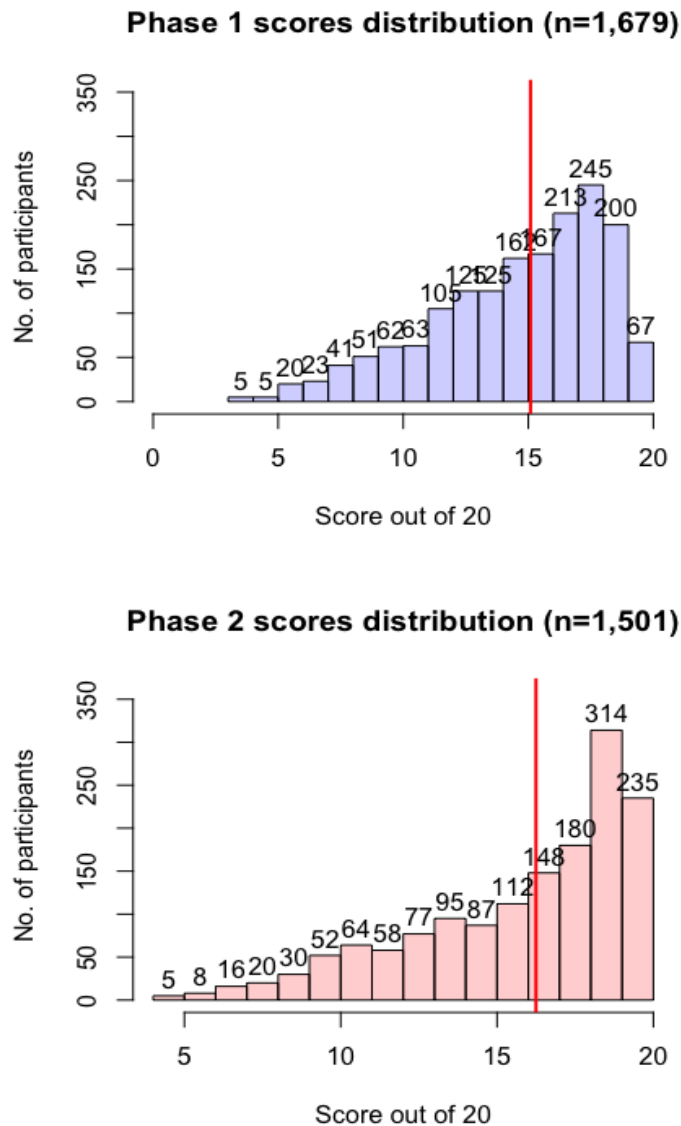


Figure 6.3 Histogram of scores on both phases with mean score denoted with red line

6.4.1 Item Response Theory

An essential aspect of the analysis in this study is based upon Irish test performance outcomes across phases. Utilising the full data set from phase 1 ($n=1,679$) and phase 2 ($n=1,501$), item response theory (IRT) was used to measure and explain the latent traits of the test, i.e., unobservable attributes such as ability, and their relationship with observed outcomes, in this case, results. IRT models can estimate both the difficulty of an item and the ability of the participant, evaluating these on the same scale (Hori et al., 2022). Whereas previous reliability

measures of test instruments such as classical test theory (CTT) measure the raw, total observed scores, thus making CTT models both sample and test dependent, IRT parameters are theoretically sample and item independent. In other words, a test item in IRT should have the same discrimination and difficulty characteristics regardless of who takes the test (Albano, 2018).

While many IRT models exist, the three most popular are the 1-, 2-, and 3-parameter logistic (PL) models. The 1PL model, also referred to as the Rasch model when the discrimination parameter is held constant (Rasch, 1960), describes a single parameter, item difficulty, by assessing how high the latent trait (ability) needs to be in order to have a 50% chance of getting the item correct. A limitation of this model is that items are assumed to generate the same shape for difficulty, which cannot be guaranteed for a general Irish language test covering varying abilities. The 2PL model also assess item difficulty, as well as item discrimination, i.e., how well the item discriminates between participants of different abilities. The 3PL adds a third parameter for determining which items are more likely to be guessed correctly. According to Baker and Kim (2017), with the 3PL model some of the logistic functions from the 2PL model are lost. Furthermore, the addition of a guessing parameter changes the definition of the difficulty parameters. The difficulty parameter represents an index of item appropriateness for examinees, generally ranging from -3 to +3 (although theoretically the range can be from negative to positive infinity), where a value of zero represents an average examinee. Difficulty values above -2 are regarded as very easy, whereas items between -1 and +1 are considered moderately difficult. For discrimination parameters, a high value means that the probability of correctly answering an item increases more quickly as ability increases. The following guide from Baker and Kim (2017) provides an interpretation of values used in the analysis that follows.

Table 6.4 Item response theory item discrimination values guide

Discrimination level	Range of values
None	0
Very low	0.01-0.34
Low	0.35-0.64
Moderate	0.65-1.34
High	1.35-1.69
Very high	>1.70
Perfect	+ ∞

Choosing an appropriate IRT model should be based on theory and practicality. An ANOVA was carried out on the 2PL and 1PL models for each of the sections analysed with the majority of results demonstrating superior fit indices for the 2PL model. All Akaike's Information Criterion (AIC) were lower for the 2PL models. Apart from the phase 1 grammar and phase 2 listening, all Bayesian Information Criterion (BIC) indices were lower for the 2PL models. As a result, and for ease and consistency of interpretation, and the avoidance of convergence issues associated with 3PL modelling (see Waller, 1989), the 2PL model was used to assess the three sub-sections of both tests – grammar, reading, and listening. All analyses were conducted using the *r* packages *mirt* (Chalmers, 2012) and *ltm* (Rizopoulos, 2007).

Table 6.5 1PL and 2PL model AIC and BIC comparisons

Test	Model	AIC	BIC
Phase 1			
Grammar	1PL	13968.39	14017.23
	2PL	13952.22	14039.03
Reading	1PL	8984.22	9022.2
	2PL	8299.79	8364.9
Listening	1PL	8780.06	8818.05
	2PL	8715.36	8780.47

Phase 2

Grammar	1PL	10063.60	10111.42
	2PL	9977.93	10062.95
Reading	1PL	8315.74	8352.94
	2PL	8257.22	8320.99
Listening	1PL	5766.27	5803.46
	2PL	5765.37	5829.14

6.4.2 Grammar sub-test: Phase 1

The mean score for the 1,679 participants that completed the phase 1 grammar test was 5.56 marks out of 8 (SD=2.09, Skew =-.55, Kurtosis =-.73). The 8-item phase 1 grammar test analysis is presented both visually and, on an item-by-item basis (MCQ 1 is referred to as G1 and so on). Figure 6.4 below provides the test information function (TIF) graph on the right, representing the sum of the individual item characteristic curves (ICC) seen in the graph on the left. The ICCs can be interpreted as follows: items whose slopes are furthest to the right are regarded as the most difficult and vice-versa; and items with spread out slopes, as opposed to steep slopes, are less discriminate between abilities. The ICC y-axis, ‘probability’, is the probability that a participant will answer correctly. The x-axis represents the participant’s Irish language ability.

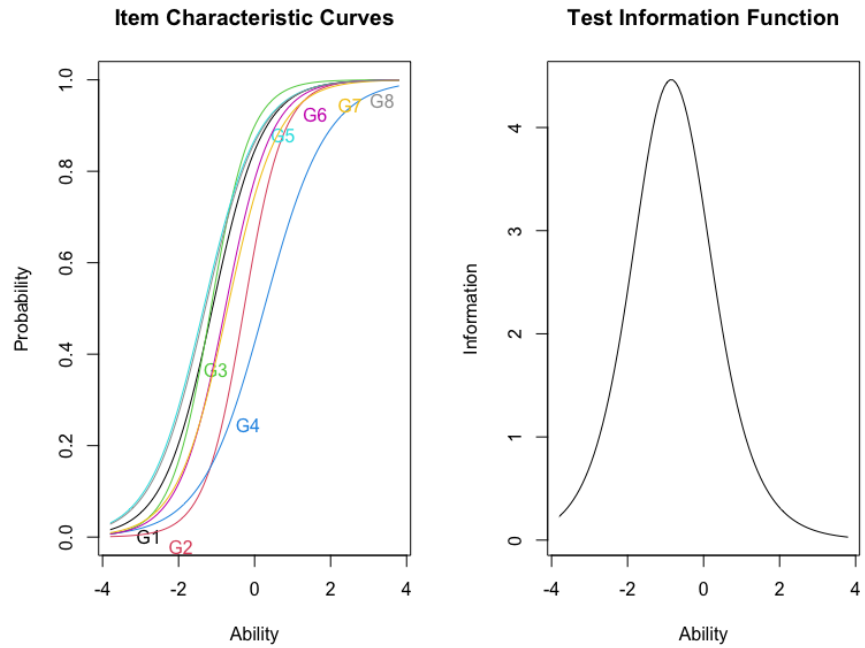


Figure 6.4 Grammar test, phase 1: ICCs and TIF

The TIF slope peak is skewed to the left of the zero point of the x-axis, thereby meaning that the combined eight items are providing more information in measuring slightly below-average abilities in Irish grammar. The left graph shows that item G4 was the most difficult due to the steepness of its slope and position on the graph. When the item is isolated (see figure 6.5 below), a difficulty parameter of 0.25 is evident where the probability axis is intersected at the 0.5 point (the ideal value representing a 50% chance of getting item correct or incorrect). The discrimination parameter, represented by the maximum steepness of the curve is 1.21, as denoted by the blue dot on the curve.

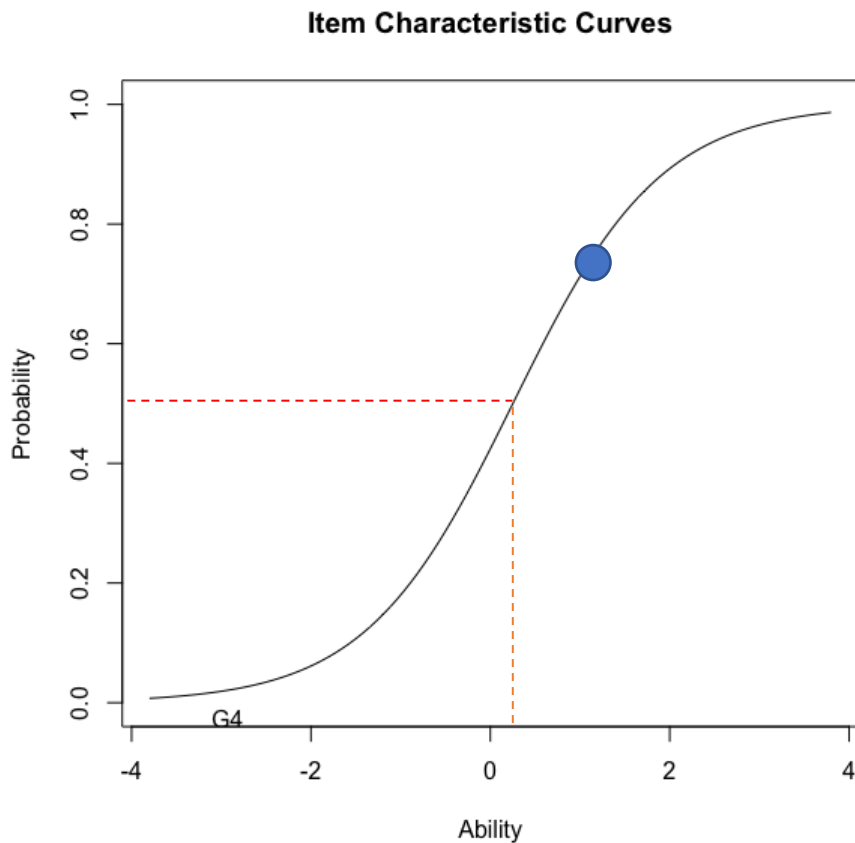


Figure 6.5 ICC for item G4 of grammar test, phase 1

Table 6.6 below represents the coefficients of the 2PL model used to visualise the graphs above and includes the mean results for getting the item correct, with zero being incorrect and one being correct. Starting with difficulty, and confirming the visual representation, it is evident that only one item can be considered difficult for participants: item G4, as all other items are less than zero - which represents average ability. Item G4 is below (the first option is correct, translating as ‘the shoes I bought don’t fit’). 736 participants (44%) got the item correct.

- Níl na **bróga** a cheannaigh mé oiriúnach
- Níl na **bhróg** a cheannaigh mé oiriúnach
- Níl na **bhróga** a cheannaigh mé oiriúnach

Items G1, 3, 5, and 8, which are all over one standard deviation from zero in the difficulty column, can be regarded as the easiest items. These items also have the largest means. According to the discrimination coefficients from this model, all items are between moderate and very high, thereby more than acceptable in discriminating between abilities.

Table 6.6 Coefficients for grammar test, phase 1

Item	Mean	SD	Difficulty	Discrimination
G1	0.77	0.42	-1.11	1.53
G2	0.58	0.49	-0.28	1.93
G3	0.80	0.40	-1.15	1.90
G4	0.44	0.50	0.25	1.21
G5	0.80	0.40	-1.34	1.41
G6	0.70	0.46	-0.77	1.65
G7	0.68	0.47	-0.71	1.51
G8	0.80	0.40	-1.30	1.41

When the factor scores are analysed for someone getting all items incorrect and all items correct, we can see the output in table 6.7 below. Factor scores represent response patterns for combinations of answers for all participants compared with expected patterns of responses. Line 1 of the factor score output shows 8 out of 1,679 observations (obs) of participants getting all items incorrect, whereas the expectancy (exp) of this occurring based on the model is actually 30 participants, thus suggesting that more people are doing better than expected. Line 211 of the factor score output shows the most common response sequence, with 393 participants getting all items correct, 43 above the expectation suggested by the model. The z-score (z1) represent the ability level for that particular response pattern. Therefore, participants getting all items incorrect have a z-score of -1.98, almost 2 standard deviations below average ability, whereas participants getting all items correct are almost

one standard deviation above average. This suggests an imbalance in ability levels taking this test.

Table 6.7 Factor scores for grammar test, phase 1 - first and final lines

Line	G1	G2	G3	G4	G5	G6	G7	G8	Obs	Exp	z1	se.z1
1	0	0	0	0	0	0	0	0	8	30	-1.98	0.54
211	1	1	1	1	1	1	1	1	393	350	0.96	0.67

6.4.3 Reading sub-test: Phase 1

Average performance on the reading test, phase 1 was 4.68 out of 6 (SD=.98, Skew=-.88, Kurtosis=1.24, $n=1,679$). The reading test comprised two short texts comprising three questions each. The ICC of R4 is immediately noticeable from the graph below. The item itself is a question based on a brief notice for rented accommodation, from which the discriminators in the three answer options have nuances in the wording – the most popular answer, which was incorrect, translates as ‘the apartment is not yet rented’. The text itself states the apartment is available from September – an implied future time, therefore requiring an inferred interpretation. Only 38% of participants got this item correct. The difficulty parameter in table 6.8, further below, shows an extreme value of 17.88, with a discrimination parameter that is almost non-existent (0.03). Difficulty parameters are highly influenced by the slope of the estimated item. In this case the curve has a very small slope, which suggests that the probability of getting an item correct changes slowly over the full range of examinee abilities (Baker and Kim, 2017). In summary, this item should be removed.

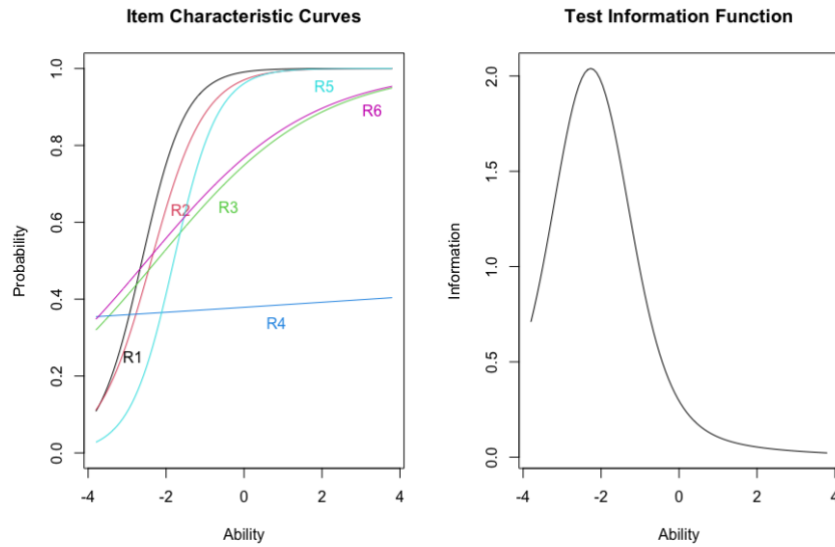


Figure 6.6 Reading test, phase 1: ICCs and TIF

Table 6.8 Coefficients for reading test, phase 1

Item	Mean	SD	Difficulty	Discrimination
R1	0.97	0.18	-2.62	1.79
R2	0.94	0.25	-2.40	1.46
R3	0.74	0.44	-2.24	0.49
R4	0.38	0.49	17.88	0.03
R5	0.90	0.30	-1.80	1.78
R6	0.76	0.43	-2.49	0.48

All other items have large negative difficulty parameter values, suggesting that the items are not difficult enough for the average examinee. Table 6.8 above shows that the mean for three items is close to one, indicating that most participants got these correct. Three items have a high or very high discrimination value, and three have low to very low values. In figure 6.6, the skew in the TIF graph on the right confirms that the reading test is only effectual in measuring the abilities of below average ability participants. The factor scores revealed that to get all items correct, abilities are less than half a standard deviation above average. In summary, the phase 1 reading test does not represent

a robust measure of reading abilities for the candidates that took this test.

6.4.4 Listening sub-test: Phase 1

The listening test comprised one recording split in three parts, with six questions. The average result was 4.85 out of 6 (SD=1.31, Skew=-1.1, Kurtosis=0.59, $n=1,679$). The figure and table below show that the difficulty for all items is below average abilities. Items L2, 3, 4 and 5 have the lowest difficulty parameter values, with L3, 4 and 5 having the highest mean values. However, most items have a high or very high discrimination value, meaning that as ability of participant increases then the chance of getting the item correct also increases. The TIF shows that the test functions most effectually at below average listening abilities. The factor scores for getting all items correct was only half a standard deviation above average ability. Again, this test does not provide an effectual measure of listening abilities for those that took the test.

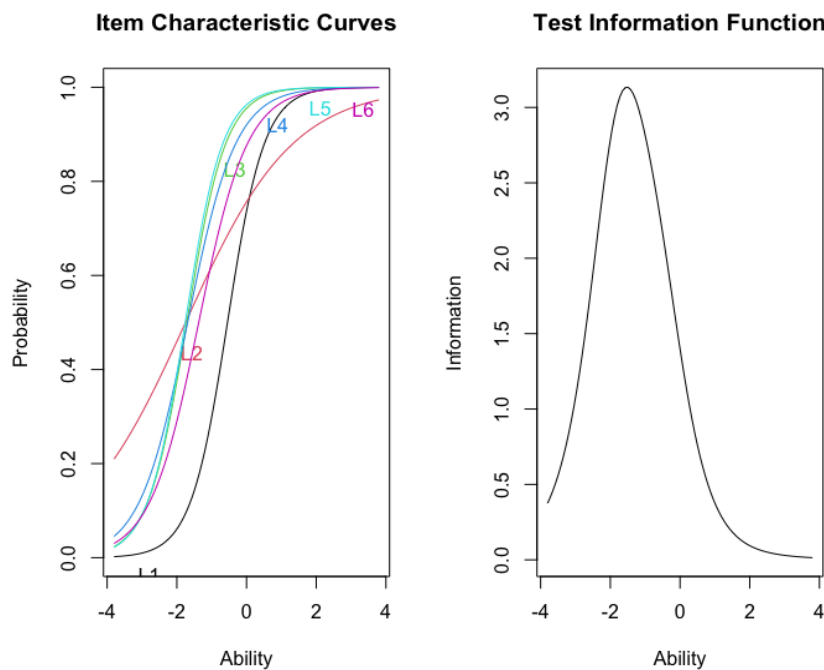


Figure 6.7 Listening test, phase 1: ICCs and TIF

Table 6.9 Coefficients for listening test, phase 1

Item	Mean	SD	Difficulty	Discrimination
L1	0.66	0.48	-0.55	1.88
L2	0.74	0.44	-1.75	0.65
L3	0.89	0.31	-1.71	1.79
L4	0.86	0.35	-1.69	1.44
L5	0.90	0.30	-1.76	1.85
L6	0.81	0.39	-1.37	1.43

In summary, aside from the 8-item grammar section, whose TIF is closest to measuring average abilities, the phase 1 test appears to function most efficiently at measuring below average abilities, with the reading test providing the most issues. This explains the large membership of the control group and should be taken into account in interpreting further findings in this analysis. The phase 2 test was also analysed, considering the implications for further analyses using test data across phases. A total of 1,501 participants completed the three sections of the phase 2 test.

6.4.5 Grammar sub-test: Phase 2

For the 1,501 participants that completed the grammar, phase 2 test, the average result was 5.85 out of 8 (SD=2.51, Skew=-1.1, Kurtosis=.06). All eight items are below average difficulty, with most mean values close to getting the item correct. The TIF in figure 6.8 below is skewed to the left, indicating that the combined ICCs are all below average ability.

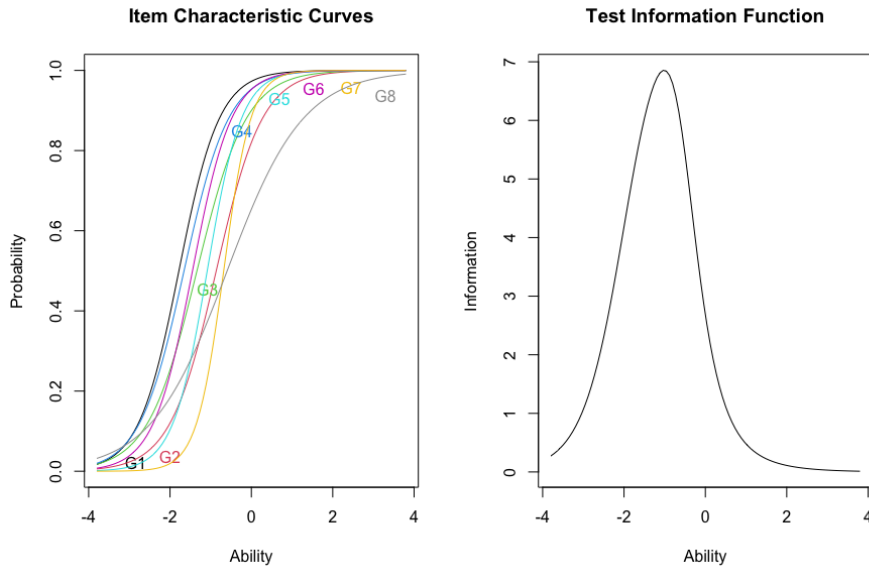


Figure 6.8 Grammar test, phase 2: ICCs and TIF

Aside from one moderate discrimination value in item G8 in table 6.10 below, all others are high to very high in their ability to discriminate abilities. The ability imbalance was evident in the factor scores, where those getting all items correct are just over half a standard deviation above average ability.

Table 6.10 Coefficients for grammar test, phase 2

Item	Mean	SD	Difficulty	Discrimination
G1	0.91	0.29	-1.78	2.01
G2	0.73	0.45	-0.86	1.75
G3	0.82	0.38	-1.34	1.64
G4	0.88	0.32	-1.66	1.82
G5	0.80	0.40	-1.09	2.36
G6	0.86	0.34	-1.45	2.07
G7	0.71	0.45	-0.68	2.99
G8	0.62	0.48	-0.60	1.06

6.4.6 Reading sub-test: Phase 2

The average result for the reading test was 4.19 out of 6 (SD=1.78, Skew=-1.1, Kurtosis=.39, $n=1,501$). Although discrimination parameter values range from moderate to very high, no item is close to the average ability level; all items are negative (see table 6.11 below). The TIF in figure 6.9 further proves this, in showing how the test functions most appropriately at measuring examinees with quite low abilities in Irish reading. The factor scores showed that the actual number of those getting all items correct ($n=430$) was higher than the expected level ($n=412$), with the z-score at 0.63 standard deviations above average level.

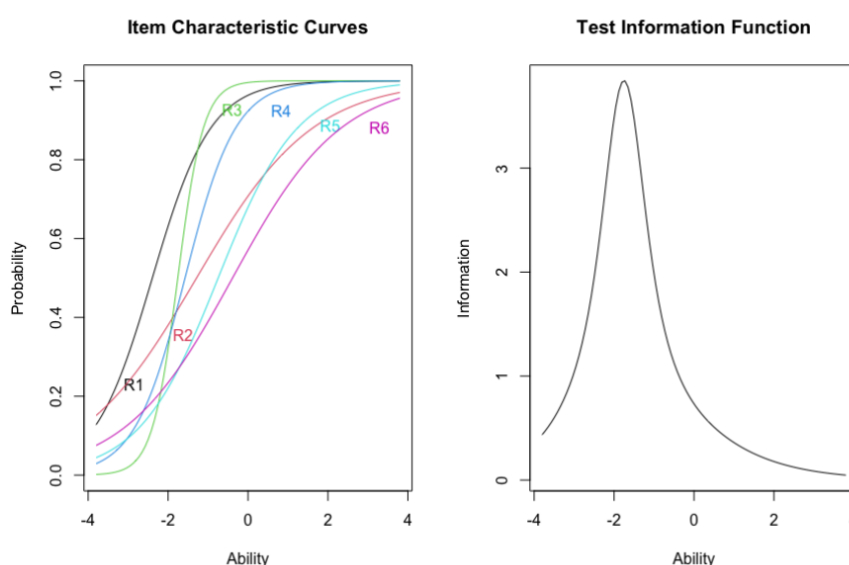


Figure 6.9 Reading test, phase 2: ICCs and TIF

Table 6.11 Coefficients for reading test, phase 2

Item	Mean	SD	Difficulty	Discrimination
R1	0.93	0.26	-2.39	1.37
R2	0.69	0.46	-1.29	0.69
R3	0.94	0.24	-1.76	3.12
R4	0.86	0.35	-1.58	1.58
R5	0.65	0.34	-0.75	1.00
R6	0.56	0.50	-0.39	0.73

6.4.7 Listening sub-test: Phase 2

The phase 2 listening test comprised another single recording split in three parts, with six questions. The average result was 4.72 out of 6 (SD=1.92, Skew=-1.57, Kurtosis=1.22, $n=1,501$). The final part of the test, with all difficulty values below the zero point that represents average ability, with items L1 and L6 proving the easiest with the highest means. All items range from high to very high when it comes to discriminating abilities. 894 participants got all six items correct – only 0.36 standard deviations above average ability in Irish listening.

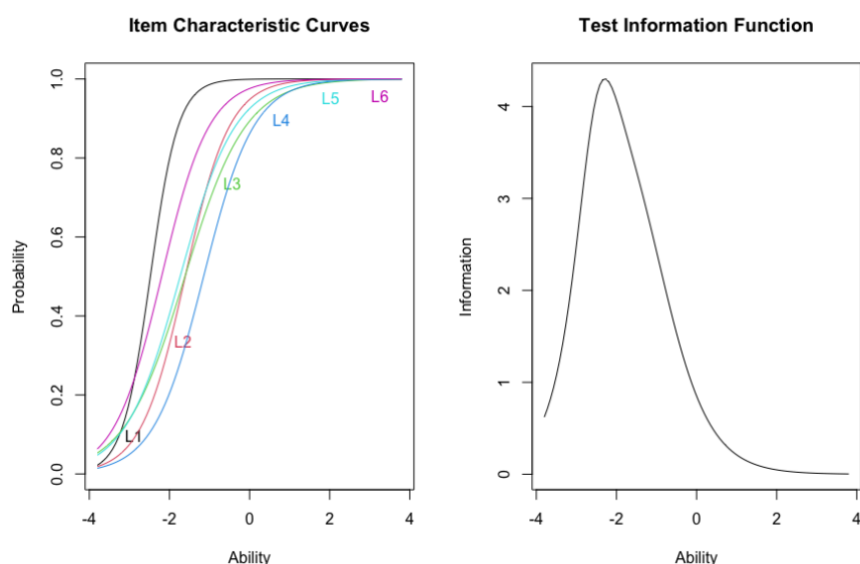


Figure 6.10 Listening test, phase 2: ICCs and TIF

Table 6.12 Coefficients for listening test, phase 2

Item	Mean	SD	Difficulty	Discrimination
L1	0.98	0.13	-2.48	2.87
L2	0.88	0.33	-1.61	1.81
L3	0.84	0.37	-1.61	1.32
L4	0.78	0.41	-1.15	1.59
L5	0.87	0.34	-1.73	1.45
L6	0.93	0.25	-2.20	1.68

In conclusion of this test analysis using IRT, both phases appear to function effectually only at measuring below average abilities. In other words, the tests are too easy for the sample groups at each phase. The uncontrolled random sampling procedure, while successful at achieving a larger sample size, means that an intended, target sample group, i.e., those that are lacking in Irish language confidence and haven't used the language since their school days, are underrepresented. This analysis underscores that the overly represented high performers in this test are having a profound influence on the results. The skewed TIFs, highlighted factor scores, and large number of observations getting all items correct only emphasise this. Therefore, it is important to keep this high-performer effect in mind when interpreting further results in this chapter, particularly when it comes to measuring intervention effects, as will be discussed further below.

6.5 Self-efficacy

In order to investigate the widely assumed hypothesis that self-efficacy is a better predictor of performance behaviour than actual abilities (see Bandura, 2012), the following section assesses the predictive nature of self-efficacy at the pre-manipulation stage. The phase 1 full, three-section self-efficacy scale is assessed for reliability before investigating via various regression analyses, the validity of self-efficacy as a predictor of performance outcomes at phase 1. The self-efficacy composite score, comprising the average score of the three scales (out of a possible score of six) and the performance outcome, i.e., score out of 20 was investigated, followed by each sub-scale and its respective sub-test. Through hierarchical linear regression, models will be built with other variables such as gender, age, educational background, etc., in order to determine their predictive contribution towards performance on an Irish language test. All phase 1 regression analyses were conducted using SPSS version 28 (IBM Corp., 2021) with the subsample of participants that completed phase 1 ($n=1,679$).

6.5.1 Phase 1: Scale reliability

The self-efficacy scale was checked for reliability on both phases using Cronbach's alpha (1951) and McDonald's omega (1999). The alpha measure (α) is influenced by the strength of inter-correlation of questionnaire items, reflecting how well items measure the same attribute (Roever and Phakiti, 2018). At phase 1 ($n=2,602$), the 6-item grammar self-efficacy subscale ($\alpha = .96$), 4-item reading sub-scale ($\alpha = .98$), and 4-item listening sub-scale ($\alpha = .98$) resulted in a highly reliable phase 1 self-efficacy scale alpha of .98 for the combined 14 items.

McDonald's omega provides a more robust measure of reliability which avoids some of the issues associated with alpha including assumption violations, biases, and estimation variability (see Dunn et al., 2014, Trizano-Hermosilla and Alvarado, 2016). The omega is represented by ω coefficients, which estimates reliability from a factor analysis perspective. Omega corrects for underestimations of α bias when the tau-equivalence assumption is violated (Dunn et al., 2014). Tau-equivalence assumes that all scale items have the same relationship with the underlying construct (Cho, 2016). Using the psych package (Revelle, 2020) in R, two factors were manipulated in the analysis due to factor loading issues with the default three-factor model. The output produced errors for each factor, suggesting re-running the analysis with a different factor estimation, for which two factors solved the error outputs. At phase 1 ($n=2,602$), the grammar scale ($\omega = .97$), reading scale ($\omega = .98$) and listening scale ($\omega = .99$) resulted in a highly reliable omega of .99 for the full 14 items.

6.5.2 Phase 1: Self-efficacy and performance

In order to determine the predictive nature of self-efficacy on performance, a linear regression model was created. This regression model predicts conditional means – means which alter dependent upon the value of another variable (Gries, 2013). In this case, how

performance at phase 1 is affected by declarations of self-efficacy at phase 1 ($n=1,679$). A linear regression model assumes the following equation: $Y = a + bX$, where X is the explanatory variable (self-efficacy) and Y is the dependent variable (results on phase 1). The slope of the line is b , and a is the intercept (the value of y (results) when x (self-efficacy) = 0). A scatterplot of the data with a regression line is at figure 6.11, below.

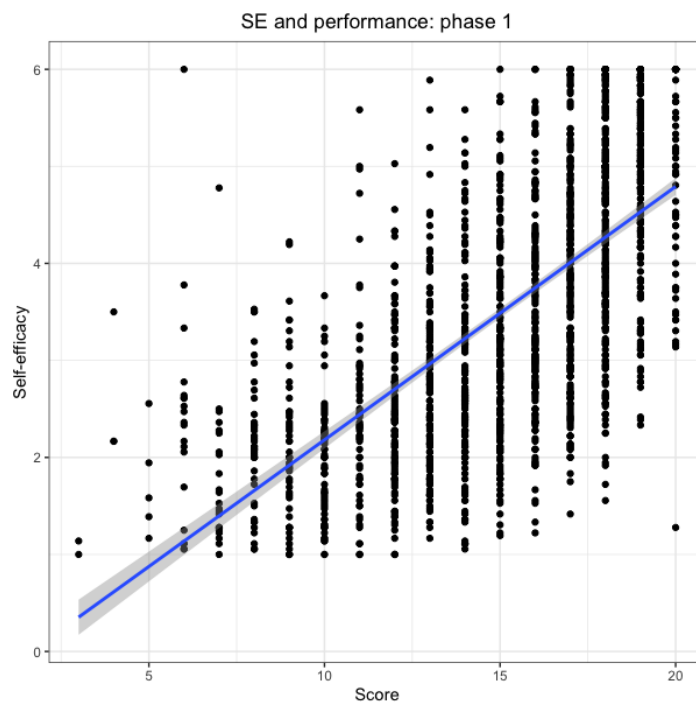


Figure 6.11 Scatterplot of self-efficacy and test performance, phase 1

The plot above shows that there is a linear and additive relationship between performance and the predictor, self-efficacy. However, the goodness of fit of the regression model assumes a number of conditions. A regression model produces residuals – the difference between the actual data and the predicted data, known as an error term. Equal variance of these residuals is an assumption known as homoscedasticity. The plot in figure 6.12 below shows the fitted values, representing the predicted values based on the actual data, and the residuals, representing what remains after fitting a model, from the regression model. Homoscedasticity is usually evidenced by a cone-

shaped distribution of values getting larger and fanning out as it moves from left to right, and a straight line that follows the zero value on the y-axis. The red line below begins below the zero value, slopes upwards, before falling towards zero. A Breusch-Pagan test confirmed the violation, with a p -value of $<.001$ indicating that the null hypothesis of homoscedasticity was rejected.

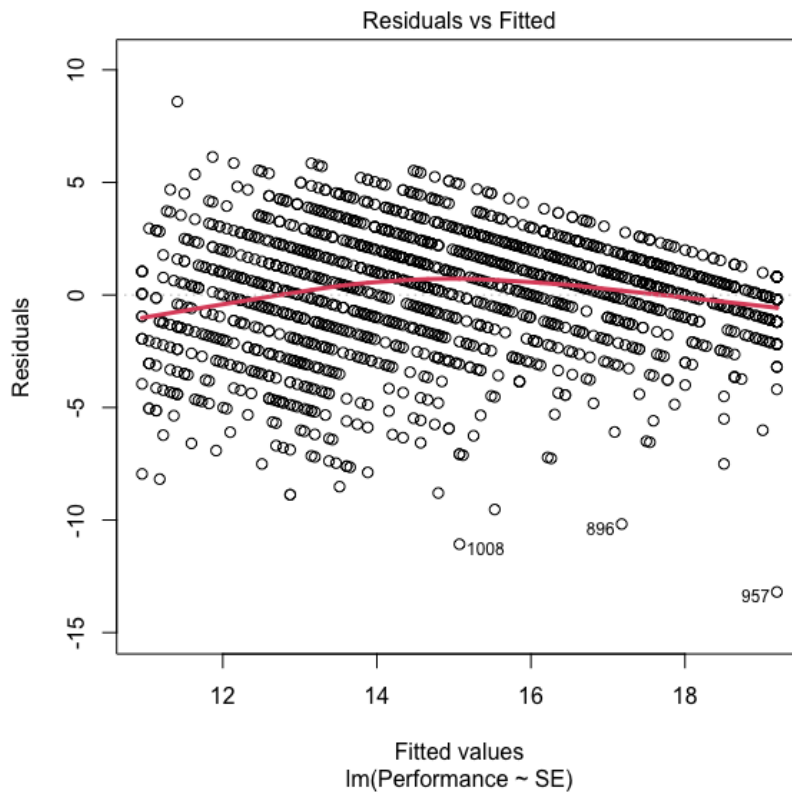


Figure 6.12 Fitted and residual values for self-efficacy and test performance, phase 1

Data was transformed using log-transformation and then with Box-Cox transformation, as well as identifying and removing outliers. The model was re-run following each transformation and removal of outliers, with the homoscedasticity assumption continuing to be violated. As a result, a non-parametric, robust linear regression was used by employing bootstrapping. Bootstrapping is an inferential method that resamples the original dataset, thus creating simulated samples, each with its own measures of dispersion (Efron and Tibshirani, 1994). The number of simulations, or bootstrapped replicates, depends entirely on the context of the study, sample size,

and the processing power of the device carrying out the analysis. Wilcox (2010, p.155) states that ‘599 [replicates] is recommended for general use’. Thanks to the large sample size in this study and the processing power of a modern computer, 2,000 simulations have been applied in any instance where bootstrapping occurs.

Using bootstrapping in SPSS, a robust linear regression was carried out to investigate the relationship between self-efficacy and performance at phase 1 of this study. A Pearson’s correlation coefficient of 0.66 indicated a moderate, positive relationship between the two variables. Note: for interpretation of Pearson’s correlation coefficient in this study, see Roever and Phakiti (2018). The regression model showed a statistically significant relationship between self-efficacy and performance ($F(1,1677) = 1262.96, p < .001$). The slope coefficient ($B = 1.65, 95\% \text{ CI}[1.56, 1.75]$) indicated that performance increases by 1.65 marks out of 20 each time the self-efficacy composite score increases by 1 (out of a max of 6). The R^2 indicated that 43% of the variation in performance scores can be explained by self-efficacy. The significance of this results encourages an analysis of each self-efficacy subscale and relative sub-test on phase 1.

6.5.3 Phase 1: Grammar self-efficacy and performance

The scatterplot below shows a linear, additive relationship between grammar self-efficacy (6-item scale) and performance on the 8-item grammar test section in phase 1. Due to the violation of linear regression assumptions, a bootstrapped regression was performed.

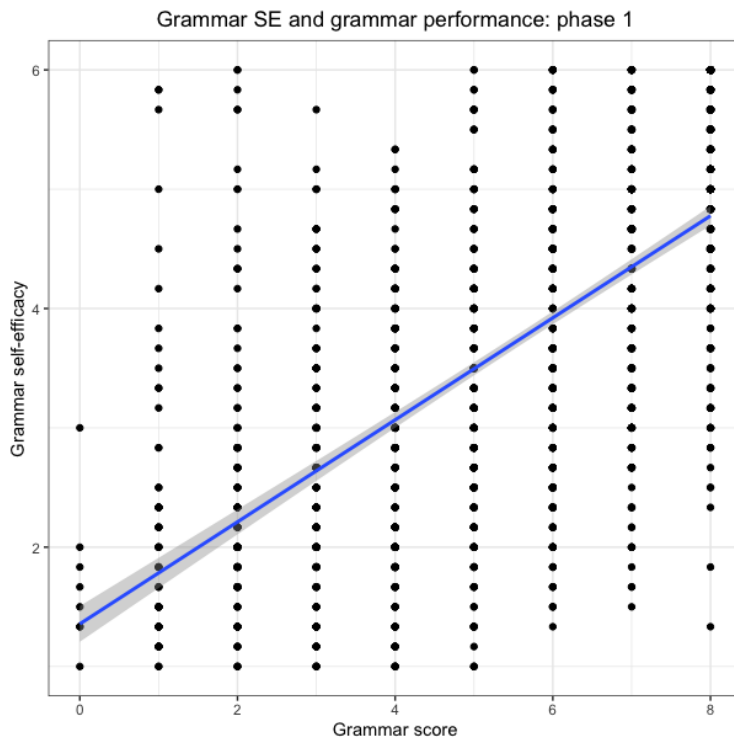


Figure 6.13 Scatterplot of grammar self-efficacy and grammar test performance, phase 1

A Pearson’s correlation coefficient of 0.63 indicated a moderate, positive relationship between the two variables. Employing 2,000 bootstrapped samples, the regression model showed a significant relationship between grammar self-efficacy and grammar performance ($F(1,1677) = 1110.86, p < .001$). The slope coefficient ($B = .93, 95\% \text{ CI} [.88, .98]$) indicated that grammar performance increases by .93 marks out of 8 each time the grammar self-efficacy composite score increases by 1 (out of a max of 6). The R^2 indicated that 40% of the variation in grammar performance scores can be explained by grammar self-efficacy.

6.5.4 Phase 1: Reading self-efficacy and performance

The scatterplot in figure 6.14 below shows a linear, additive relationship between reading self-efficacy (4 item scale) and performance on the 6-item reading test section in phase 1. Due to the violation of linear regression assumptions, a bootstrapped regression was performed.

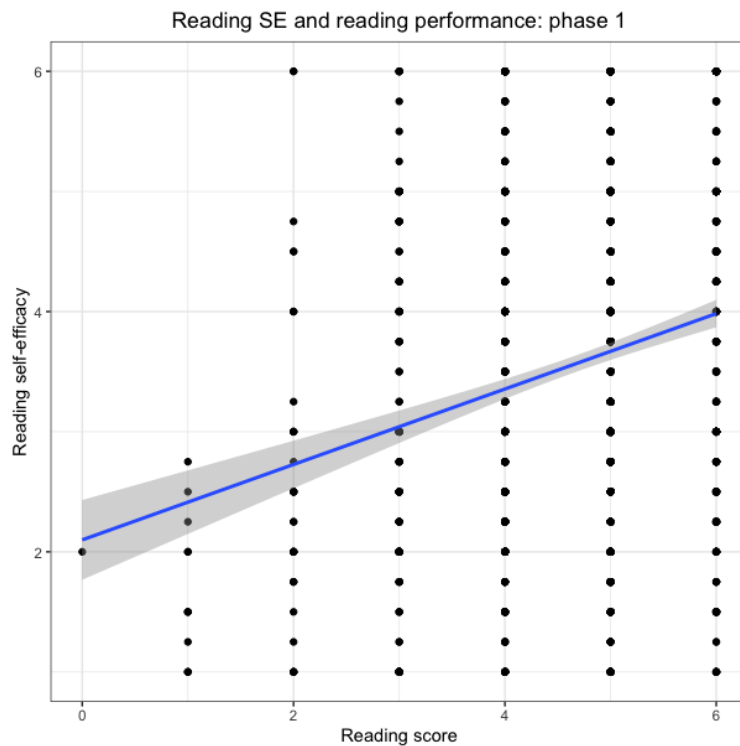


Figure 6.14 Scatterplot of reading self-efficacy and reading test performance, phase 1

A Pearson’s correlation coefficient of 0.21 indicated a weak but positive relationship between the two variables. Employing 2,000 bootstrapped samples, the regression model showed a significant relationship between reading self-efficacy and reading performance ($F(1,1677) = 86.3, p < .001$). The slope coefficient ($B = .15, 95\% \text{ CI} [.12, .18]$) indicated that performance increases by .15 marks out of 6 each time the grammar self-efficacy score increases by 1 (out of a max of 6). The R^2 indicated that only 5% of the variation in reading performance scores can be explained by reading self-efficacy, suggesting that the self-efficacy reading sub-scale is not an accurate predictor of reading performance.

6.5.5 Phase 1: Listening self-efficacy and performance

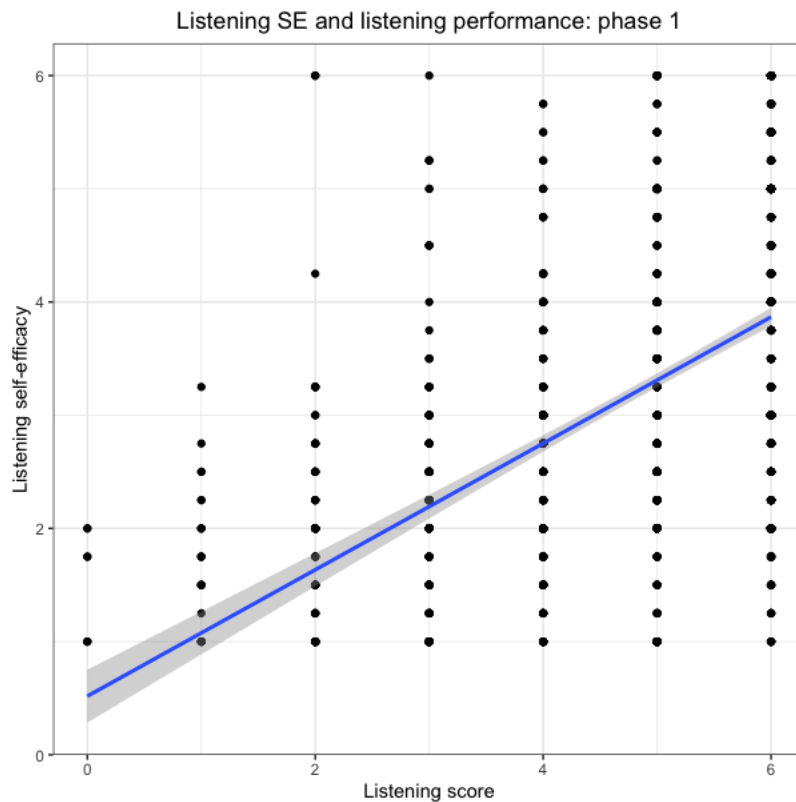


Figure 6.15 Scatterplot of listening self-efficacy and listening test performance, phase 1

The scatterplot above shows a linear, additive relationship between listening self-efficacy (4 item scale) and performance on the 6-item listening test section in phase 1. Due to the violation of linear regression assumptions, a bootstrapped regression was performed. A Pearson's correlation coefficient of 0.5 indicated a moderate, positive relationship between the two variables. Employing 2,000 bootstrapped samples, the regression model showed a significant relationship between listening self-efficacy and listening performance ($F(1,1677) = 742.31, p < .001$). The slope coefficient ($B = .45, 95\% \text{ CI} [.42, .49]$) indicated that performance increases by .45 marks out of 6 each time the listening self-efficacy score increases by 1 (out of a max of 6). The R^2 indicated that 25% of the variation in listening performance scores can be explained by listening self-efficacy.

6.5.6 Phase 1: Self-efficacy and omnibus measures

To determine the accuracy of self-efficacy as a measure of performance versus a single, omnibus question of ability or confidence, a number of outcomes at phase 1 ($n=1,679$) were analysed using Pearson's correlation coefficient. For the omnibus measure in table 6.13 below, participants were asked (before the self-efficacy scale section) 'how confident are you in your overall Irish skills (reading, writing, speaking & listening)?' and provided with a 6-point Likert scale from 'no confidence' to 'complete confidence'. Note: this variable is referred to as 'global confidence' for the remainder of this chapter.

Table 6.13 below shows that there is a strong, positive relationship between a single, omnibus score of global confidence and performance at phase 1, $r(1677)=.61$, $p<.001$. An even stronger, positive relationship is shown between performance and the self-efficacy composite score, $r(1677)=.66$, $p<.001$. The self-efficacy composite score and the omnibus question have a very strong, positive relationship, $r(1677)=.85$, $p<.001$. These results show that both self-efficacy and a single questions on confidence in abilities have a similar relationship with performance.

The weakest correlations occur with performance on the reading test section in phase 1. Self-efficacy in reading and performance in the reading section demonstrate a weak, positive relationship, $r(1677)=.22$, $p<.001$. Whereas the relationship between grammar self-efficacy and performance on the grammar test is strong, significant and positive, and the relationship between listening self-efficacy and listening performance is moderate, significant and positive, it appears that the declarations of reading self-efficacy ($M=3.56$, $SD=1.47$) are not reflective of performance on the reading sub-test ($M=4.67$ out of a possible 6 marks, $SD=1$).

Table 6.13 Correlations of omnibus and self-efficacy measures with performance

Variable	Mean	SD	S	K	1	2	3	4	5	6	7	8	9
1. Phase 1 performance	15.04	3.53	-.78	-.08	-								
2. Global confidence	3.07	1.37	.42	-.77	.61*	-							
3. Self-efficacy (composite)	3.5	1.39	.20	-1.0	.66*	.85*	$\alpha=.98$ $\omega=.99$						
4. SE Grammar	3.72	1.46	-.02	-1.1	.63*	.78*	.94*	$\alpha=.96$ $\omega=.97$					
5. SE Reading	3.56	1.47	.12	-1.1	.63*	.82*	.97*	.86*	$\alpha=.98$ $\omega=.98$				
6. SE Listening	3.21	1.47	.39	-.91	.62*	.84*	.96*	.84*	.92*	$\alpha=.98$ $\omega=.99$			
7. Perf. Grammar	5.54	2.09	-.53	-.76	.89*	.61*	.66*	.63*	.63*	.62*	-		
8. Perf. Reading	4.67	1	-.9	1.2	.58*	.20*	.23*	.24*	.22*	.22*	.30*	-	
9. Perf. Listening	4.83	1.33	-1.1	.51	.81*	.50*	.53*	.50*	.51*	.50*	.57*	.32*	-

Note. α = Cronbach's alpha for scale used at variable. ω = McDonald's omega for scale used at variable. SD = standard deviation. S = skewness. K = kurtosis.

* $p < .001$

The Census question on speaking abilities was investigated to determine whether self-declared Irish speakers or non-speakers differed significantly in their performance on the test. With all assumptions met, an independent t-test was carried out on performance for speakers ($M=16.08$, $SD=2.97$, $n=1,248$) and non-speakers ($M=12.22$, $SD=3.25$, $n=431$); $t(694.44) = 21.75$, $p < .001$, $d=1.24$, allowing us to reject the null hypothesis that the means of the two populations are equal. The large effect size suggests that there is a difference in performance outcomes between self-declared speakers and non-speakers of Irish. To assess whether the Census binary response option is reflective of general self-efficacy, a t-test was performed on those that self-assessed as answering ‘yes’ or ‘no’ in the Census speaking question – ‘can you speak Irish?’. The 2,602 participants that completed the full set of self-efficacy sub-scales in phase 1 were used. The average self-efficacy score for the ‘yes’ group was 3.88 ($SD=1.28$) out of 6, with the ‘no’ group at 2.16 ($SD=.79$) out of 6. The ‘no’ group broke one of the assumptions of validity – non-normal distribution with a small number of outliers. The data were transformed using a log transformation, thus nullifying the effect of the outliers in this group. All assumptions were met following the transformation. An independent t-test was conducted to compare the composite self-efficacy score in participants self-declaring as being speakers ($n=1,820$) or non-speakers ($n=782$) of Irish. There was a significant difference and large effect size in the transformed self-efficacy scores for the non-speakers ($M=0.31$, $SD=0.16$) and speakers of Irish ($M=0.56$, $SD=0.16$); $t(2600) = 37.6$, $p < .001$, $d=1.61$. The large effect size suggests that there is quite a difference in self-efficacy scores between self-declared speakers and non-speakers of Irish, suggesting that the Census question is reflective of self-efficacy.

Finally, the global confidence question which was asked before the phase 1 test and again at the end of phase 2, once actual results were revealed to all participants, was analysed. Using the 1,501 participants

that completed the instrument, a paired samples t-test was conducted to analyse the difference between phase 1 (M=3.09, SD=1.36) and phase 2 (M=3.33, SD =1.46). The results were significant; $t(1500) = -10.77$, $p < .001$, $d = .17$. The effect size is quite low. Ferguson (2016, p.533) suggests that a d of .41 should be regarded as the minimum threshold for ‘representing a “practically” significant effect for social sciences’. The finding suggests the difference in declarations of global confidence is trivial at best, i.e., despite being asked pre- and post-testing, global confidence levels remain relatively stable for individual participants.

6.5.7 Phase 1: Self-efficacy and time allocated

Using the data from the 1,679 participants that completed the phase 1 test, the time allocated to the test was regressed onto self-efficacy. The average time spent on the phase 1 test was 11 minutes and 58 seconds (SD= 6 mins and 4 secs). The results must be interpreted in light of the time recording issues which will be explained fully in the section below on the manipulation procedure. In brief, the timing data does not provide the most robust measure of participants’ allocation of resources as it is based on inferential data. However, the most accurate data available is worthy of analysis. As can be seen in the boxplot below, the data contains a large number of outliers in the upper extreme.

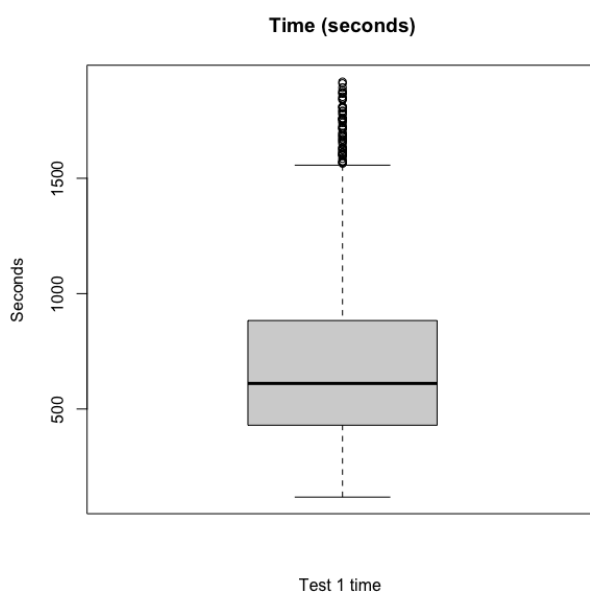


Figure 6.16 Boxplot for test time in seconds, phase 1

The time data were log-transformed, producing the scatterplot in figure 6.17, below. The transformed data successfully passed all the assumptions to carry out a simple linear regression.

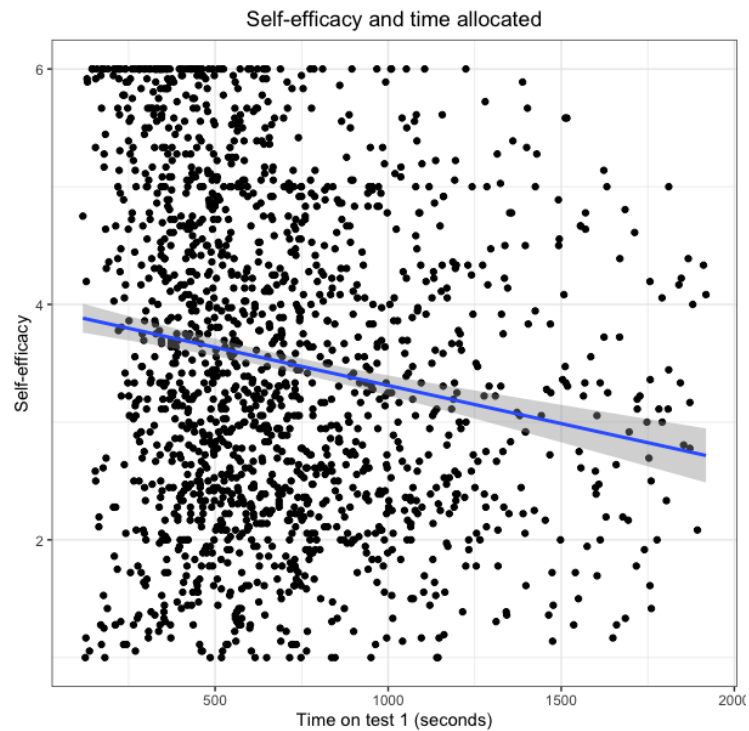


Figure 6.17 Scatterplot of self-efficacy and time resources dedicated to test, phase 1

A Pearson's correlation coefficient of -0.18 indicated a weak, negative relationship between the two variables. The regression model showed a significant relationship between self-efficacy and the transformed time allocated to the phase 1 test ($F(1, 1677) = 65.94, p < .001$). The transformed slope coefficient ($B = -.03, 95\% \text{ CI} [.12, .18]$) indicated that transformed time decreases each time the self-efficacy composite score increases by 1 (out of a max of 6). The R^2 indicated that only 3% of the variation in time allocated can be explained by self-efficacy.

6.5.8 Phase 1: Predictors of self-efficacy and performance

In order to determine which independent variables predict self-efficacy declarations and performance at phase 1, two separate hierarchical multiple regressions were conducted, as well as individual analyses of age and gender relative to outcome variables. Hierarchically structured

data is data that is nested within groups of clustered units. For example, age, gender, education, etc. all represent nested data within a group of participants. Hierarchical linear modelling (HLM) explains the variance in a dependent variable such as performance after taking these nested variables into account by allowing for regression models to be built in a staged, cumulative way. For the forthcoming analyses, all models were produced in SPSS employing the “enter” method, which retains all previously entered independent variables in the model at each subsequent step. Dummy variables were created for all categorical variables, with the first category as the reference variable. Note that for all HLM tables in this analysis, the ‘constant’ represents the initial response category for each variable, where relevant. The table column data for all HLM analyses contains the following data: the unstandardised beta coefficient (B), representing the slope of the line between predictor and outcome variable; the standardised beta coefficient (β), which is similar in concept to the correlation coefficient, with values between -1 and +1; the t-statistic (t), used to determine the significance of individual regression coefficients; the partial correlation (sr^2), representing the unique amount of variance the predictor contributes to the model; the r-squared (R^2) which determines the amount of variance in the outcome variable that is attributable to the predictor variable; and change in r-squared (ΔR^2) – the individual contribution of each predictor.

Due to non-normality of data, the coefficients were bootstrapped 2,000 times to generate a robust regression. Self-efficacy is represented as the composite mean score of the three sub-scales: reading, writing and listening. Performance is represented as the results out of 20 on the combined three phase 1 test sections. The descriptive statistics for the categorical variables are set out in table 6.14, below. Note that for any forthcoming analysis involving gender as a variable, any non-declarations of male or female ($n=4$) have been amalgamated with the female category for statistical purposes only.

Table 6.14 Descriptive statistics of categorical variables used in HLM models

Variable	Response category	Frequency	Percent
<i>Age</i>	18 – 29 years	205	13.7%
	30 – 39 years	281	18.7%
	40 – 49 years	455	30.3%
	50 – 64 years	497	33.1%
	65 years or over	63	4.2%
<i>Gender</i>	Male	476	31.7%
	Female & other	1025	68.3%
<i>Census</i>	Can speak Irish	1116	74.4%
	Cannot speak Irish	385	25.6%
<i>Highest exam</i>	The Leaving Certificate or equivalent	1091	72.7%
	A level/AS/A2	20	1.3%
	University, college or third-level education full degree in Irish	41	2.7%
	University, college or third-level education subject only in Irish	76	5.1%
	Teacher training college	176	11.7%
	A part-time course with a certificate	38	2.5%
	Cannot recall	7	0.5%
	Other	52	3.5%
	<i>Last time studying Irish</i>	Less than 5 years	207
5 – 9 years		114	7.6%
10 – 14 years		126	8.4%
15 – 19 years		158	10.5%
20 – 24 years		230	15.3%
25 – 29 years		183	12.2%
30 years or more		483	32.2%
<i>Global confidence</i>		No confidence	139
	Little confidence	479	32.9%
	Slightly confident	348	23.2%
	Somewhat confident	244	16.3%
	Fairly confident	223	14.9%
	Complete confidence	68	4.5%
	<i>Second language</i>	Yes	1425

6.5.8.1 Self-efficacy

For the first HLM analysis, a seven-step model was created with self-efficacy (M=3.5 out of 6, SD=1.39, $n=1,679$) entered as the dependent variable. Age category was entered at step one, followed by the addition of gender at step two. Previous research has highlighted the contribution demographic variables such as these have on perception-based judgements of ability (see Lent et al., 1991, Pajares and Valiante, 2001, Usher and Pajares, 2006), thus meriting their inclusion in the context of this analysis. Step three saw the addition of the Census question ‘can you speak Irish?’, followed by the highest examination taken in Irish, and the period of time since last formally studying Irish at steps four and five respectively. Step six added information on whether participants had studied another second language, to see if knowledge of another language had a bearing on Irish self-efficacy. The final step added global confidence. Limiting the analysis to these seven variables represented an adequate exploration of demographics, language skills and education as possible predictors of self-efficacy at the pre-intervention stage.

The models produced were checked to verify that multicollinearity – a linear relationship between variables that leads to unreliable beta coefficients – this was not an issue. The variance inflation factors (VIF) in the coefficient tables were all below five, below the 20-value threshold that usually merits further investigation (Field, 2018). Furthermore, and from a theoretical perspective, confidence has been shown to differ from self-efficacy (see Bandura, 1997).

Table 6.15 Correlations for HLM predictors with self-efficacy as the dependent variable

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
1. SE	1																											
2. Age1	.006*	1																										
3. Age2	-.061*	-.320*	1																									
4. Age3	-.140*	-.343*	-.465*	1																								
5. Age4	.053*	-.101*	-.136*	-.145*	1																							
6. Gender	-.048*	-.022*	.032*	-.002*	-.039*	1																						
7. Census	-.539*	.008*	.032*	.064*	-.048*	-.054*	1																					
8. Exam1	.016*	.024*	.004*	-.015*	-.024*	-.067*	-.009*	1																				
9. Exam2	.237*	-.021*	-.006*	-.070*	.053*	.027*	-.095*	-.020*	1																			
10. Exam3	.249*	.083*	-.026*	-.093*	-.034*	-.025*	-.099*	-.026*	-.040*	1																		
11. Exam4	.268*	.083*	-.072*	-.118*	-.008*	.152*	-.187*	-.041*	-.062*	-.082*	1																	
12. Exam5	.085*	-.050*	-.025*	.093*	.004*	-.011*	-.036*	-.019*	-.028*	-.037*	-.058*	1																
13. Exam6	-.030*	-.012*	-.027*	.043*	-.014*	-.083*	-.002*	-.008*	-.012*	-.016*	-.025*	-.011*	1															
14. Exam7	.025*	-.019*	-.020*	.030*	.091*	-.015*	.027*	-.022*	-.033*	-.044*	-.068*	-.031*	-.013*	1														
15. Last1	.125*	.005*	-.132*	-.143*	-.036*	-.006*	-.075*	.047*	.018*	.029*	.156*	.011*	.013*	-.017*	1													
16. Last2	.085*	.318*	-.112*	-.184*	-.042*	-.048*	-.031*	.021*	.049*	.038*	.079*	-.009*	-.021*	-.023*	-.087*	1												

17. Last3	-.008*	.414*	-.063*	-.187*	-.061*	-.022*	.028*	.046*	-.036*	.047*	.050*	-.043*	-.024*	-.002*	-.097*	-.104*	1									
18. Last4	-.118*	.059*	.342*	-.233*	-.071*	.023*	.065*	-.034*	-.005*	.017*	-.063*	-.048*	.019*	-.054*	-.120*	-.129*	-.145*	1								
19. Last5	-.087*	-.183*	.408*	-.109*	-.069*	.018*	.035*	-.012*	-.012*	-.062*	-.090*	-.027*	-.026*	-.013*	-.107*	-.115*	-.129*	-.160*	1							
20. Last6	-.182*	-.338*	-.268*	.651*	.209*	.027*	.094*	-.046*	-.090*	-.124*	-.117*	-.064*	.007*	-.001*	-.197*	-.212*	-.237*	-.294*	-.262*	1						
21. L2	-.082*	-.031*	-.023*	.019*	.074*	-.102*	.077*	.021*	-.008*	.009*	-.041*	.048*	.062*	.073*	.016*	-.022*	-.017*	-.001*	-.030*	.017*	1					
22. Glob1	-.471*	.003*	.019*	.086*	-.047*	-.029*	.293*	-.035*	-.112*	-.101*	-.172*	-.040*	-.011*	-.015*	-.051*	-.061*	.005*	.050*	.032*	.120*	.030*	1				
23. Glob2	-.022*	-.023*	.036*	.021*	.003*	.057*	-.123*	-.012*	-.060*	-.065*	-.023*	-.042*	-.017*	-.002*	-.028*	.014*	-.007*	.025*	.021*	.027*	-.067*	-.374*	1			
24. Glob3	.251*	-.034*	.009*	-.065*	.063*	.017*	-.225*	.020*	-.028*	-.012*	.132*	.010*	.040*	-.014*	.035*	-.013*	-.013*	.006*	.015*	-.078*	-.015*	-.305*	-.238*	1		
25. Glob4	.517*	.039*	-.054*	-.068*	-.007*	-.053*	-.243*	.028*	.152*	.203*	.181*	.095*	-.028*	.033*	.085*	.052*	.005*	-.079*	-.066*	-.113*	-.018*	-.283*	-.221*	-.180*	1	
26. Glob5	.382*	.008*	-.022*	-.084*	.011*	-.043*	-.125*	.024*	.248*	.131*	.037*	.018*	-.015*	.035*	.045*	.044*	-.001†	-.054*	-.040*	-.105*	-.013*	-.153*	-.119*	-.097*	-.090*	1

* p<.001

† p>.05

Table 6.16 Hierarchical regression with self-efficacy as the dependent variable

Variable	<i>B</i>	β	<i>t</i>	sr ²	R ²	ΔR^2
<i>Step 1: Age</i>					.068	.068
Constant	4.35*		2162.92			
30-39	-.83*	-.24	-318.78	-.171		
40-49	-.98*	.32	-406.08	-.216		
50-64	-1.12*	-.38	-473.11	-.250		
65+	-.49*	-.07	-118.92	-.065		
<i>Step 2: Gender</i>					.070	.002
Constant	4.43*		1947.66			
Female & other	-.14*	-.05	-88.42	-.048		
<i>Step 3: Census</i>					.333	.263
Constant	4.72*		2426.25			
No	-1.64*	-.52	-1152.18	-.539		
<i>Step 4: Highest exam</i>					.453	.120
Constant	4.22*		2250.06			
A level/AS/A2	.35*	.03	70.25	.038		
Full degree in Irish	1.75*	.21	513.32	.270		
Subject as part of degree	1.44*	.23	544.38	.285		
Teacher training college	.97*	.22	515.37	.271		
Part-time course	.92*	.11	257.18	.139		
Cannot recall	-.48*	-.02	-59.53	-.032		
Other	.57*	.08	183.50	.100		
<i>Step 5: Last time studying Irish</i>					.466	.013
Constant	4.37*		2018.78			
5-9 years	-.26*	-.05	-99.80	-.054		
10-14 years	-.24*	-.05	-91.11	-.050		
15-19 years	-.41*	-.09	-153.13	-.083		
20-24 years	-.69*	-.18	-268.07	-.145		
25-29 years	-.62*	-.15	-225.94	-.122		
30+ years	-.56*	-.19	-220.79	-.120		
<i>Step 6: Second language</i>					.470	.004
Constant	4.39*		2032.32			

No	-.40*	-.06	-157.49	-.086		
<i>Step 7: Global confidence</i>					.761	.291
Constant	2.37*		1149.64			
Little confidence	.64*	.22	462.07	.244		
Slightly confident	1.36*	.41	876.98	.432		
Somewhat confident	2.08*	.55	1225.97	.556		
Fairly confident	2.89*	.73	1583.28	.654		
Complete confidence	3.48*	.53	1464.86	.624		

* $p < .001$

Overall, the HLM model accounted for over 76% of the variation on self-efficacy at phase 1. At step one, Age contributes significantly to the regression model ($F(4, 3359674) = 60749.45, p < .001$), accounting for 6.7% of the variation in self-efficacy (all figures rounded). Introducing Gender only explained an additional .03% of the variance, but was significant ($F(5, 3359673) = 50594.07, p < .001$). The Census variable at step three explained an additional 26.1% of the variation in self-efficacy and was significant ($F(6, 3359672) = 277507.34, p < .001$). Highest exam at step four was significant ($F(13, 3359665) = 216015.93, p < .001$), explaining a further 12.4% of the variation in self-efficacy. Last time studying, at step five, explained only a further 1.3% of the variation in self-efficacy, and was significant ($F(19, 3359659) = 156009.51, p < .001$). At step six, Second language was significant ($F(20, 3359665) = 152148.38, p < .001$) explaining only an additional .04% of the variation. The final independent variable, Global confidence in Irish skills, explained a further 28.3% of the variation in self-efficacy; the change in R^2 was significant ($F(21, 3359657) = 496514.5, p < .001$). The most important contributing predictors of self-efficacy were how people answered the Census Irish question on speaking ability, their global level of confidence in Irish skills, and the highest examination taken in Irish, combining to account for 66.8% of the variation in self-efficacy. Variables such as gender and whether participants had studied a second language explained a combined, less than 1% of the variation.

6.5.8.2 Age and gender

To determine whether age category has an influence on self-efficacy assessments, an ANOVA was carried out, with the composite self-efficacy score as the outcome variable. Self-efficacy average scores per age category are presented in table 6.17 below.

Table 6.17 Self-efficacy scores per age category at Phase 1

Age	<i>n</i>	M	SD
18 – 29 years	224	4.35	1.31
30 – 39 years	320	3.53	1.47
40 – 49 years	508	3.37	1.34
50 – 64 years	559	3.24	1.28
65 years or over	68	3.87	1.26

The 18-29 years category exhibits the highest level of Irish self-efficacy (4.35 out of 6), with the 50-64 group demonstrating the lowest at 3.24 out of 6. Having passed all statistical assumptions except homogeneity of variance, the ANOVA effect size is presented as *Welch's F* statistic. *Welch's F* is not sensitive to unequal variance in groups as a classic ANOVA is, thereby allowing to retain parametric methods for analysis. Self-efficacy declarations were significantly different between the age groupings, *Welch's F*(4, 383) = 31.7, $p < .001$. For a post-hoc analysis, the Games-Howell multiple comparisons method was employed. Unlike Tukey's pairwise comparison, this method does not require the assumption of equal standard deviations for each group. The post-hoc results revealed significant differences between all age categories ($p < .001$).

To assess whether gender has an influence on self-efficacy, an independent t-test was used. The difference between male (M=3.62, SD=1.43, $n=527$) and female participants (M=3.46, SD=.36, $n=1152$) was significant, $t(975.35) = 2.09$, $p < .05$. However, the effect size was negligible, $d=0.11$. This shows that although there is a significant

difference in declarations of self-efficacy between males and females, the difference lacks any practical, real-world significance.

6.5.8.3 Performance

For assessing the potential predictor variables on test performance at phase 1 ($M=15.04$, $SD=3.53$, $n=1,679$), an eight-step HLM was carried out. The exact same variables as utilised in the previous HLM analysis were used, with the inclusion of the self-efficacy composite score at phase 1. On this occasion, the order of the inputted variables was changed to reflect the theoretical relationship between performance outcome and predictors. For example, self-efficacy is taken to represent performance more accurately than abilities. Therefore, perception-based variables such as self-efficacy, global confidence and census comprised the first three steps respectively, followed by ability-related variables including second language, highest and last exam, representing steps four to six respectively. Finally, age and gender were added to determine the predictive influence of demographic variables.

The presence of multicollinearity was checked. Aside from high correlations (see table 6.18, below) between self-efficacy and the dependent variable ($r=.66$), all correlations between predictor variables and VIFs in the coefficient tables were acceptable, with the highest VIF value at five.

Table 6.18 Correlations for HLM predictors with performance as the dependent variable

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. Perf.	1																										
2. SE	.655*	1																									
3. Glob1	-.344*	-.471*	1																								
4. Glob2	.088*	-.022*	-.374*	1																							
5. Glob3	.214*	.251*	-.305*	-.238*	1																						
6. Glob4	.330*	.517*	-.283*	-.221*	-.180*	1																					
7. Glob5	.204*	.382*	-.153*	-.119*	-.097*	-.090*	1																				
8. Censu	-.491*	-.539*	.293*	-.123*	-.225*	-.243*	-.125*	1																			
9. L2	-.160*	-.082*	.030*	-.067*	-.015*	-.018*	-.013*	.077*	1																		
10. Exam1	-.026*	.016*	-.035*	-.012*	.020*	.028*	.024*	-.009*	.021*	1																	
11. Exam2	.157*	.237*	-.112*	-.060*	-.028*	.152*	.248*	-.095*	-.008*	-.020*	1																
12. Exam3	.142*	.249*	-.101*	-.065*	-.012*	.203*	.131*	-.099*	.009*	-.026*	-.040*	1															
13. Exam4	.251*	.268*	-.172*	-.023*	.132*	.181*	.037*	-.187*	-.041*	-.041*	-.062*	-.082*	1														
14. Exam5	.055*	.085*	-.040*	-.042*	.010*	.095*	.018*	-.036*	.048*	-.019*	-.028*	-.037*	-.058*	1													
15. Exam6	-.040*	-.030*	-.011*	-.017*	.040*	-.028*	-.015*	-.002*	.062*	-.008*	-.012*	-.016*	-.025*	-.011*	1												
16. Exam7	-.002*	.025*	-.015*	-.002*	-.014*	.033*	.035*	.027*	.073*	-.022*	-.033*	-.044*	-.068*	-.031*	-.013*	1											
17. Last1	.060*	.125*	-.051*	-.028*	.035*	.085*	.045*	-.075*	.016*	.047*	.018*	.029*	.156*	.011*	.013*	-.017*	1										

18. Last2	.022*	.085*	-.061*	.014*	-.013*	.052*	.044*	-.031*	-.022*	.021*	.049*	.038*	.079*	-.009*	-.021*	-.023*	-.087*	1									
19. Last3	-.025*	-.008*	.005*	-.007*	-.013*	.005*	-.001**	.028*	-.017*	.046*	-.036*	.047*	.050*	-.043*	-.024*	-.002**	-.097*	-.104*	1								
20. Last4	-.084*	-.118*	.050*	.025*	.006*	-.079*	-.054*	.065*	-.001†	-.034*	-.005*	.017*	-.063*	-.048*	.019*	-.054*	-.120*	-.129*	-.145*	1							
21. Last5	-.017*	-.087*	.032*	.021*	.015*	-.066*	-.040*	.035*	-.030*	-.012*	-.012*	-.062*	-.090*	-.027*	-.026*	-.013*	-.107*	-.115*	-.129*	-.160*	1						
22. Last6	-.090*	-.182*	.120*	.027*	-.078*	-.113*	-.105*	.094*	.017*	-.046*	-.090*	-.124*	-.117*	-.064*	.007*	-.001**	-.197*	-.212*	-.237*	-.294*	-.262*	1					
23. Age1	-.049*	.006*	.003*	-.023*	-.034*	.039*	.008*	.008*	-.031*	.024*	-.021*	.083*	.083*	-.050*	-.012*	-.019*	-.005*	.318*	.414*	.059*	-.183*	-.338*	1				
24. Age2	-.003*	-.061*	.019*	.036*	.009*	-.054*	-.022*	.032*	-.023*	.004*	-.006*	-.026*	-.072*	-.025*	-.027*	-.020*	-.132*	-.112*	-.063*	.342*	.408*	-.268*	-.320*	1			
25. Age3	-.055*	-.140*	.086*	.021*	-.065*	-.068*	-.084*	.064*	.019*	-.015*	-.070*	-.093*	-.118*	.093*	.043*	.030*	-.143*	-.184*	-.187*	-.233*	-.109*	.651*	-.343*	-.465*	1		
26. Age4	.029*	.053*	-.047*	.003*	.063*	-.007*	.011*	-.048*	.074*	-.024*	.053*	-.034*	-.008*	.004*	-.014*	.091*	-.036*	-.042*	-.061*	-.071*	-.069*	.209*	-.101*	-.136*	-.146*	1	
27. Gender	.067*	-.048*	-.029*	.057*	.017*	-.053*	-.043*	-.054*	-.102*	-.067*	.027*	-.025*	.152*	-.011*	-.083*	-.015*	-.006*	-.048*	-.022*	.023*	.018*	.027*	-.022*	.032*	-.002*	-.039*	1

* p<.001

**p<.01

† p>.05

Table 6.19 Hierarchical regression with performance as the dependent variable

Variable	<i>B</i>	β	<i>t</i>	sr ²	<i>R</i> ²	ΔR^2
<i>Step 1: Self-efficacy</i>	9.23*	.66	2344.82	.655	.430	.430
<i>Step 2: Global level of confidence in Irish skills</i>					.458	.029
Constant	8.72*		1543.61			
Little confidence	1.25*	.17	231.69	.125		
Slightly confident	2.42*	.29	381.02	.204		
Somewhat confident	2.45*	.26	323.52	.174		
Fairly confident	2.34*	.23	258.72	.140		
Complete confidence	1.91*	.11	167.91	.091		
<i>Step 3: Census</i>					.474	.015
Constant	9.91*		1469.67			
No	-1.22*	-.15	-311.46	-.168		
<i>Step 4: Second language</i>					.482	.009
Constant	10.09*		1499.04			
No	-1.49*	-.09	-235.05	-.127		
<i>Step 5: Highest exam</i>					.489	.007
Constant	10.17*		1512.23			
A level/AS/A2	-1.03*	-.03	-84.50	-.046		
Full degree in Irish	.60*	.03	67.52	.037		
Subject as part of degree	.15*	.01	21.87	.012		
Teacher training college	.80*	.07	169.09	.092		
Part-time course	.35*	.02	39.48	.022		
Cannot recall	-.80*	-.02	-40.00	-.022		
Other	-.01†	-.00	-1.32	-.001		
<i>Step 6: Last time studying Irish</i>					.493	.005
Constant	9.94*		1227.70			
5-9 years	-.26*	-.02	-40.54	-.022		
10-14 years	-.30*	-.02	-49.01	-.027		
15-19 years	-.07*	-.01	-11.76	-.006		
20-24 years	.03*	.00	5.88	.003		
25-29 years	.47*	.04	81.80	.045		
30+ years	.35*	.05	71.77	.039		
<i>Step 7: Age</i>					.495	.002
Constant	9.79*		1146.86			
30-39	.03*	.00	4.92	.003		

40-49	.52*	.07	84.66	.046
50-64	.53*	.07	81.69	.045
65+	.27*	.02	29.18	.016
<i>Step 8: Gender</i>				.498 .003
Constant	9.35*		1049.12	
Female	.43*	.06	142.03	.077

* $p < .001$

† $p > .05$

Overall, the HLM model explains just under 50% of the variation in performance outcomes at phase 1. At step one, Self-efficacy contributed significantly to the model ($F(1, 3359677) = 2537509.04, p < .001$), accounting for 43% of the variation in performance, strengthening the argument that self-efficacy is a robust predictor of performance. Interestingly, Global confidence accounted for only 2.9% of the variation in performance, and was significant ($F(6, 3359672) = 473841.88, p < .001$), further suggesting that omnibus measures perhaps lack the graded nuance of task related efficacy sub-scales. The addition of Census was significant ($F(7, 3359671) = 431735.58, p < .001$), explaining only 1.5% of the variation. Knowledge of a second language predicted only .9% of the variation in performance scores, and was significant ($F(8, 3359670) = 390887.32, p < .001$). Education variables, when combined, explained just over a further 1% of the variation: Highest exam was significant ($F(15, 3359663) = 213970.84, p < .001$) accounting for .7% of the variation, with Last exam accounting for .5% of the variation in performance, and being significant ($F(21, 3359657) = 155729.46, p < .001$). The addition of the demographic variables accounted for only a combined .5% of the variation on performance: Age was significant ($F(25, 3359653) = 131947.91, p < .001$), as was Gender ($F(26, 3359652) = 128410.69, p < .001$). By far the best predictor of performance was self-efficacy at 43%, with the other variables explaining very little of the variation in scores at phase 1. Despite the inclusion of the remaining predictors, over 50% of the variation remained unexplained.

6.5.8.4 Age and gender

The performance outcomes for each group is shown in table 6.20 below. The youngest age category, 18-29 years, have the highest average score of 16.2 out of 20 on phase 1.

Table 6.20 Results per age category at Phase 1

Age	<i>n</i>	M	SD
18 – 29 years	224	16.2	2.95
30 – 39 years	320	14.7	3.74
40 – 49 years	508	15.0	3.34
50 – 64 years	559	14.8	3.54
65 years or over	68	15.6	3.67

To assess whether age category is a determiner of performance, the five age categories were analysed using a one-way ANOVA. However, despite assumptions of statistical normality being met, homogeneity of variance was violated. Therefore, *Welch's F* test was used to measure the effect size. Performance was significantly different between the five age groups, *Welch's F*(4, 383) = 8.98, $p < .001$. Games-Howell post-hoc analyses, which does not require an assumption of equality in standard deviations, revealed that the 18-29 and 30-39 categories difference (-1.43, 95%CI (-2.22,-.64)) was statistically significant ($p < .001$). The 18-29 and 40-49 categories difference (-1.13, 95% CI(-1.8,-.45) was statistically significant ($p < .001$), as was the difference between the 18-29 and 50-64 age categories (-1.31, 95%CI (-1.99,-.64), $p < .001$). No other group differences were statistically significant.

For gender, as stated above, non-declarations of male or female ($n=4$) were amalgamated to the female category for statistical reasons only. To determine whether gender has an influence on performance outcomes, an independent t-test was carried out, revealing significant differences between male (M=15.2, SD=3.34, $n=1152$) and female participants (M=14.8, SD=3.75, $n=527$), $t(921.36) = -2.16$, $p < .05$. However, the effect size was negligible, $d=.12$, suggesting that the

difference in performance between genders lacks any practical significance.

6.6 Manipulation effect

A key element of this research is to frame behavioural outcomes as being largely perception-based. By initiating an intervention based on results at phase 1, this section seeks to investigate whether enactive mastery experiences and social persuasion can be manipulated to affect performance, self-efficacy declarations and resource allocation at phase 2. Enactive mastery experiences in the intervention represent the results at phase 1 – falsely inflated or deflated for the experimental groups. Social persuasion is represented as the false comparative feedback received by the experimental groups. This analysis was conducted using the 1,501 participants that completed both phases, and conducted with the *r* packages *psych* (Revelle, 2020), *rstatix* (Kassambara, 2020) and *ggpubr* (Kassambara and Kassambara, 2020). Performance is operationalised as results on the Irish tests, with resources allocated as the time spent on the Irish tests, and self-efficacy as the composite averaged score of the three self-efficacy sub-scales.

6.6.1 Performance

Based on phase 1 results, the initial group sizes were as follows: control $n=842$; high $n=484$; and low $n=175$. A check for skewness revealed the following respective results: -3.7; -0.3; and -0.6, indicating that the control group was slightly skewed towards the higher end of results.

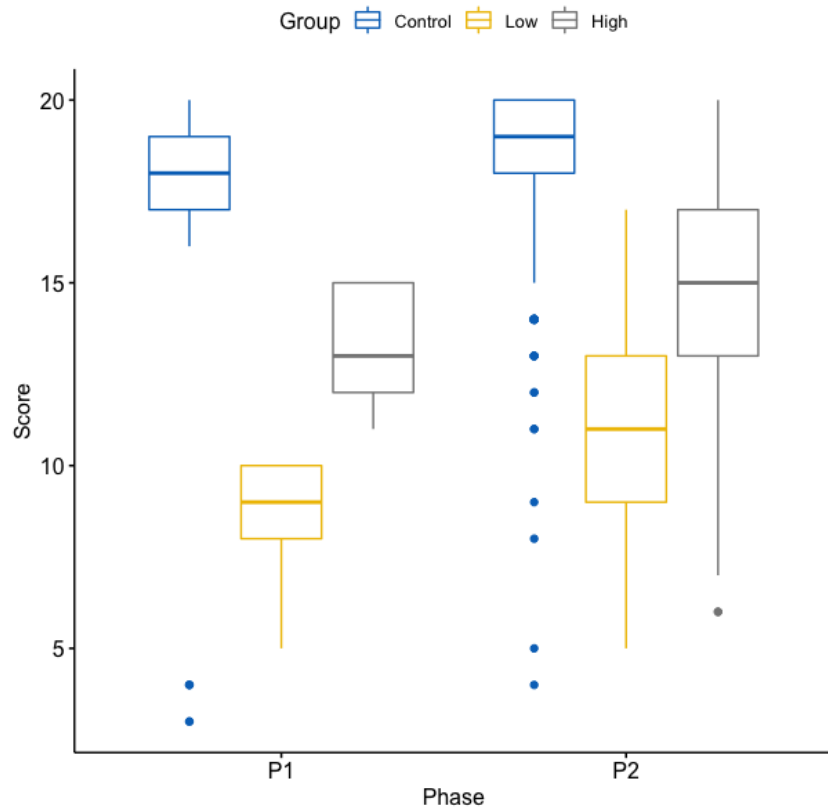


Figure 6.18 Boxplots for test performance by group and phase

The results for each group over both phases (P1 and P2 on the x-axis) can be seen in figure 6.18, above. The mean score for the Control (actual results received) group at phase 1 was 17.1, increasing by 4% to 18.4 out of 20 at phase 2. The High group (high achievers that received deflated results) achieved a mean of 13.4 at phase 1, increasing by 8% to 14.5 on phase 2. At the opposite end, the Low group (low performers that received inflated results) achieved a phase 1 mean score of 8.51, with an increase of 28% to 10.9 out of 20 at phase 2.

The most common method for assessing an intervention effect of this nature is to conduct a mixed ANOVA which compares the difference in means between groups over two factors – a between-subjects factor (the three groups), and a within-subjects factor (the two phases). This would test a change in a dependent variable such as a result in a test measured on two occasions where subjects have undergone a condition (the manipulation). The null hypothesis for an ANOVA in the present

context is that the rate of performance change between phases for all three groups should be the same. Identifying a statistically significant within-subjects effect would prove the alternative hypothesis; the change in each group's mean score is significantly different, likely due to the manipulation effect.

Table 6.21 Descriptive statistics for test performance by group and phase

	Phase 1			Phase 2			Mean % change
	Mean	SD	Median	Mean	SD	Median	
Control (<i>n</i> =842)	17.7	1.63	18	18.4	1.8	19	+4%
High (<i>n</i> =484)	13.4	1.35	13	14.5	2.96	15	+8%
Low (<i>n</i> =175)	8.51	1.38	9	10.9	2.62	11	+28%

Based on the data in the table above, it is evident that the Control group mean result at phase 1 is already heading towards the ceiling of 20 marks out of 20. If we consider the 28% increase in score from the Low group from a base mean of 8.51, then the null hypothesis is only possible if the Control group increase their score to 21.24 out of 20 – an impossibility. Therefore, an interaction effect becomes meaningless in this context. As a large sample size by its nature tends to gravitate towards statistical significance, conducting a mixed ANOVA would prove statistically significant while masking the impracticalities of the point just outlined. To circumvent this outcome, a one-way ANOVA was considered using the change in mean scores as the independent variable, as shown in table 6.22, below.

Table 6.22 Descriptive statistics for test performance differences across phases

	Mean score difference	
	between phases	SD
Control	+0.68	1.6
High	+1.16	2.55
Low	+2.37	2.59

A number of assumptions required to conduct a one-way ANOVA were violated, including homogeneity of variance and normality (see boxplots in figure 6.19, below) due to the outliers in the Control and Low groups.

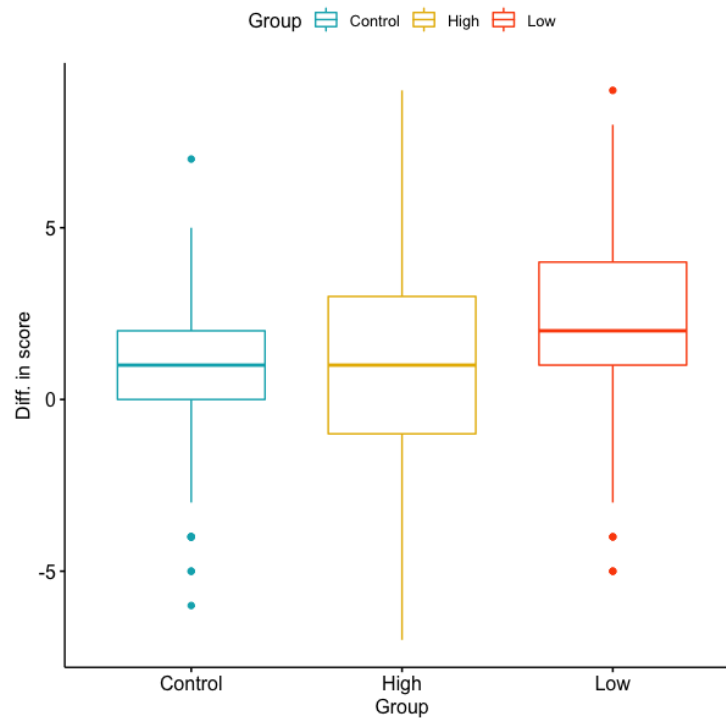


Figure 6.19 Boxplots for mean score differences by group

In light of the violation of the assumptions, a non-parametric alternative to the one-way ANOVA test – a Kruskal-Wallis test – was conducted to compare the difference in scores between phase 1 and 2 for each group. There was a statistically significant difference between groups ($p < .001$). A pairwise Wilcoxon test between groups showed that each group comparison was statistically significant with all p -values $< .001$, adjusted using Bonferroni correction.

The differences in scores for each group were assessed using a paired samples Wilcoxon test (or Wilcoxon’s signed-rank test), the non-parametric equivalent of the paired samples t-test. The paired samples Wilcoxon test analyses the difference in scores, taking account of the magnitude of the observed differences. The analysis is based on rank-ordering of the data with the null hypothesis that the median of the differences between the paired data is zero. For the Control group, the

median self-efficacy composite score for phase 1 was 18 out of 20 (IQR=2), with the median for phase 2 at 19 (IQR=2). The Wilcoxon test showed that the difference was significant ($p<.001$, $r=.42$). For the High group, the median for phase 1 was 13 out of 20 (IQR=3), and for phase 2 was 15 (IQR=4). The Wilcoxon test showed that the difference was significant ($p<.001$, $r=.42$). Finally, the Low group had a median of 9 out of 20 (IQR=2) for phase 1, and a median of 11 (IQR=4) for phase 2. The Wilcoxon test showed that the difference was significant ($p<.001$, $r=.69$), suggesting that performance change in the Low group is more substantial compared with the other groups, most likely due to the manipulation.

6.6.2 Self-efficacy

Self-efficacy was investigated to determine whether the manipulation had an effect on self-declarations on both phases. The descriptive statistics for both phases is in table 6.23 below. The boxplot in figure 6.20 further below shows a number of outliers in self-assessment of self-efficacy in the High group. A log-transformation of the self-efficacy composite scores did nullify the influence of these outliers to an extent. For example, a small number of extreme outliers identified using IQR as a method were suppressed following the transformation. However, assumptions such as normality, using QQ-plots, homogeneity of variance and sphericity were all violated, likely due to the imbalance in group numbers as discussed in previous analyses.

Table 6.23 Descriptive statistics for self-efficacy by group and phase

	Phase 1			Phase 2			Mean % change
	Mean	SD	Median	Mean	SD	Median	
Control (n=842)	4.24	1.19	4.31	4.37	1.17	4.58	+3%
High (n=484)	2.82	1.02	2.69	2.44	1.0	2.25	-13%
Low (n=175)	2.02	0.77	2	2.07	0.79	2	+2%

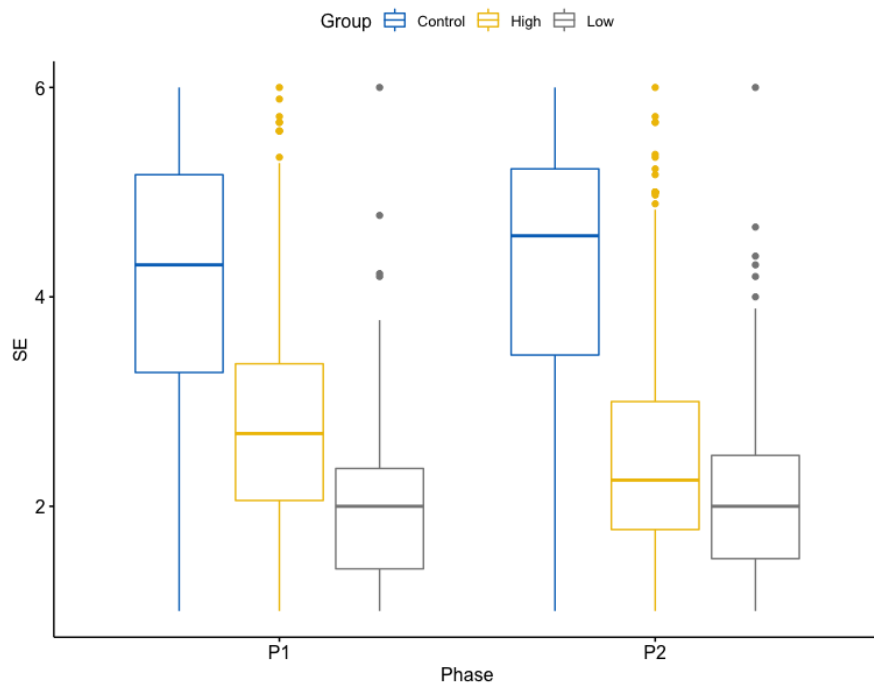


Figure 6.20 Boxplots for self-efficacy by group and phase

The differences in self-efficacy scores for each group were investigated using a paired samples Wilcoxon Test, the non-parametric equivalent of the paired samples t-test. This was due to the violations of normality of the data. For the Control group, the median self-efficacy composite score for phase 1 was 4.31 out of 6 (IQR=1.89), with the median for phase 2 at 4.58 (IQR=1.78). The Wilcoxon test showed that the difference was significant ($p < .05$, $r = .05$). For the High group, the median for phase 1 was 2.69 (IQR=1.31), and for phase 2 was 2.25 (IQR=1.22). The Wilcoxon test was significant, ($p < .001$, $r = .20$). Finally, the Low group had a median of 2 (IQR=.96) for phase 1, and a median of 2 (IQR=.99) for phase 2. The difference was insignificant ($p = .52$, $r = .03$), suggesting self-efficacy remains relatively stable across phases.

Using the difference in composite self-efficacy scores between phases, a Kruskal-Wallis test was conducted. The difference in scores between phases was statistically significant difference between groups ($p < .001$). Pairwise Wilcoxon test between groups showed that there was a significant difference between the Control and High groups ($p < .001$)

and the Low and High groups ($p=.01$), using a Bonferroni adjustment. This suggests that manipulation may lower self-efficacy more effectively than raising it.

6.6.3 Resource allocation

In order to measure the effect of the manipulation intervention on the number of resources, measured as time in seconds, dedicated to the test, a comparison between both test phases was necessary. However, a major oversight in the final survey design caused by the numerous iterations at initial and pilot design phases resulted in the hidden timer being inadvertently omitted from the phase 1 grammar test section and the first phase 1 reading (A2 level). Qualtrics Support were contacted but confirmed that this essential metadata is not auto recorded nor retrospectively accessible in any form by Qualtrics. Upon realising this error, the survey was briefly reopened with the timers added. 15 further anonymous participants took the test, and along with the pilot data from the 15 pilot participants, provided enough data to infer an average time for the missing phase 1 sub-tests. By subtracting the average time taken by these participants to read the information page, consent page, and final results section from the overall duration (the only timing metadata auto recorded in Qualtrics), the time for phase 1 testing could be inferred. Descriptive statistics for time allocated is in table 6.24 below.

Table 6.24 Descriptive statistics for resource allocation (time in seconds) by group and phase

	Phase 1			Phase 2			Mean % change
	Mean	SD	Median	Mean	SD	Median	
Control (n=842)	653	345	567	507	194	467	-22%
High (n=484)	782	380	596	577	249	525	-26%
Low (n=175)	713	384	635	573	310	530	-20%

Using the sub-sample of participants that fully completed both phases ($n=1,501$), the effect of the manipulation on time allocated was investigated. A mixed ANOVA is the standard, robust statistical analysis in this instance. However, due to the unequal group sizes, and the non-normality of the data, including the presence of outliers (see figure 6.21, below), the assumptions for a mixed ANOVA were violated.

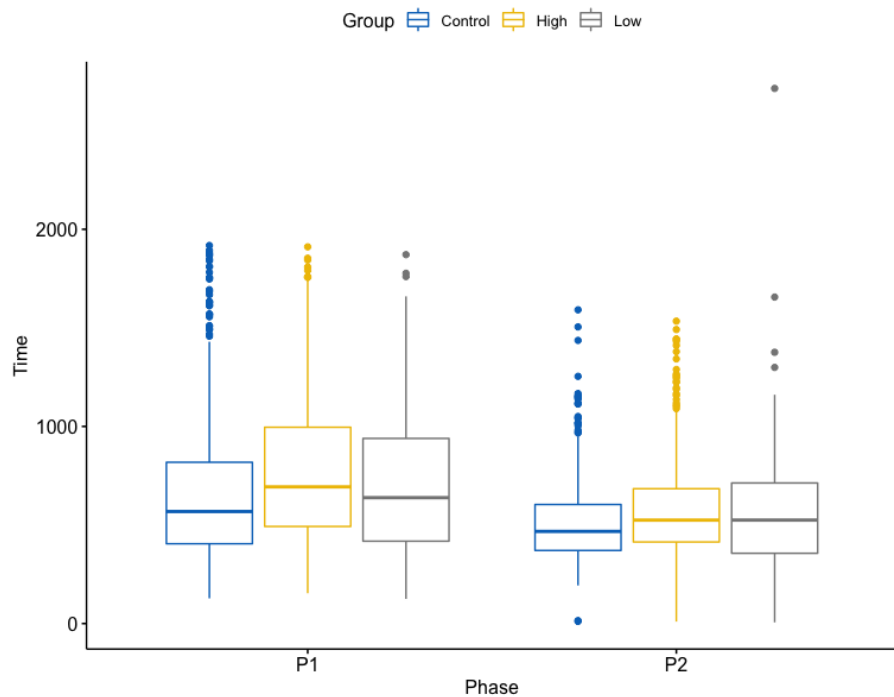


Figure 6.21 Boxplots for resource allocation (time in seconds) by group and phase

The large standard deviations for the time data in table 6.24 further highlight this non-normality. A log-transformation of the time values, as well as a removal of extreme outliers, failed to address these violations. Issues with reaction time data have previously been highlighted in Ratcliff (1993). Even allocating time data to bins of 30-second intervals – a method used in Beck and Schmidt (2015) – failed to resolve violations of homogeneity of variance and sphericity. A solution suggested in Field et al. (2012) is to carry out a robust ANOVA with the WRS package in R, which has now been superseded by WRS2 (Mair and Wilcox, 2015). The package allows for options such as

trimmed means which allows for a defined cut-off of values at both ends of the data set, and produces interaction and main effect statistics. However, the absence of this methodology in language or manipulation studies to date, coupled with non-standard post-hoc test outputs, meant that a confidence in interpretation and reporting could not be achieved in the context of this study. An email for clarification on reporting the post-hoc output to the package author was unanswered. The robust ANOVA reported output in Field et al. (2012) resembles what could be regarded as “standard” when it comes to an ANOVA. However, this was generated with the older, now unavailable WRS package. A personal communication from Field (June 2022) regarding an update to the robust ANOVA methods in the 2012 book, revealed that the author had yet to write a follow-up to this chapter.

Having exhausted every possibility for carrying out a mixed ANOVA, the decision was taken to focus on the between-group effect to determine the change in time allocated between phases (visualised in figure 6.22, below). The differences in time allocated for each group were analysed using a paired samples Wilcoxon Test, the non-parametric equivalent of the paired samples t-test. For the Control group, the median time in seconds for phase 1 was 567 (IQR=415), with the median for phase 2 at 467 (IQR=235). The Wilcoxon test showed that the difference was significant ($p < .001$, $r = .21$). For the High group, the median for phase 1 was 596 (IQR=505), and for phase 2 was 525 (IQR=269). The Wilcoxon test was significant ($p < .001$, $r = .29$). Finally, the Low group had a median of 635 (IQR=514) for phase 1, and a median of 530 (IQR=349) for phase 2. Again, the difference was significant ($p < .001$, $r = .19$). All groups spent less time on phase 2 testing. Interpreting this with the inferred data in mind suggests that similar to the self-efficacy differences, time allocation is unlikely to be largely influenced by the manipulation. Confounding factors may be present. For example, familiarity with the phase 1 test structure, may have led participants to be more comfortable with the

testing environment, with time spent on reading instructions or interpreting the layout of questions reduced as a result.

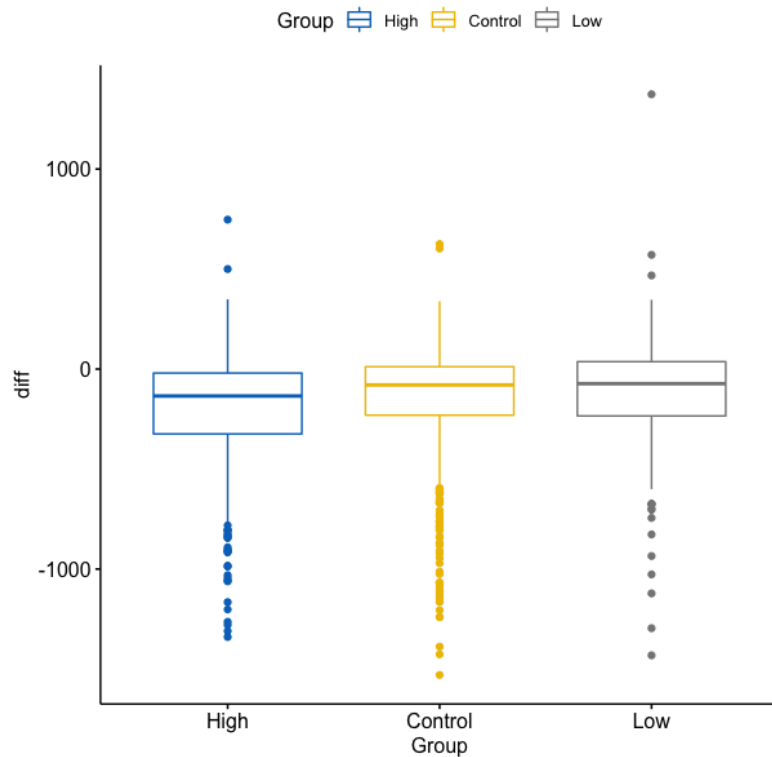


Figure 6.22 Boxplots for mean differences in resource allocation (time in seconds) by group

Using the difference in time between phases (see Figure 6.22, above), a Kruskal-Wallis test – the non-parametric alternative of the one-way ANOVA – was conducted. There was a statistically significant difference between groups ($p < .001$). Pairwise Wilcoxon test between groups showed that there was a significant difference between the Control and High groups ($p < .001$) and the Low and High groups ($p < .01$). However, while results provide evidence of statistical significance regarding the allocation of resources, without precise time data, it is difficult to draw any robust conclusions.

6.7 Phase 2: Attitudes

Following the results of phase 1, participants ($n=1,649$) were presented with a series of attitudinal statements related to their overall confidence in the Irish language, school experiences, attribution of successes and failings, and the Census of Population. Capturing this data potentially allows for determining their contribution towards outcomes at phase 2.

6.7.1 Scale reliability

Using the 1,649 completed responses, the reliability of the attitudinal scales following the phase 1 test were assessed using Cronbach's alpha and McDonald's omega. The 4-item Irish language confidence scale required a reverse scoring of the first item as the initial analysis revealed this item to negatively correlate with the total score. The item itself was negatively worded, reflecting loss of Irish language. The adjusted scale demonstrated good internal consistency ($\alpha = .81$; $\omega = .84$). The 6-item school experiences scale revealed a similar result ($\alpha = .82$; $\omega = .86$). The 2-item Census scale was also assessed, demonstrating an acceptable internal consistency ($\alpha = .74$, $\omega = .75$). The attribution 5-item scale was not tested as it comprises competing attribution queries such as luck versus effort, and consists of both positive and negative attribution statements.

6.7.2 Confidence in Irish

When presented with the statement 'I feel that I have 'lost' all the Irish that I learned in school' (Q1), over half of respondents either disagreed or strongly disagreed (both gradations of agree and disagree will be referred to as the amalgamated 'agree' or 'disagree' for the remainder of this section). Just over 40% agreed with the statement. Interestingly, the bipolar opposite statement 'I feel that I can recall most of the Irish that I learned in school' (Q2) revealed that 55.6% disagreed, suggesting that interpretations of losing and recalling a language vary for participants. The third statement, 'If a tourist asked if I could speak Irish, I would say 'yes'' (Q3), showed that over 60% would agree. The final confidence statement, 'I feel that if I did a short refresher Irish course I would remember a lot of what I learned in school' (Q4), almost 75% agreed. These responses suggest that participants are confident in their passive knowledge of Irish. For example, you are likely to tell a tourist you can speak Irish if you know this won't involve a follow-up conversation in Irish. The data was checked to determine how those

that declared ‘no’ for the Census Irish speaking ability question responded. 79.5% of those that stated they could not speak Irish, agreed that they would tell a tourist that they could speak Irish. Similarly, there is more confidence that the language is not lost than being asked to recall it. However, Irish knowledge is likely to be retrieved in the right environment, i.e., through a short refresher course.

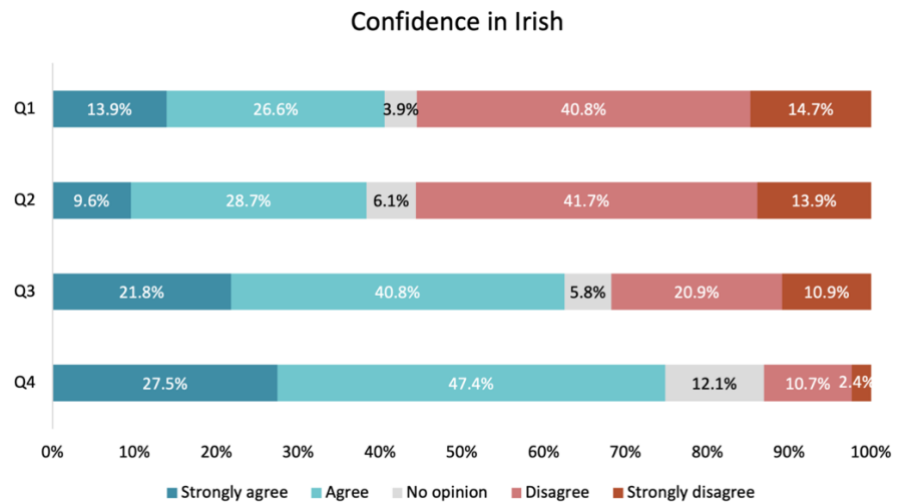


Figure 6.23 Confidence scale responses

A further analysis of Q1 and Q2, which directly relate to perceptions of Irish language attrition, revealed no discernible patterns at the group level. Distributions of opinions were quite similar for each group, further suggesting that there may be a conflict of interpretation between “losing” and “recalling” the Irish language. The absence of further qualitative data on this finding allows for speculation only, and therefore merits consideration in future studies.

6.7.3 School experiences

The school environment is where the vast majority of participants will have interfaced with the Irish language. As authors including Schunk and DiBenedetto (2016) and Yashima (2009) have suggested, school experiences, including peer and expert model interactions in this domain, will shape influencing factors such as resilience, perceptions

of controllability and autonomy, and strategising. Participants were presented with six statements, the first of which was ‘I was satisfied with my Irish speaking abilities in school’ (Q1), of which the majority agree. The second statement, ‘The results in my Leaving Certificate, or equivalent, were a good representation of my overall Irish abilities’ (Q2), showed that over 75% of respondents agreed, with just over 16% feeling the final exam in school did not represent their abilities. Over 49% did not agree that ‘There was a teacher in school that inspired me to improve my Irish abilities’ (Q3). Over 50% agreed that ‘There were students in my class with a level of Irish that impressed me’ (Q4), indicating a degree of peer comparison. When asked whether they ‘Received constructive or helpful feedback on my Irish abilities in school’ (Q5), under 38% agreed. For the final statement, ‘I enjoyed learning Irish in school’, 46.9% agreed, while 42.9% disagreed. The absence of constructive feedback or identifiable expert models, as highlighted in Q3 and Q5 has already been highlighted as an issue for previous learners of Irish in Barry (2020).

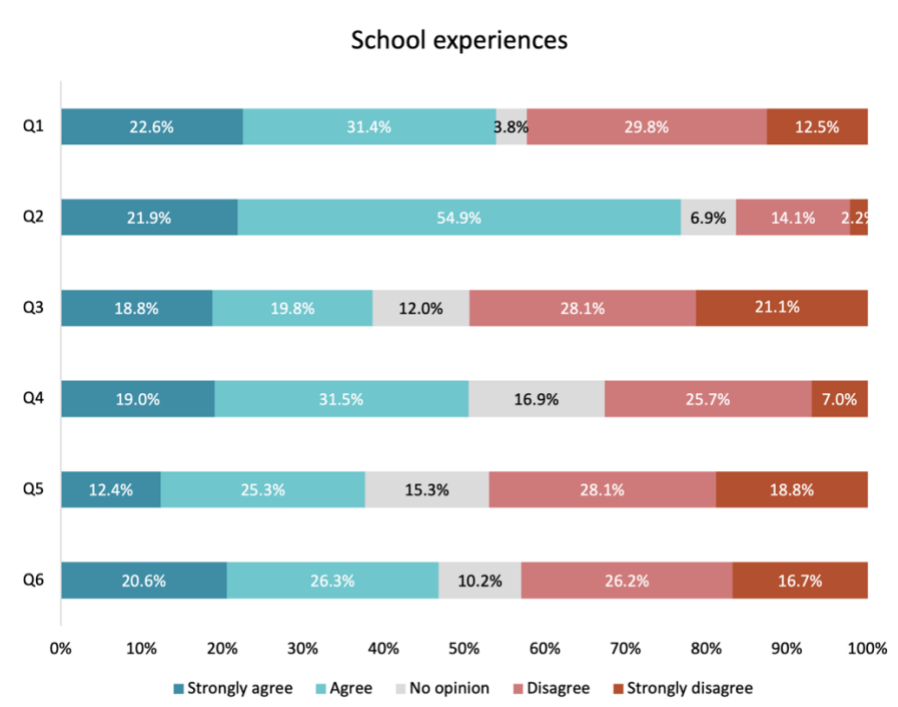


Figure 6.24 School experiences scale responses

6.7.4 Attribution

To assess whether participants attributed Irish language exam success or failures to internal or external loci of control, they were asked two types of questions. Given the hypothesis that they performed better than expected in a school Irish exam, they were asked if this was down to: ‘Good luck – the right questions came up’ (Q1) or ‘The questions on the test weren’t too difficult’ (Q2). Responses to both were almost identical, with both agreed categories accounting for over 40% of responses. Give the hypothesis that they performed worse than expected in a school Irish exam they were posed three statements seeking to explain what this was down to. For ‘Not putting in enough effort into preparing for the exam’ (Q3), a large majority agreed. For external attributions - ‘Bad luck – the right questions didn’t came up’ (Q4), more disagreed than agreed. The final reason – ‘The questions on the test were too difficult’, again had more participants disagreeing than agreeing. It appears as though for negative outcomes, respondents tended to attribute these to internal factors. The very large amount of ‘no opinion’ responses in this scale, ranging from 21.9% to 33.5%, present their own set of implications, which will be discussed further in the next chapter.

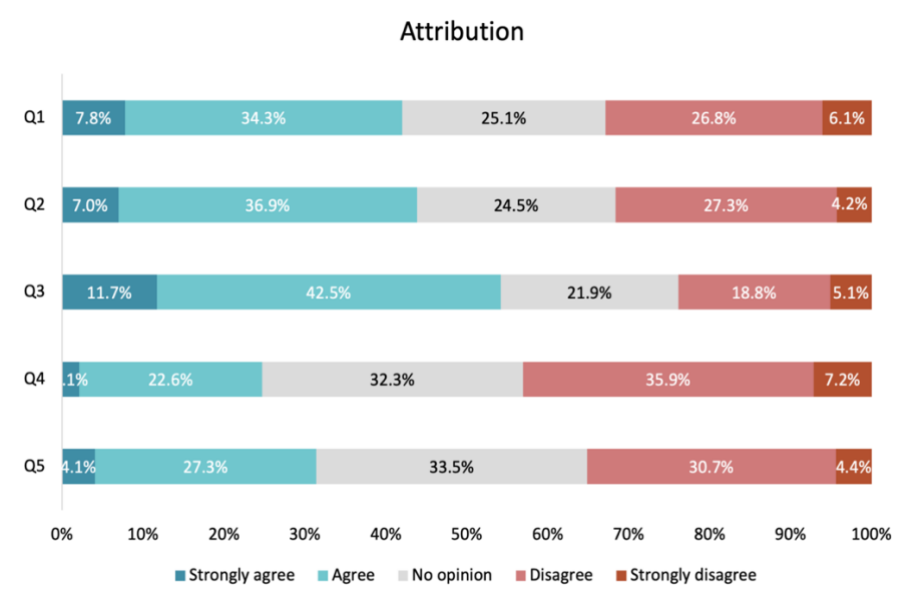


Figure 6.25 Attribution scale responses

6.7.5 Census

As discussed in the literature review, Census Irish language data, and subsequent official Irish language policies have, from 1996 to 2022, been represented by a single question – ‘can you speak Irish?’. As seen in the HLM analysis above, self-efficacy emerges as the dominant predictor of performance for participants, accounting for 43% of the variance, compared with the Census binary response, contributing only 1.5% towards explaining the variation in performance. Participants were asked about an alternative measure of the Census Irish language question based on assessing other skills, and using graded statements. The first statement, ‘A national census question on Irish language abilities should ask people to declare their abilities in the other skills (reading, writing, listening)’ (Q1), saw an overwhelming 80% of participants seeking an opportunity to declare Irish abilities in other skills. The second statement, ‘A national census question on Irish language abilities should ask people to declare the level of ability. For example, ‘I can express opinions in Irish’, ‘I can use basic phrases’, ‘I can speak fluently’, etc.’ (Q2), again, saw a majority (66.4%) agreeing. This suggests that asking a single question on Irish speaking ability is not only statistically proven to be unreflective of Irish knowledge, but that participants would like to have the agency to declare knowledge of the other Irish language skills.

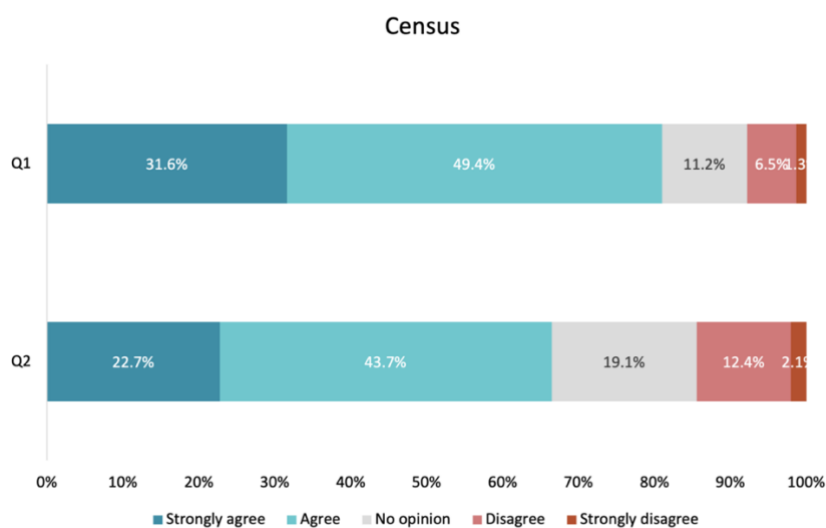


Figure 6.26 Census scale responses

6.7.6 Second languages and technology

Almost 95% of participants that reached the phase 2 question on second languages ($n=1564$) stated that they had learned another language in school apart from English and Irish. Over 1,200 participants had learned at least another language in school, with over 250 having learned more than one other language aside from Irish and English. The table below provides a breakdown of those that learned a single second language while at school.

Table 6.25 Languages learned by those that learned a single second language in school

Second language	No. of participants
French	1,001
German	165
Spanish	49
Latin	8
Japanese	1
Italian	1

Table 6.26, below, displays the 285 participants who stated they had learned more than one second language in school. Combinations with French are the most popular.

Table 6.26 Languages learned by those that learned two or three second languages in school

Combination of second languages	No. of participants
French and German	196
French and Spanish	33
French and Latin	28
French and Italian	6
French and Japanese	1
German and Spanish	1
German and Italian	1

German and Latin	1
German and Japanese	1
Spanish and Irish Sign Language	1
French, German and Spanish	8
French, German and Spanish	1
French, Italian and Latin	1
French, Spanish and Latin	1
French, German and Japanese	1
French, Latin and Greek	2
French, Spanish, German and Latin	1
French, German, Latin and Greek	1

Overall, French emerges as the highest frequency learned language, with 1,280 participants having learned either French as a language on its own or with other groupings of learned languages. 35% of the 1,564 participants completing the survey to this point stated they had used some form of technology to learn Irish, with the vast majority citing Duolingo.

Despite the breadth of other languages learned by the majority of participants, it is evident that the ‘parallelism that exists between English, Irish, and foreign language[s]’ continues to be underexploited (Ó Laoire, 2005b, p.108). We saw how knowledge of another language contributed less than 1% in explaining the variance in both performance and self-efficacy at phase 1, revealing a lack of metalinguistic knowledge.

6.8 Phase 2: Self-efficacy and Performance of experimental groups

6.8.1 Phase 2: Self-efficacy scale reliability

Following the phase 1 testing, 1,568 participants fully completed the same self-efficacy scales a second time. Scale reliability was checked using Cronbach’s alpha (α) and McDonald’s omega (ω). The combined

phase 2, 6-item grammar self-efficacy subscale ($\alpha = .98$; $\omega = .98$), 4-item reading sub-scale ($\alpha = .98$; $\omega = .96$), and 4-item listening sub-scale ($\alpha = .99$; $\omega = .99$) achieved a highly reliable internal consistency of $\alpha = .99$ and $\omega = .99$.

6.8.2 Phase 2: Predictors of performance

In the hierarchical regression conducted for all participants at phase 1, with performance as the dependent variable, self-efficacy emerged as the most significant contributor of variance (43%). However, due to the over-representation of high performers in the Control group, a similar analysis, post-intervention, focusing on each group, may provide a more nuanced analysis. For example, the impact of false results versus self-efficacy on predicting phase 2 test performance.

For this HLM analysis, performance on phase 2 was used as the outcome variable, with a five-step model created. At step one, self-efficacy, post-intervention, was entered. This would potentially indicate the influence of the manipulation. Actual performance results at phase 1 – unknown to the experimental groups at this point, but representative of abilities, was entered at step two. Self-efficacy, pre-manipulation, at phase 1 was added at step three. Step four saw the inclusion of global confidence – the pre-test declaration at phase 1. The final step included the composite score from each of the three attitudinal scales in phase 2. This ordering of predictor variables may establish whether abilities, perceived abilities or potentially manipulated self-efficacy, as well as attitudinal variables contribute to each of the groups' performance at phase 2. The group sub-samples are as follows: Control: $n=842$; High: $n=484$; Low: $n=175$.

The descriptive statistics for all variables, including the composite attitudinal values for three sub-scales: confidence; school experiences; and attribution, which includes reversed scoring for the negatively worded statements, are in table 6.27 below. Some interesting points to note are the low score for school experiences for the high-performing Control group ($M=2.84$, $SD=.71$) compared with the experimental

groups. The Low group, comprising lower-level performers, has the highest average level of confidence in Irish (M=3.13, SD=.54).

Table 6.27 Descriptive statistics for variables used in HLM analysis

Variable	Group	Mean	SD
<i>Performance P2</i> (out of 20)	High	14.52	2.97
	Low	10.87	2.62
	Control	18.36	1.80
<i>SE P2</i> (out of 6)	High	2.44	1.00
	Low	2.07	0.79
	Control	4.37	1.66
<i>Perf. P1</i> (out of 20)	High	13.36	1.35
	Low	8.51	1.38
	Control	17.68	1.63
<i>SE P1</i> (out of 6)	High	2.49	1.05
	Low	1.80	0.74
	Control	4.24	1.19
<i>Confidence</i> (out of 6)	High	3.02	0.53
	Low	3.13	0.54
	Control	3.03	0.71
<i>School exp.</i> (out of 5)	High	3.12	0.85
	Low	3.46	0.70
	Control	2.84	0.71
<i>Attribution</i> (out of 5)	High	2.97	0.71
	Low	2.79	0.69
	Control	3.03	0.71

The descriptive statistics for the only categorical variable, global confidence, are in table 6.28, below. Despite being in the upper middle quartile for results, the vast majority of the High group declare themselves as having ‘little confidence’ in their overall Irish skills. Even the Control group – all of which except five participants scored

at least 15 or over out of 20 – have almost a fifth of participants declaring as having ‘little confidence’, and just under a quarter as being ‘slightly confident’ in overall Irish skills.

Table 6.28 Descriptive statistics for the variable global confidence

Response category	High group		Low group		Control group	
	Frequency	%	Freq.	%	Freq.	%
No confidence	62	12.8%	60	34.3%	17	2%
Little confidence	234	48.3%	97	55.4%	148	17.6%
Slightly confident	126	26%	14	8%	208	24.7%
Somewhat confident	45	9.3%	3	1.7%	196	23.3%
Fairly confident	17	3.5%	0	0%	206	24.5%
Complete confidence	0	0%	1	0.6%	67	8%

6.8.2.1 Performance predictors in the High group

The assumptions for conducting a regression analysis were violated in the High group. The outcome variable was heteroscedastic and contained outliers. Again, the decision was taken to retain all data, leading to a HLM with 2000 bootstraps being conducted. The correlations for the variables in this HLM are in table 6.29, below. Self-efficacy at phase 2 and phase 1 strongly correlate ($r=.87$, $p<.001$). Between self-efficacy on both phases, and actual results at phase 1 – unknown to the participants at this point – demonstrate the strongest correlation with performance on phase 2 ($r=.51$, $p<.001$). The model was checked for multicollinearity, with all VIFs at an acceptable level, likely due to the amount of shared variance amongst the variables.

Table 6.29 Correlations for HLM predictors with phase 2 performance as the dependent variable (High group)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Perf P2	1										
2. SE P2	.33*	1									
3. Perf P1	.51*	.25*	1								
4. SE P1	.37*	.87*	.25*	1							
5. Glob1	-.16*	-.28*	-.07*	-.32*	1						
6. Glob2	.08*	.15*	.03*	.21*	-.58*	1					
7. Glob3	.18*	.24*	.17*	.36*	-.31*	-.19*	1				
8. Glob4	.19*	.45*	.08*	.41*	-.19*	-.11*	-.06*	1			
9. Conf	-.22*	-.41*	-.18*	-.44*	.14*	-.16*	-.23*	-.19*	1		
10. Sch.	-.22*	-.28*	-.18*	-.30*	.16*	-.22*	-.20*	-.09*	.34*	1	
11. Attr.	-.02*	.04*	.01*	.05*	-.03*	.06*	-.03*	.02*	.01*	-.04*	1

*p<.001

As can be seen in the table above, ‘Glob5’ is missing, representing ‘complete confidence’ in Global confidence in overall Irish abilities. None of the High group chose this as a response.

Table 6.30 High group phase 2 hierarchical regression with performance as the dependent variable

Model	B	β	t	sr ²	R ²	ΔR^2
Step 1: Self-efficacy (Phase 2)	12.16*	.33	1618.29		.11	.11
Step 2: Performance on Phase 1	-.48*	.46	-19.10		.30	.19
Step 3: Self-efficacy (Phase 1)	-.76*	.01	-30.83		.32	.02
Step 4: Global confidence					.33	.01
Constant	-.34*		-40.72			
Little confidence	-.15*	-.03	-18.46	-.019		
Slightly confident	.18*	.03	18.93	.019		
Somewhat confident	.37*	.04	29.07	.030		
Fairly confident	1.38*	.09	47.27	.076		
Complete confidence	-		-	-	-	-
Step 5: Attitudes	1.69*		47.27		.34	.01
Confidence statements	-.12*	-.02	-22.49	-.023		
School experiences	-.24*	-.07	-72.73	-.074		
Attribution	-.16*	-.04	-46.26	-.047		

*p<.001

The overall model explained 34% of the variance in performance at phase 2. At step one, Self-efficacy at phase 2 explained 11% of the variance in performance at phase 2 and was significant ($F(1, 968482) = 115061.12, p<.001$). Performance at phase 1, at step two of the model, accounted for a further 19% of the variance in phase 2 performance, and was significant ($F(2, 968481) = 210931.03, p<.001$). Two further perception predictor variables from phase 1 were added at steps three and four – Self-efficacy and Global confidence in Irish, respectively, accounting for a further combined 3% of the variation in performance at phase 2. Self-efficacy was significant ($F(3, 968480) = 153844.68, p<.001$); as was Global confidence ($F(7, 968476) =$

68004.30, $p < .001$). At step five, Attitudes were added, contributing only 1% towards explaining the variance in performance outcomes. The contribution was significant ($F(10, 968473) = 48910.19, p < .001$). Overall, phase 2 self-efficacy and actual performance at phase 1 contributed the most predictability in performance at phase 2 – a combined 30%. However, the addition of the other predictors accounted for only a further 4%, leaving 66% of the variation in performance unexplained.

6.8.2.2 Performance predictors in the Low group

Similar to the High group data, the outcome variable was heteroscedastic, leading to a HLM with 2000 bootstraps being conducted. The descriptive statistics and correlations for the variables in this HLM are in table 6.31 below. Again, self-efficacy at phase 2 and phase 1 strongly correlate ($r = .90, p < .001$). The model was checked for multicollinearity, with all VIFs at an acceptable level.

Table 6.31 Correlations for HLM predictors with phase 2 performance as the dependent variable (Low group)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Perf P2	1										
2. SE P2	.21*	1									
3. Perf P1	.29*	-.05*	1								
4. SE P1	.15*	.90*	-.07*	1							
5. Glob1	.16*	.09*	.04*	.11*	1						
6. Glob2	.07*	.29*	-.05*	.31*	-.33*	1					
7. Glob3	.01*	.20*	.05*	.25*	-.15*	-.04*	1				
8. Glob4	-.08*	.38*	-.14*	.40*	-.09*	-.02*	-.01*	1			
9. Conf	-.22*	-.32*	.01*	-.32*	-.16*	-.17*	-.14*	.05*	1		
10. Sch.	-.26*	-.28*	-.15*	-.26*	-.05*	-.20*	-.01*	.02*	.31*	1	
11. Attr.	-.05*	.12*	-.07*	.12*	.03*	.02*	-.01*	.08*	.05*	.01*	1

*p<.001

Table 6.32 Low group phase 2 hierarchical regression with performance as the dependent variable

Variable	<i>B</i>	β	<i>t</i>	sr ²	<i>R</i> ²	ΔR^2
Step 1: Self-efficacy (Phase 2)	9.46*	.21	17.19		.04	.04
Step 2: Performance on Phase 1	4.61*	.30	3.59		.13	.09
Step 3: Self-efficacy (Phase 1)	4.78*	-.13	3.67		.13	.00
Step 4: Global confidence					.17	.04
Constant	4.51*		3.45			
Little confidence	.74†	.14	1.69	.130		
Slightly confident	.64†	.07	.78	.060		
Somewhat confident	-.47†	-.02	-.30	-.023		
Fairly confident	-	-	-	-	-	-
Complete confidence	-3.93†	-.11	-1.38	-.11		
Step 5: Attitudes					.20	.03
Confidence statements	-.48†	-.10	-1.25	-.097		
School experiences	-.48†	-.13	-1.66	-.129		
Attribution	-.17†	-.05	-.64	-.050		

* $p < .001$

† $> .05$

The overall model explained only 20% of the variance in performance at phase 2. At step one, Self-efficacy at phase 2 explained 4% of the variance in performance at phase 2 and was significant ($F(1, 350173) = 15393.52, p < .001$). At step two of the model, Performance at phase 1 accounted for a further 9% of the variance in phase 2 performance, and was significant ($F(2, 350172) = 153732.18, p < .001$). At step three, Self-efficacy at phase 1 was entered. While being significant ($F(3, 350171) = 17774.99, p < .001$) contributing nothing to explaining the variance in performance scores. Global confidence in Irish was included at step four of the model, explaining a further 4% of the variation, and being significant ($F(7, 350167) = 10032.87, p < .001$). At step five, Attitudes were added, contributing only 3% towards explaining the variance in performance outcomes. The contribution was significant ($F(10, 350164) = 8588.88, p < .001$). Overall, it appears

that for the Low group, the predictors that contributed the most in explaining the performance in the High group – self-efficacy and previous performance – only explaining 13% of the variation in performance at phase 2. The total contribution of the predictors in this model only explain 20% of the variation in scores.

6.8.2.3 Performance predictors in the Control group

The outcome variable for the Control group achieved normality, thus not requiring a bootstrapping of the coefficients. All VIFs were acceptable, none of which breached the value of 15, below the threshold of 20. The descriptive statistics and correlations for the variables in this HLM are in table 6.33 below. Self-efficacy significantly and highly correlated on both phases ($r=.95, p<.001$). Performance on phase 1 moderately correlates with performance on phase 2 ($r=.57, p<.001$), only slightly higher than for the High group that received deflated results ($r=.51, p<.001$). Considering that the Control group received actual results, and that self-efficacy across phases strongly correlated, it would be expected that performance would correlate more strongly too.

Table 6.33 Correlations for HLM predictors with phase 2 performance as the dependent variable (Control group)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Perf P2	1											
2. SE P2	.44*	1										
3. Perf P1	.57*	.43*	1									
4. SE P1	.43*	.95*	.42*	1								
5. Glob1	-.24*	-.48*	-.22*	-.50*	1							
6. Glob2	-.04†	-.25*	-.04†	-.28*	-.27*	1						
7. Glob3	.03†	.05†	.02†	.06^	-.25*	-.32*	1					
8. Glob4	.24*	.47*	.20*	.50*	-.26*	-.33*	-.31*	1				
9. Glob5	.14*	.39*	.16*	.41*	-.14*	-.17*	-.16*	-.17†	1			
10. Conf	-.29*	-.42*	-.20*	-.45*	.30*	.11**	-.08**	-.29†	-.12*	1		
11. Sch.	-.19*	-.33*	-.16*	-.33*	.23*	.06†	-.04†	-.18†	-.16*	.33*	1	
12. Attr.	.03†	.09**	.02†	.10**	-.04†	-.02†	-.03†	.05†	.10*	-.01*	-.13*	1

*p<.001 **p<.01

^p=.05 †>.05

Table 6.34 Control group phase 2 hierarchical regression with performance as the dependent variable

Variable	<i>B</i>	β	<i>t</i>	sr ²	<i>R</i> ²	ΔR^2
Step 1: Self-efficacy (Phase 2)	15.42*	.05	71.32		.19	.19
Step 2: Performance on Phase 1	7.74*	.03	14.32		.37	.18
Step 3: Self-efficacy (Phase 1)	7.76†	.13	14.39		.37	.00
Step 4: Global confidence					.39	.03
Constant	6.96*		11.93			
Little confidence	1.84*	.40	4.91	.132		
Slightly confident	2.19*	.53	5.66	.153		
Somewhat confident	2.15*	.51	5.31	.143		
Fairly confident	2.37*	.57	5.43	.146		
Complete confidence	2.18*	.33	4.52	.122		
Step 5: Attitudes	8.22*		10.90		.40	.06
Confidence statements	-.33†	-.08	-2.63	-.071		
School experiences	-.02†	-.01	-.36	-.009		
Attribution	-.03†	-.01	-.37	-.010		

* $p < .001$

† $> .05$

The overall model explained 40% of the variance in performance at phase 2. At step one, Self-efficacy at phase 2 explained 19% of the variance in performance at phase 2 and was significant ($F(1, 840) = 197.82, p < .001$). At step two, Performance at phase 1 accounted for a further 18% of the variance in phase 2 performance, and was significant ($F(2, 839) = 242.11, p < .001$). At step three, Self-efficacy at phase 1 was entered. While being significant ($F(3, 838) = 162.50, p < .001$) contributing nothing to explaining the variance in performance scores. Global confidence in Irish was included at step four of the model, explaining a further 3% of the variation, and being significant ($F(8, 833) = 67.44, p < .001$). At step five, Attitudes were added, contributing only 6% towards explaining the variance in performance outcomes. The contribution was significant ($F(11, 830) = 50.10, p < .001$). Overall, it appears that for the Control group, the predictors that contributed the

most in explaining the variation in performance are self-efficacy at phase 2 and performance on phase 1, explaining a combined 37%. The remaining variables only contribute a further combined 3%. It is noteworthy that self-efficacy on phase 1 contributes nothing in explaining the variance despite correlating strongly with self-efficacy on phase 2 in table 6.34. Overall, global confidence in Irish skills explains only 3% of the variance. Similar to the High and Low group HLM analyses, a large amount of the variance remains unexplained by the variables in the model (60%).

In summary, the HLM analysis of performance at phase 2, reveals that self-efficacy at phase 1 contributes very little, to no explanatory value for all groups when compared with self-efficacy at phase 2. For the Control group, who received their actual results before declaring their self-efficacy a second time at phase 2, performance on phase 1 is a large contributor, at 18%. For all groups, attitudes and global confidence provide minimal explanatory relevance on performance, save for attitudes for the Control group (6%). The models for all three groups leave a large percentage of the variance unexplained – between 60% and 80%, suggesting that other confounding variables such as elasticity of long term memory reserves or the IDs discussed in Chapter 3, for example, may be influencing factors.

6.9 Participant comments

Once the manipulation and actual results were revealed at the very end of the survey, participants were given the opportunity to provide any comments related to the test and survey, or on the Irish language in general. Participants were assigned identifiers ‘P’ followed by a number between 1 and 1501, based on the sample of those that completed the entire instrument. Where relevant, experimental or control group membership and/or full test score is highlighted. This is to reference comments with measured abilities via performance on the 40-item Irish test.

158 participants left a final comment, from which 70 contained qualitative information which excluded comments of thanks and good luck. 15 comments specifically highlighted the effect of the false negative, deflated results:

‘really annoyed I did so badly and totally lost motivation the second time around’ (P1388);

‘I was shook when it said how poorly I was doing half-way through (P1100)’;

‘I was completely disheartened.... it definitely throws your confidence when you think you score badly’ (P929); and

‘confidence dashed after round 1 almost lost the will to continue with test’ (P5).

All of these comments came from those in the High group that received the negative intervention. No comments specifically mentioned the positive influence of inflated results for the Low group.

Some participants spoke about their negative experiences learning Irish in school, with one person describing it as ‘grim’ (P364, High group), and another suggesting ‘due to schooling, *all* my feelings about Irish are negative’ (P176, Low group). Others spoke of how the changing of teachers as they moved from primary to secondary school as altering their once positive opinion of Irish: ‘if anything my Irish got worse in secondary school because I was doing well enough in Irish classes that I wasn't a concern for the teacher’ (P1376, High group). Another stated ‘we went to Irish classes as part of the curriculum, but the teacher never did any Irish with us and the school let this slide’ (P651, High group).

A number of the critical comments were worded in a more general, often intuitive sense. For example, ‘the standard Irish we learn in school is not a proper language’ (P852, High group); ‘I suppose that was the way we learned backed in late 80s in primary school.... it was all verbs and sentences’ (P198, High); or ‘I blame [my abilities] on the curriculum, which taught it like a dead language’ (P1450, Low group).

A number of comments expressed surprise at the results received:

‘... am pleasantly surprised at how much I remember – I did my Leaving Cert in 1980!’ (P1374, Control group – 34/40);

‘I’m not so bad after all. This might encourage me to try to use my Irish a bit more often’ (P642, Low group);

‘I enjoyed this.. nice to know I've retained my *Gaeilge*’ (P692, Control group – 36/40); and

‘I had obviously retained some Irish from my school days’ (P542, Control group – 36/40).

Even with above average scores, some participants believe that performance outcomes are not attributable to their Irish residual knowledge:

‘I think my score of 30 greatly overestimates my skill level’ (P867, High Group); or

‘I would still say I'm not confident in Irish having gotten 38/40’ (P276, Control group).

Some participants saw the value in being retested after long periods outside education (‘This has given me some confidence. I'm not as bad as I thought I was’ (P1042, Control group – 33/40)), leading some to comment on using this as a prompt to relearn Irish:

‘That might encourage me to be more confident and open to a refresher course’ (P466, Low group);

‘if could do those little pieces once a week, I think my standard would improve’ (P1006, High group);

‘I'm surprised with these results and hopefully they will give me the push I need to get started [learning Irish again]’ (P837, Control group – 37/40); and

‘Not as bad as I thought I would be. Might do Duolingo if Irish is available’ (P5, Low group – 29/40).

One respondent commented on how confidence directly affects their willingness to communicate: ‘I would be confident in my ability to listen and understand, but I feel that my grammar is poor and that affects my confidence in speaking and especially writing *as Gaeilge*’ (P695, Control group – 35/40). One participant remarked on the ethos of Irish immersion schools:

‘I also think that Irish speaking schools are problematic in that many are heavily Catholic. This creates a Sophie's choice when considering schooling options for children. Do you want to present them with an opportunity to learn Irish or do you want to give them the opportunity to attend a more diverse school that is inclusive of all religious beliefs?’ (P1376, Control group – 37/40).

The comments, though limited in number, confirm that falsely deflated results affect confidence in the phase 2 test. The high scorers in the Control group, despite performing well overall, appeared surprised at their achievements. This indicates that residual knowledge of Irish is not only retained but may be unacknowledged. Finally, some participants welcomed the opportunity to test their knowledge, indicating that it would motivate them to build on their existing knowledge through a course or technology.

6.10 Conclusion

This chapter has described in detail the responses to the combined Irish language proficiency test, self-efficacy and attitudinal scale instrument. The chapter began with an explanation of the dataset and sub-sets, which ranged from 2,601 to 1,501 participants, used throughout the chapter. The methods for dealing with extreme outliers were explained, before a breakdown of the three groups based on full completion of the instrument was presented. The unequal group numbers, as discussed, would have implications for analytic compromise throughout this

chapter. The use of non-parametric statistical analyses was used as a means to overcome the unequal group distributions.

Demographic information from participants revealed that over twice as many females than males took part in this study. We saw that for two thirds of participants, the highest examination taken in Irish was the Leaving Cert, and that over 60% of participants had not studied Irish formally in over 20 years. We saw that 74% of the participants ($n=1,116$) that completed the instrument answered, 'yes' to the Census question 'can you speak Irish?', but over half of these spoke the language 'less often' than weekly or 'never' spoke the language. This again brought us back to one of the wider issues of inconsequentially measuring language skills (see Howard and Dailey, 1979). In the absence of a follow-up Irish speaking test, the validity of self-assessment must take into account these potential perceptual inconsistencies.

The chapter then discussed in detail, using IRT, the efficacy of the Irish proficiency test. We saw that just from the range of scores that most participants were achieving at least over 16 out of 20 on both phases, indicating that the test was ineffectual at measuring a wider range of abilities. The use of IRT allowed for an analysis of the latent traits such as ability and difficulty. Using item characteristic curves, test information functions and factor scores, it was evident that the initial raw scoring data corresponded to the IRT analysis that both phases of the test were too easy for the sample population. This is likely to be partially attributable to the use of random sampling as a recruitment method.

The chapter then turned its focus towards self-efficacy, beginning with a confirmation that reliability was very high for the full scale and its individual sub-scales. We then saw that self-efficacy is a strong predictor of performance on the full test, with discrepancies only emerging with the reading sub-scale. Self-efficacy was then analysed for its relationship with omnibus measures of Irish skills and the allocation of resources. Two hierarchical linear regressions were

carried out to determine the magnitude of predictor variables such as age, gender, previous abilities, education, etc. on both performance on and self-efficacy declarations at phase 1.

One of the core research questions, related to the manipulation procedure, was then discussed. We saw how performance on phase 2 increased significantly for the Low group, while changes in self-efficacy were statistically significant, particularly for those receiving the negative intervention. The allocation of time spent on phase 2 was also significant for the groups following the revelation of scores, falsified or actual. An analysis of the attitudinal and attributional scales followed. Language attrition emerges as a factor for around 40% of participants, with recall or retrieval being an issue for over 50% of respondents. School experiences and how outcomes are attributed were deliberated. We also saw how the vast majority of participants would like to have an opportunity to express other Irish language skills on the national census, as well as gradations of abilities. Other learned languages were presented for context.

The chapter closed with a post-manipulation analysis of performance predictors for all groups. HLM was utilised to determine the most salient contributors towards performance outcomes. The results reveal a significant amount of variance being unexplained. Participant comments were then analysed, further showing in some cases how perceptions of abilities are misaligned with actual competencies. The final chapter will now address the research questions that have directed this research.

7. Discussion and conclusion

7.1 Introduction

This study set out to investigate the accuracy of self-assessed Irish language abilities compared with actual performance on an Irish language test, as well as the role that self-efficacy as a measure of these abilities plays in Irish language perception and performance. Furthermore, the research aimed to determine whether self-efficacy could be manipulated to affect a number of outcomes, thus underscoring the filtering magnitude of perception. As census results have shown on a continual basis, self-assessed Irish language knowledge, represented as speaking abilities, is relatively low for a first official language (CSO, 2017b). This research represents an important step in understanding the gap between second language (L2) input – for most, over 2,000 classroom hours – and active Irish language output, or more importantly perceived Irish language abilities. As has been discussed, perceptions of L2 attrition can be over-estimated, leading to a belief that a learned L2 is no longer accessible. Evidence of this phenomenon has emerged in the limited research carried out to date in the Irish language context (see Barry 2020; 2021; 2022; Murtagh, 2007). Furthermore, self-efficacy, the theoretical framework binding this study has been continuously proven to be a more robust metric of performance behaviour than actual abilities. This outcome raises numerous questions around aspects of the L2 acquisition process, particularly the implications for low-efficacy students following a negative performance in the L2. A question worth considering is, is self-percept, in its capacity as a filtering mechanism (Bandura, 1995), an advantage or an obstacle when it comes to accessing a second language? This question potentially positions language self-efficacy and language attrition on an intersect. Repositioning the Irish language situation in Ireland in a self-efficacy framework is a new concept in the field of self-efficacy research.

The gap in research in this area makes the objectives of this study all the more challenging. The first challenge was to create a self-administered, two-phase, general Irish language proficiency test covering aspects of the Irish language likely encountered on Irish language curricula. In the absence of such a test specific to the requirements of this research, a test covering the levels of the terminal examination had to be created, reviewed, piloted and refined. The second challenge was to develop an Irish language self-efficacy scale representative of Irish skills being tested on the two-phase test. Again, in the absence of any Irish language task-specific self-efficacy scales, the creation of a robust scale involved both intuitive and empirical considerations. The third challenge was to engage target groups to participate in this research. The emergence of Covid-19 not only affected the development of the test itself but also the approach to participant recruitment, adding a largely uncontrollable element. From a testing perspective, the uncertainty around in-person testing meant that self-administration of the instrument became the only viable, safe option. This created its own series of compromises, such as not testing speaking ability. The final challenge in conducting this research was to convincingly manipulate self-efficacy in participants in such a manner that the anticipated evidence could be used as a springboard for further research in Irish language acquisition, retention, and reactivation.

This chapter offers a comprehensive discussion of the findings outlined in the previous chapter, and an exploration of the research questions that have guided this study. The chapter is structured as follows: the first section provides a sequential discussion of the findings relative to each research question. Following this, the implications from an individual, governmental, and societal level will be discussed. The chapter will close with a reflection on the limitations of this study, followed by suggestions for future research.

7.2 Discussion on findings relative to the research questions

The seven research questions (RQs) that guided this research will now be examined sequentially.

7.2.1 Self-efficacy and performance

RQ 1: How accurate are Irish language self-efficacy ratings as a predictor of performance on an Irish proficiency test?

RQ 1.1: What is the direction of the relationship between self-efficacy and performance?

The average composite Irish self-efficacy score for phase 1 for all participants was 3.5 (SD=1.4) out of 6, with 6 representing complete confidence. The average score on the phase 1 part of the test was 15.04 out of 20 marks (SD=3.53). The simple regression model which set self-efficacy as a predictor of performance indicated a strong, positive relationship between the variables ($r = .66$) and revealed that self-efficacy could explain 43% of the variation in scores. This result confirms the widely held premise that self-efficacy is a strong predictor of performance (Hendricks, 2014), with scores out of 20 increasing by 1.65 marks each time the self-efficacy composite score increases by one. If one considers the meta-analysis conducted by Multon et al. (1991), where self-efficacy in a number of academic domains were shown to account for approximately 14% of the variance in academic outcomes, or the claim by Pajares (2006, p.343) that ‘any psychological factor capable of explaining 25% of the variance in most academic outcomes merits attention’, then the finding in this study is all the more impressive.

As discussed in the methodology chapter, the over-representation of those using the Irish language, be it in a teaching capacity or as those with a genuine interest in learning or relearning Irish, compared with participants that have perhaps not used or considered using the language since leaving school, has skewed the data towards the higher end of the results. The results of the IRT analysis of the Irish tests themselves, revealing that the test is likely measuring below-average abilities, further underline a potential residual effect of this

overrepresentation. Therefore, a generalisation of any outcomes which relate specifically to performance data in this study should be considered with caution.

RQ 1.2: How accurate is the relevant sub-scale of self-efficacy as a predictor of Irish language performance on a:

- grammar test;
- listening test;
- reading test.

The three sub-test average scores were as follows: grammar – 5.54 (SD=2.09) out of 8; reading – 4.67 (SD=1) out of 6; and listening – 4.83 (SD=1.33) out of 6. The self-efficacy scale average scores out of six were as follows: grammar – 3.72 (SD=1.46); reading – 3.56 (SD=1.47); and listening – 3.21 (SD=1.47). The analysis of each self-efficacy sub-scale as a predictor of its relevant test revealed that both grammar and listening scales are significant predictors of grammar and listening performance, accounting for 40% and 25% of the variation in scores respectively. The lowest self-efficacy average rating was for the listening task, regarded as less controllable than reading passages or identifying grammatically correct sentences, largely due to the inability to access a complete written text or employ decoding techniques such as skimming (Lund, 1991). Despite this, the average score is relatively high, with participants scoring 4.83 out of 6. It is likely that this discrepancy in listening self-efficacy and performance is due to the content of the listening test, as the IRT analysis showed.

Reading self-efficacy, although significant, explained only 5% of the variance on the reading test. In fact, the relationship between these variables was weak ($r=.21$). The discrepancy in predictability between reading perceptions and reading test performance is unexpected when taken in comparison with grammar and listening outcomes. The reliability of the reading self-efficacy scale was high ($\alpha =.98$, $\omega = .98$), which further suggests that participants' average self-efficacy score was likely below reading performance level. The likely explanation is

that, with an average score on the reading section at phase 1 at 4.67 out of 6, and the IRT analysis showing that the difficulty parameters for all six items provided the most information on below average abilities, the reading test was too easy for the population tested.

A potential explanation beyond the possible oversimplicity of the test could be afforded to second language attrition research which states that passive skills such as reading and listening are less susceptible to attrition (see Bahrck, 1984, de Bot et al., 2004, de Bot and Stoessel, 2000, Hedgcock, 1991, Weltens, 1989). Less cognitive processing is required to decode a text, written or oral, compared with the levels of activation necessary for producing the language (Schmid and Mehotcheva, 2012). Furthermore, Gardner et al. (1985) refer to the period of non-use as an incubation period in which the L2 actually becomes entrenched as part of residual processing (Hedgcock, 1991). The findings here suggest that there is a divergence of perceptions within passive skills themselves. The perceived difference between passive reading skills versus listening skills in the Irish context is quite pronounced, and unfounded when performance is considered. A methodological explanation could be that being asked to rate your confidence on understanding the main idea or details of a text differs greatly from being asked whether you can choose the correct response from three options. To fully align the scale with a performance would require a more efficient means to measure “understanding”. It is likely that the removed B2 texts would have provided a more accurate assessment of “understanding” as the text evolves the advertisement format towards a denser use of Irish language where multiple-choice answers are more implicit, thus requiring a more intuitive comprehension.

A final explanation worth considering, and one which is equally applicable when it comes to the research questions addressing predictor variables, brings us back to Chapter 3. The discussions on individual differences, cognition, and memory that all contribute to successful second language acquisition will always remain a partially elusive suite

of variables in experimental L2 research. To control for factors such as personality, learning styles, affect, working memory, perceived attrition, etc. would call for a much more comprehensive yet demanding data collection instrument. The absence of such controls in this study means that one can only speculate as to the impact such factors have on each participant.

7.2.2 Self-efficacy versus omnibus measures

RQ 2: Do single omnibus language questions represent performance when compared with self-efficacy task-specific scales?

An important thread that emerges in this research is how reducing Irish knowledge self-assessment to a single omnibus question in the Census potentially has the parallel effect of reducing agency by denying those with stronger skills in reading, writing, or listening the opportunity to express those skills. With the only official metric of Irish abilities reduced, more or less, to a single question on speaking abilities, the viability of the data has been previously questioned (Darmody and Daly, 2015, Walsh, 2022). Factors such as ideology have been identified in Barry (2020, p.182) as creating a self-assessment filter effect where one participant with limited speaking skills used the Census question ‘to identify myself as someone that has a past in Irish versus someone who is a non-national, and probably doesn’t have it’. The wider population-wide implications for how citizens interpret this question are unknown, and would require further investigation.

7.2.2.1 Global confidence in Irish skills

Two omnibus questions were posed to participants in this study: one relating to overall confidence in general Irish skills, and the other, a replication of the principal Census of Population question on Irish – unchanged since 1996: ‘can you speak Irish?’. The global confidence question at phase 1 showed an average of 3.07 out of 6 (SD=1.37) for all 1,679 participants that completed this phase. Using Pearson’s correlation, the relationship between global confidence and performance was strong, positive, and statistically significant. The

effect size was slightly lower ($r=.61$) than that of the composite self-efficacy score and performance discussed above ($r=.66$). In fact, global confidence and self-efficacy correlate strongly ($r=.85$), indicating that both measures are potentially serving a similar function. This finding calls into question the premise that self-efficacy and performance have a statistically stronger relationship over an omnibus question on general confidence (Pajares, 1996). However, beyond these measures of association, the predictive power of global confidence on performance was assessed in the various HLMs conducted. At phase 1, global confidence, inputted at step two, only contributed 2.9% in explaining the variation in performance compared with 43% for self-efficacy. The phase 2 models which were analysed at the group level, revealed that global confidence only contributed between 1% and 4% of the variance across the three groups. This reveals that the omnibus measure of global confidence in Irish skills does not provide adequate predictive power for performance outcomes.

7.2.2.2 The Census Irish language question

For performance outcomes relative to the Census question on Irish speaking abilities, a t-test revealed a significant difference and large effect size ($t(694.44) = 21.75, p < .001, d = 1.24$) in scores between the self-declared speakers ($M = 16.08, SD = 2.97, n = 1,248$) and non-speakers ($M = 12.22, SD = 3.25, n = 431$) of Irish. The difference in average scores for both groups, and the large effect size indicate that performance on an Irish grammar, reading and listening test is reflective of self-declared speaking abilities, i.e., a self-assessed speaker of Irish is likely to score higher in the test than a non-speaker. Even when it comes to the Census question and self-efficacy, the transformed data show that self-efficacy is likely to be higher in those self-declaring as speakers ($M = 0.56, SD = 0.16$) of Irish than non-speakers ($M = 0.31, SD = 0.16$); $t(2600) = 37.6, p < .001, d = 1.61$. However, similar to the global confidence variable, the predictive power of the Census question is exposed in the phase 1 HLM as being

minimal, contributing only 1.5% in explaining the variation in performance scores for all participants on the first test.

The outcomes above show that in the Irish language context, omnibus measures of Irish abilities, such as those used in official statistics, while appearing to demonstrate strong associative power with performance outcomes, provide minimal predictive relevance on performance. The simple regression discussed at research question 1 revealed that self-efficacy explains a striking 43% of the variation in performance outcomes at phase 1. Decontextualised measures, devoid of the task-specificity of self-efficacy do appear to ‘sacrifice [the] predictive power’ of performance behaviours (Bandura, 1997, p.243). The implications beyond this study may have consequences at a wider societal level, raising two important points: the Census Irish language question is not a predictor of wider Irish language knowledge; and an opportunity to declare this knowledge could lead to a more engaged citizen when it comes to Irish language. For example, self-declaring as a non-speaker of Irish is unlikely to motivate any further, potential reflection on non-speaking skills.

7.2.3 Resource allocation

RQ 3: Do Irish language self-efficacy beliefs predict the allocation of time dedicated to an Irish language task?

Using the inferred data in this study from the 1,679 participants that completed phase 1, participants spent just under 13 minutes on average on the phase 1 test (12 min, 58 secs; SD=6 min, 4 secs). Regressing self-efficacy onto phase 1 test time, a weak correlation emerged ($r=.18$), and explained only 3% of the variation in time spent by participants on the test. This suggests that a participant’s level of Irish self-efficacy has very minimal predictive power on time allocated to an Irish test. This finding contradicts empirical evidence that, for example, high performers spend more time compared with low performers who spend less time on completing a test or overcoming obstacles, i.e., a positive effect (Bandura, 2012). It even runs contrary to the control

theory perspective that high performers naturally withdraw resources due to factors such as overconfidence or under-challenge, i.e., a negative effect (Vancouver and Kendall, 2006). The results above suggest that resources allocated on an Irish test are almost independent of how a person self-assesses themselves at the task level. This may appear a simplistic observation in light of the research highlighted here, which suggests there is an associative relationship, be it negative or positive. It is evident that other confounding variables may be uncontrolled for. While it is important to consider the inferred data employed in this analysis, it is unlikely that actual data in this context would provide wildly varying results, especially if we are starting from a 3% baseline in explaining time variation. One possibility worth exploring in future research is the use or absence of self-regulation strategies. It is evident from RQ1 that self-efficacy does predict performance. Therefore, the predictive gap between self-efficacy and time allocated can only be explained by a confounding variable, of which self-regulation strategies in Irish represents a robust, potential catch-all. For example, a key trait in the 'good language learner' is metacognition and its focus on strategising and resource planning (Graham, 2007, p.81). The participant overview tables revealed that almost 79% of 1,501 participants last took an Irish exam over a decade ago, with over 32% having last taken an Irish exam over 30 years ago. This data suggests that for the great majority of participants, Irish exam preparation and strategising, is a skill that has not been considered or utilised in quite some time. A future study should consider controlling for strategising by, for example, assessing an equal grouping of recent school-leavers and a group of those that have left education a decade or so previously. It is likely that data taken from recent school-leavers may provide a higher degree of predictability when it comes to time allocation relative to Irish self-efficacy beliefs.

7.2.4 Manipulating self-efficacy

RQ 4: Does manipulated performance and false comparative feedback have an effect on:

- Performance
- Time allocation
- Self-efficacy

In the absence of any language self-efficacy manipulation studies bar one in the Irish context (see Barry, 2021), this study sought to determine if two sources of self-efficacy, enactive mastery experiences and social persuasion, could be manipulated to influence performance and time spent on the phase 2 test, and phase 2, pre-test self-efficacy. Using results from the phase 1 test, participants were unknowingly assigned to a control or one of two experimental groups. Using the data from those that completed the full instrument ($n=1,501$), the Control group, scoring between 0 and 4 or 16 and 20 out of 20, contained 842 participants. The Low group which scored between 5 and 10, comprised 175 participants. The High group which scored between 11 and 15, comprised 484 participants. The manipulation intervention was based on the experimental groups receiving a falsely inflated score and comparative feedback immediately following the phase 1 test, with the Control group receiving their actual score.

The analysis shows that for performance, all groups saw a statistically significant increase in average marks between phase 1 and phase 2 tests. The Wilcoxon test for changes in the median score changes for each group revealed that the Low group had the most substantial change in performance following the positively worded manipulation, with an average increase in score of 28%, representing 2.37 marks out of 20. It appears that the positive intervention aimed at increasing perceptions of self-efficacy is the most effective intervention for influencing Irish language performance. The High group, despite having received the negatively worded intervention, improved their performance, representing a counternarrative to the traditional view that self-efficacy is positively related to performance. However, as McAuley et al. (1999) have shown, negative manipulations of self-efficacy do not guarantee a parallel effect on performance. The control theory view (see Powers, 1991) that a negative feedback loop is

employed to reduce performance discrepancies may be a factor in this study. For example, the High group are already performing above average on phase 1, and may in fact be more amenable to addressing the perceived discrepancies in performance and outcomes. As Vancouver et al. (2001, p.605) state, ‘the role of dissatisfaction is more complex in control theory’, and as such would require a widening of the investigative scope that is beyond this study.

For resource allocation, taken as time in seconds spent on each test, all groups spent less time on the phase 2 test. As already highlighted in this discussion, self-efficacy is by no means a predictor of time allocated. Therefore, potentially manipulated self-efficacy is just as unlikely to influence time spent on phase 2. The fact that each group spent less time on the phase 2 test adds further credence to the hypothesis that exam strategising may be a factor in phase 1 time results. By phase 2, all participants have become familiar with both the layout and the process of engaging with the Irish language in an exam setting. A longitudinal approach, such as a follow-up test two months later may provide for more calibrated time data.

Declarations of self-efficacy in phase 2 following the intervention were also analysed to determine the potential influence of a manipulation. The High group saw an average self-efficacy score decrease of 13%, while the Low group had an increase of 2% and the Control group saw an increase of 3% in self-efficacy scores. It appears that the negative manipulation does influence self-efficacy declarations in the High group, highlighting the potential for negative efficacy spirals at the SLA phase if not attended to. Whereas Bandura (1997) suggests that the Low group should have greatly increased self-efficacy beliefs, research in second language self-efficacy suggests that an entrenched interpretation by individuals that they do not possess the requisite resources can potentially lead to an over-arching negative association with the task (Piniel and Csizér, 2013). Furthermore, a once-off performance outcome may be less likely to lead to significant changes in self-efficacy. In a manipulation study, Bouffard-Bouchard (1990)

notes that the influential cues provided by teachers through methods such as expert modelling or continuous feedback (Hutchinson et al., 2008) and peers through social comparison are essential for building self-efficacy. The absence of these in a small-scale study such as this may explain the inconsequentiality in self-efficacy changes.

In summary, the manipulation of self-efficacy through false results and false comparative feedback has the most effect on the performance outcomes of the lower-level performers, and the self-efficacy of the High group. The effects of the manipulation are minimal on resource allocation. The minor increases in self-efficacy in the Low group suggests that Irish self-efficacy beliefs may in fact be less dynamic for lower level performers than other academic domains. These perceptions of Irish language abilities appear to be embedded regardless of performance outcomes, thus failing to encourage reappraisals of abilities. The wider implications are that if low performers can be convinced to activate a level of Irish knowledge that has remained at the residual level since school, then perceptions of Irish language attrition can be superseded by an acknowledgement that the language is not “lost”. Interventions designed for the purpose of reactivating this knowledge can be created with the aim of teaching and encouraging language retrieval.

7.2.5 Predictors of self-efficacy and performance

RQ 5: Which variables predict self-efficacy of Irish language skills?

RQ 6: Which variables predict performance on an Irish test?

To fully consider these questions, a number of analyses involving numerous variables were carried out, principally as a series of HLMs over both phases. Other analyses were used to assess the magnitude of demographical or attitudinal variables. From a theoretical perspective, gender was singled out as a comparative for previous research. Age, a variable that has not been researched in previous language self-efficacy studies was also considered.

7.2.6 Demographic predictors

The negligible results for gender, both as part of the phase 1 HLM and as t-tests assessing the difference in average scores, it is safe to assume that gender is not an influential variable in self-efficacy declarations or performance outcomes in this study. While insights into gender as a factor in self-efficacy are relatively scarce, previous research has shown that females exhibit higher self-efficacy in arts subjects such as languages (Pajares and Valiante, 2006). Despite the large representation of females in this study, gender appears to have very minimal influence in the Irish language context. A future study seeking to further research gender and Irish self-efficacy or performance, could focus on measuring the effect the four sources of self-efficacy have on outcomes to generate a self-efficacy profile based on gender. However, this assessment would be replete with measurement difficulties. Capturing self-efficacy of a specific task is difficult in itself to control for without introducing the measurement of outcomes relative to gender and vicarious experiences, for example. A highly controlled time-intensive environment would be essential. However, the issues with adequately assessing attribution in this study only highlight measurement issues, where between a fifth and a third of participants answered 'no opinion' for each of the questions, suggesting interpretation issues with some of the concepts.

Age does emerge as an influential variable for both self-efficacy and performance. Both ANOVAs, analysing the difference in average scores between each of the five age categories, revealed significant differences between the age groups. For declarations of self-efficacy, differences emerged for all age categories, suggesting that age has an effect on how participants declare their Irish language abilities. For example, the youngest age category – 18-29 years – exhibit the highest average score, by some distance: 4.35 (SD=1.31) out of 6, suggesting that confidence in task-based Irish language abilities is higher in recent school-leavers compared with, for example, the 50-64 years age group who scored 3.24 (SD=1.26). This may be down to a recency or

confidence bias based on the short length of time since leaving school, although research from Murtagh (2003) contradicts this view, whereby recent school leavers underestimated abilities. However, that assessment was based on a single question encompassing the active skills associated with the Leaving Certificate: speaking and writing. The inclusion of those sub-skills in this study would likely have provided a comparative counterbalance to the passive skills tested here. Regarding performance outcomes, *Welch's ANOVA* revealed significant differences between age groups. The youngest age group obtained the highest results (M=16.2, SD=2.95, n=224), followed by the 65+ group (M=15.6, SD=3.67, n=68). The inequality in group numbers is likely to have had an effect of the analysis as well as the results. The fact that the highest performers at phase 1 were the 18-29 age group, further underscores the possibility that recency in both Irish exposure and perhaps interfacing with tests and assessments may be a confounding variable in this research. Conversely, the HLM reveals that 'last time studying Irish' explains only .05% of the variation in performance. These findings appear in contradiction to each other. However, the HLM contains predictors specific to self-efficacy research that are likely to affect the proportion of variance contained in the model. Furthermore, as discussed, this age category, based on results alone, may be representative of those using the language daily in the education system. It appears as though a variable such as 'last time studying Irish' does not automatically equate to "period of non-use" – a primary metric in language attrition research. While there appears to be considerable convergence between self-efficacy and language attrition research, additional questions related to the specifics of usage and non-usage of Irish would be required in a future study to further assess this theoretical intersect.

7.2.7 Self-efficacy predictors

As mentioned at RQ1, any large unexplained variances in the regression models below can be only speculated on once we consider the complexity of the SLA process and the language classroom as the

sole site of interaction. For example, motivation as an ID variable may differ based on participant age, occupation, perception of utility, etc. Furthermore, the levels of cognitive resources such as concentration were not considered. The list of possible confounding variables at the individual level is almost endless.

Overall, the regression model at phase 1 explained over 76% of the variance in self-efficacy, allowing us to make theoretical observations with more confidence. Interestingly, age contributes almost 7%, compared with 0.02% on performance, indicating that category of age is most influential on the perceptual rather than performance side. At phase 1, the answer to the census question on speaking (26%) and global confidence (29%) contribute the most in explaining the variation in self-efficacy scores. This is quite a large proportion of the variance and demonstrates how influential the use of omnibus questions such as the Irish language question has in shaping Irish perceptions at a task-level. Whether a person self-assesses as an Irish speaker or not influences the causal chain that culminates in behaviour and performance. For example, and in the absence of a qualitative or directly observable element, one can speculate that a non-speaker is likely to have a lower level of Irish self-efficacy, and consequentially, a lower level of performance. The fact that the low performers saw a performance increase following the manipulation adds further credence to the notion that the perceptual power derived from the Census question can be a potential barrier to Irish language engagement, especially in those with lower levels of Irish language confidence or skills.

7.2.8 Performance predictors

The overall HLM model at phase 1 explained just under 50% of the variation in results, with self-efficacy as the largest contributor (43%). This aligns with the literature and the finding to RQ1, that self-efficacy is a robust predictor of performance (Bandura, 1997, Bandura, 2012, Bjorklund et al., 2020, Hendricks, 2014). Age, education, second

language and gender provide minimal explanation – a combined 2.6%. Interestingly, global confidence only contributes under 3% in explaining the variation, with the census question explaining only 1.5%. While the strong correlation results for omnibus questions relative to performance have been noted in research question 4, these describe the relationship rather than offer the predictive power of HLM. What these findings show is that previous experiences with Irish ('highest exam in Irish' and 'last time studying Irish') are not indicative of performance outcomes. Instead, participants' perceptions of task-based skills provide the strongest indicator. This suggests that facilitation of efficacy raising interventions may have the power to bypass an individual's global confidence, thus positively affecting language performance. The finding that level of Irish examination does not contribute meaningfully towards performance outcome is unexpected from a theoretical and experiential perspective. For example, one would expect that the spectrum of Leaving Certificate to a full degree in Irish or teacher training college would explain performance outcomes to an extent, as level of Irish performance and experience would be expected to intensify as participants move beyond the Leaving Certificate. As discussed, the 'last time studying Irish' variable may not indicate usage or non-usage. Therefore, the wording of this question for the purposes of determining non-use is inadequate, and should be addressed in any future studies seeking to combine attrition and self-efficacy research.

Phase 2 analysis provided a broader range of variables for creating a hierarchical regression model, with the added advantage of being able to distinguish between the experimental and control groups. For example, abilities, represented as performance at phase 1, and phase 1 self-efficacy allowed for a comparative baseline for the first time. For the High group, phase 2 self-efficacy (11%) compared with phase 1 self-efficacy (2%) contributes more to explaining the variation in phase 2 performance. Phase 1 performance contributes the most, in explaining 19% of the variance in phase 2 performance. Although

performance increased on average by 8% between phases, self-efficacy decreased by 13% on average for this group. This may represent a reappraisal of self-efficacy beliefs to reflect the deflated results and feedback received. A follow-up scale and test a number of months later, without revealing the manipulation, would allow to assess whether these false results have had a lasting effect on self-efficacy and subsequent performance – a means to test the concept and effect of the efficacy-performance spiral discussed in Lindsley et al. (1995). This scope for future research would provide further evidence of the power of negative social persuasion and highlight the role that teachers and peers play in facilitating or preventing this (Mueller and Dweck, 1998, Wang and Pape, 2007).

For the Control Group – made up of high-performers – performance on phase 1 contributed 18% in explaining the variation, with self-efficacy on phase 2 contributing 19%. The performance predictor is expected as this group received their actual results, representing enactive mastery experiences, the most influential source of self-efficacy. Again, this demonstrates further the role self-efficacy plays in guiding behaviours, represented as performance outcomes in this study.

The HLM for the Low group in comparison explained only 20% of the variation in performance, with self-efficacy at phase 1 providing no explanation for variance. The largest contributors were self-efficacy at phase 2 (4%), performance at phase 1, unknown to participants, at 9%, and global confidence (4%). The fact that 80% of the variance is unexplained by the predictor variables indicates unidentified latent variables that have not been considered in this research. In the limited research to date (see Barry 2020; 2021; 2022) low performers frequently attribute school experiences, attitudes and Irish abilities as the main reason for their performances and perceptions of abilities. In the phase 2 HLM models, the attitudinal variables: confidence; school experiences; and attribution, provided barely any explanation in performance variance. While this study has attempted to control for and

identify these factors, it seems that a follow-up study, focusing more on qualitative data from low performers, is required to identify the performance predictors which this study has been unable to identify.

7.2.9 The Irish question

RQ 7: Do participants believe declarations of other Irish language skills (reading, writing and listening) as well as graded “can-do” self-efficacy statements provide a valid measure of Irish language skills in a national Census of Population?

As has been highlighted elsewhere (see Barry, 2020, Mcgee, 2018, Walsh, 2022), declarations of Irish speaking abilities in the Census may be influenced by confounding factors such as ideology and identity. With official data anchored to a narrow interpretation of Irish language knowledge, participants were given an opportunity to consider alternative measures. Two questions were posed: one asking whether the other skills (reading, writing and listening) should be declared on the Census; and a second based on being given the chance to self-assess using a self-efficacy styled set of questions. The placement of the question, at the start of phase 2, meant that all participants had experienced self-assessment of two of the other skills (reading and listening) using a self-efficacy scale, thus allowing for a more informed opinion. 80% of 1,649 participants that had reached that stage of phase 2 strongly agreed or agreed that Irish reading, writing and listening skills should be declared on the Census. Less than 8% disagreed or strongly disagreed with measuring these skills. Two thirds strongly agreed or agreed that self-efficacy scales should be used to measure Irish abilities. Only 14.5% strongly disagreed or disagreed with this methodology.

The implication for these findings is that the agency offered through the opportunity to declare other Irish skills, or a graded assessment of skills via self-efficacy, are overwhelmingly popular among people that have had the opportunity to do so. It is likely that providing more task-focused questions on the Census will provide a richer dataset

representative of the wider concept of Irish language knowledge as opposed to basing policy interventions entirely on Irish speaking abilities. While self-assessing can be fallible, the results could provide a national profile of both receptive and productive language skills, as advocated by the CEFR, thus allowing for targeted interventions at the language acquisition and post-acquisition stages. For example, if findings reveal that more people can read Irish texts than speak Irish, then curricular, pedagogical, or policy interventions could address these gaps. A primary obstacle to this adaptation in national surveys would be interpretation and classification. For example, to obtain a true representation of self-assessed task abilities, the number of questions, scale type, and analysis, as well as interpretation by the public would require a large degree of buy-in by all stakeholders. Censuses by their nature deal with descriptive data. By introducing some of the changes suggested would potentially result in a divergence in methodology towards an area of inferential statistics, which comes with its own set of problems.

7.2.10 Statements on the Irish language

The opportunity to capture opinions and attitudes on a variety of perceptual, experiential and factual statements related to the Irish language provided a further layer of analysis in this study. When it comes to perceptions of Irish language attrition, over 55% of participants are confident that they have not lost the Irish they learned in school. However, when asked if they could recall the Irish learned in school, participants were far less confident, with less than 40% agreeing with the statement. This seems to suggest that participants are aware that the Irish knowledge is present, but that recall is an issue. This finding appears to strengthen the notion that attrition should be reframed as an issue of retrieval, and not one of complete loss (Yukawa, 1999).

When indirectly questioned on school experiences as sources of self-efficacy, the majority of participants could identify students in their

class whose level of Irish impressed them. However, almost 17% had no opinion on this concept. Almost half of respondents could not identify an expert model, i.e., a teacher that inspired them in Irish. Social persuasion, via received constructive feedback, saw more participants disagree than agree that they felt they had received this during school. The performance and self-efficacy outcomes for individuals that agreed or disagreed with the statements is beyond the scope of this research but does merit further investigation. For example, a study establishing a more robust attitudinal and experiential baseline compared with performance and self-assessments may provide an alternative perspective to this investigation.

The issues with the attributional scale, such as reliability due to measuring slightly opposing concepts, the large number of ‘no opinion’ responses, and bipolar questioning, mean that a strict interpretation of results may not be appropriate for generalisation. The most noteworthy finding is that the negatively worded statements saw participants, in the main, disagree with attributing these outcomes to external factors. This, coupled with over 75% agreeing that the Leaving Certificate was a good representation of overall Irish abilities, respondents in this study appear to take responsibility for general educational outcomes in Irish.

7.3 Implications from this research

The findings in this study have implications and benefits in relation to three principal areas: the individual; the State; and the wider society. At the individual level, the overarching tenet of social cognitive theory, the wider framework within which self-efficacy is positioned, is grounded in the concept of agency. The dynamism and interpretation afforded by this concept bestow upon individuals the freedom of behavioural self-control. It is evident in this study that self-efficacy is a robust predictor of performance outcomes, and more importantly, self-efficacy sources can be manipulated through mastery experiences and comparative feedback to affect subsequent performance. Rather than an internalised, retrospective focus on previous performances as

advocated for in inconsequential self-assessment opportunities such as a census, individuals can and should be convinced that meaningful engagement with existing Irish language knowledge, especially at the residual level, can produce outcomes such as improved performances. As this study has also shown, the misalignment of reading or indeed listening abilities and perceptions, based on generalising the findings, potentially means that Irish speaking abilities may also suffer the same fate. Mis-calibrated self-assessments, in the absence of any follow-up testing, may be leading to a wider underestimation of Irish language abilities, or an erroneous acceptance of Irish language attrition. Returning to a more commonly accepted position in the language attrition research that language loss should be reframed as a retrieval issue is certainly evident to an extent in this research. We saw performance improvements in all groups, indicating a number of possible factors. The improvements could be attributed to the influence of falsified results and feedback in the Low group or a natural ability combined with familiarisation with testing by phase 2 in the High and Control groups.

At the State level, one must include the two main stakeholders: the government and the education system. The government's approach to maintaining the national language is based on funding and policy interventions such as the *Official Languages Act 2003*, the *Gaeltacht Act 2012*, or the *20-Year Strategy for the Irish Language*. In the absence of the 2022 Census results (initial results are due for publication in the second quarter of 2023 (CSO, 2022a)), the policies to date have failed to increase the number of self-declared speakers of Irish. For example, the 2019 Monitoring Report of An Coimisinéir Teanga revealed that just over 2.5% of over 21,000 public servants were capable of providing state services through Irish (An Coimisinéir Teanga, 2019). The continued, exclusive prestige afforded to speaking abilities in national metrics is not only indirectly denigrating the other linguistic skills as of lesser importance, but as alluded to numerous times in this research, is unlikely to promote any revitalisation efforts

in individuals. If one has not used Irish for a number of years, then one's only consideration of abilities may be reduced to a binary response on speaking skills once every five years. As the respondents in this research have demonstrated, there is an overwhelming agreement that the other linguistic skills should be declared. The use of the education system as the primary driver in maintaining the Irish language post-independence has already been discussed in this research. The empirical evidence that metacognition is often a precursor to more efficacious engagement with academic domains offers some direction regarding the implementation of self-reflective interventions in the classroom. In providing pupil agency through appropriate modelling, such as expert or coping modelling, and continuous social persuasion, the role of teachers has never been more complex nor important. To address this, continuous professional development modules aimed at raising teacher self-efficacy could easily be developed as a template or pilot for introducing language self-efficacy concepts within the classroom. In general, self-efficacy should be regarded as a pillar of metacognitive interventions in education and curricular debates or developments, as is the case in the UK. However, employing "curriculum" as a search term, the Irish National Council for Curriculum and Assessment (NCCA) publications webpage reveals that the term "self-efficacy" only appears in a single document between 1999 and 2023 – a 2014 draft primary curriculum for English-medium schools (NCCA, 2014). This search, which included all consultation, draft, research and corporate documents, demonstrates how little significance is given to self-efficacy as a developmental variable in official documents. The finding that negative experiences (deflated results and negative feedback) reduced self-efficacy in higher level performers in this study only further highlight the importance of self-efficacy as a variable in the education domain, as well as the importance of targeted interventions. Recent proposed primary curriculum changes in Ireland have identified foreign languages as a primary focus, with one hour per week being dedicated to the teaching of French, German, Spanish, or other language that the school can

facilitate (O'Brien, 2022). The early introduction of second languages for students provides even further opportunities for the education system to implement language efficacy raising techniques that would only further benefit Irish language learning and teaching. However, whether this will lead to more formal recognition of language self-efficacy in policy or guidelines remains to be seen.

This leads on to the wider consideration of the societal level, where identity and positive attitudes towards the Irish language highlight an almost existential quandary in which support for Irish is increasing while the number of speakers is decreasing. The status of the language at a European level is important in ensuring sustenance in terms of producing contemporary Irish language materials, albeit at an official level. However, this strengthening of status could evolve in tandem with a wider societal realisation that unused Irish can be reactivated, thereby disproving the already overestimated sense that Irish knowledge is attrited or “lost” once you leave school. Of course, such a proposition needs to be aligned with expectations; not every non-Irish speaker wants to access their residual Irish, nor does every Irish speaker want to be called on as a practice resource for new speakers. As comments in this study show, simple prompts such as being tested after a period of time can lead to reengagement. In fact, taking into account the theoretical frameworks outlined in this study, and the conceptualisation of the adult learner (see Flynn, 2020), “relearning” Irish could and should be reframed as a process of reactivating existing reserves of Irish language knowledge. The first steps in this process require a robust approach to the metalanguage on self-efficacy; if an individual understands the consequences derived from their Irish learning experiences, then the process of realigning beliefs with competencies can begin. There is currently a lack of any empirical studies which assess the actual concept of self-efficacy as opposed to experimental interventions introduced in the classroom. Such an approach would only enhance metacognition in language students. Opening a discourse on understanding the perceptual influence of

academic self-efficacy may, as comments here allude to, provide more agency and by extension, more engagement with the Irish language.

7.4 Limitations

It is important to keep in mind the limitations in this study when considering the research as a whole. As discussed, the absence of research in this area, coupled with the requirements to design specific data collection instruments and the restrictions dictated by the ever-evolving Covid-19 virus, meant that a number of compromises were necessary.

Two outcomes in this study had a consequential effect across a number of areas: representativeness of the sample; and the Irish test. The random sampling method conducted via social media, largely as a means to overcome the restrictions and implications of Covid 19, led to an unrepresentative sample of the intended population. For example, the 2016 Census results show an almost 60:40 split in the population that *can't* versus *can* speak Irish (CSO, 2017b). In this study, the split was roughly 25:75 for those that *can't* versus *can* speak Irish, based on the Census Irish question. The Census also showed that for every 1,000 females in the State, there were 978 males (CSO, 2017a). In this study, there are over twice as many females as males. Finally, as revealed in survey comments, social media comments and personal communications, those active in the Irish language community, be they teachers, current learners or speakers, tended to share the link to the survey and test with others sharing the same enthusiasm or interest in the Irish language, often within teaching networks. Therefore, above average performers in Irish emerge as a dominant sub-sample of the overall number of participants in this study. Despite efforts to aim the study at those who felt they had lost their Irish since school, this sampling irregularity had residual, knock-on effects across most stages of analysis, leading to statistical compromises unnecessary in normally distributed data.

The Irish test, originally covering A1 to B2 levels, is likely to have provided more of a challenge to respondents. However, as the pilot stages showed, the complete test was taking a burdensome amount of time, thus likely to affect overall engagement. The second pilot, administered to 15 participants and based on A2 and B1 levels only, revealed an average score of 24 out of 40 (SD=7.0). It is now obvious that higher level ability respondents were not represented in the pilot. The IRT analysis conducted confirms that the reduced test was only effective at measuring below average abilities in Irish – again, partly due to the presence of so many higher performers. One solution to this problem would have been to pilot the full set of original Irish questions to a larger sample size and employed IRT at this point to reduce the items. The expert panel review should then have reviewed this reduced list, thereby ensuring both participants and experts have been more adequately included in the design process.

As self-efficacy is a judgement based on pre-task perceptions, and self-assessment is generally evaluated post-task, the nature of this study means that it is difficult to distinguish whether participants, upon completion of phase 1, are declaring their self-efficacy perceptions based on projections for the phase 2 test, or are basing their declaration on retrospective self-assessment of their performance on phase 1 or even further back in time. Bandura (2006) raises an important question: does the act of engaging with self-appraising self-efficacy lead to a motivational inducement, thus affecting behaviour when faced with a follow-up test? The low-stakes context of this study may have had an influence on performance behaviours. It is next to impossible to control for motivational inducement as a behavioural factor. Similarly, guessing or cheating are even more difficult to control in an unsupervised testing environment. Participants had a 33% chance of correctly guessing answers to any question. Also, participants that are not regular users of the Irish language come from a culture in which Irish skill measurement is based on an inconsequential single question,

wholly related to speaking ability, thus allowing for abstractions such as ideology to influence declarations.

The direct effect of false comparative feedback is difficult to determine due to the environmental conditions. Social persuasion, at face value, indicates using social indicators to judge performance. As “social” in the context of this study represented an unknown entity to the participant, i.e., a generic comparison of “others”, as opposed to a known entity such as a classroom of peers, it is difficult to garner a definition of what this represents for each individual participant. Usher and Pajares (2006) caution that the effect of manipulated feedback messages is dependent upon how the message is framed, and how an emergent disparity between false results and perceived abilities is interpreted, thereby creating scope for an inverse of the intended consequences.

The lack of qualitative data in this study is a by-product of addressing the research and instrument gaps necessary to conduct this investigation into Irish language self-efficacy. The design dictated a pragmatic, post-positivist approach in which the focus was on developing tests and scales for analysis. Follow-up interviews, on a one-to-one or focus group level, would have offered more insight into perceptions of Irish language abilities and behaviours. For example, focus groups conducted by Barry (2020) revealed factors such as ideology and conceptions such as ideal speaker comparison in self-assessment of Irish skills. The focus of this research would have likely revealed even further latent constructs in the Irish language context, including the potential for factoring in IDs such as motivation or affect.

Vancouver et al. (2008) suggests that arousal to allocate resources to a task may not be a direct measure of motivation, but a conditioned learned response to anticipated consequences of performance. Participants’ expended effort may not in fact be due to motivation to succeed, but either as a natural reaction to being presented with an Irish

language test or as a reaction to performance scores on phase 1. Furthermore, Vancouver et al. (2001) suggest that manipulated feedback may lead to a greater discrepancy in the self-system with false positive feedback potentially leading to a false perception that goals are being met, thus resulting in a reduction of cognitive or attentional resources, i.e., time and effort. Without a qualitative aspect, it is difficult to determine how time allocations are actually occurring or how effective the manipulation actually is on an individual level.

7.5 Directions for future research

To summarise the points raised in addressing each research question above, the following factors should be considered in future research design. In general, a more longitudinal approach needs to be taken to determine the lasting effects of self-efficacy, manipulations included, on participants. Either a third phase some months later, or a delayed post-test could allow for more conclusive outcomes. In order to truly measure perceptions on national metrics, speaking skills should be prioritised for future assessment. However, the other active and passive skills should receive equal attention in order to provide a more rounded profile of Irish language knowledge in individuals. Period of non-use needs to be more clearly defined and investigated if we seek to communicate a wider narrative that Irish language attrition is overestimated, and the language exists at the residual level.

With over 1,200 of the participants that completed the full instrument having learned another language in school, with French being the predominant language, a comparative study on self-efficacy and performance in other languages and Irish is likely to lead to interesting results. For example, higher efficacy profiles for students of French versus Irish could be compared with results in respective languages. If, for example, self-efficacy emerged as a stronger predictor for French, then it could be ascertained via qualitative methods why individuals are comparatively more or less confident in Irish abilities.

The issue of analysing time allocated in the potential absence of time management strategies could be addressed by reintroducing a visual timer. If time is in abundance, then the opportunity costs associated with allocating time to certain items over others are absent (see Beck and Schmidt, 2015). A timer had been used in the second pilot. However, this was removed for fear that the test would end up assessing time management strategies versus Irish knowledge or encourage random guessing. In hindsight, and with results from the self-efficacy on time allocated regression, some degree of control for time needs to be introduced. While it may be to the advantage of those with more effective exam strategy skills, participants should be familiar with the concept of sitting a timed examination.

A qualitative element to this research is required in future studies. It is evident that some confounding variables need to be identified and controlled for. This could allow for the investigation of socio-economic status as a potential variable. As discussed in Chapter 4, Britner and Pajares (2001) found that students from social and economically disadvantaged backgrounds had a tendency to value social persuasion as the most important source of self-efficacy versus previous performances. A similar research design in the Irish language context may allow for the identification of targeted learning interventions. Furthermore, the contradictions in this study that attitudes or attribution explain hardly any of the variation in performance at phase 2 suggest that other latent variables are present. For example, the concept of social distance towards Irish speakers, as identified in interviews in Mac Gréil and Rhatigan (2009), could be assessed as an attitudinal predictor. Furthermore, the teacher perspective is another aspect of Irish language self-efficacy likely to produce an alternative approach for developing positive interventions. The glaring absence of any research on Irish language teacher self-efficacy represents a wider suite of issues, be it from the micro classroom level to the macro policy and training level that should be addressed in future studies. A large-scale study assessing self-efficacy relative to teaching experience and

training could be easily operationalised, representing a first step in establishing a baseline of Irish teacher self-efficacy beliefs.

As this research represents one of the first steps in identifying the link in perceptions of Irish language attrition with Irish language self-efficacy and its resulting behaviours, the richness of data provided for in semi-structured interviews could help address some of the existing gaps. What emerges from this study is that the spectrum of interpretation for concepts such as “forgetting” or “recalling” the Irish language learned at school is varied and conflicting. One explanation for this is that a global interpretation of “knowledge” suffers the same fate as omnibus ability questions. Another is that “recall” suggests active language engagement, whereas it is less cognitively demanding to make wide assumptions or declarations of “forgetting”. To avoid blurring the lines between extrapolation and speculation, a future investigation that is rich in qualitative data may provide the necessary and long overdue prompt that Irish language attrition is a unique phenomenon worthy of our attention. This may offer an alternative perspective on the positive attitude/passive engagement paradox identified in national surveys such as Darmody and Daly (2015). It is this author’s belief that, based on findings in this study and in Barry (2022), perceptions of Irish language attrition are contributing significantly towards the existing gap between attitudes and usage.

7.6 Conclusion

According to Schmid (2022, p.2),

‘Language learners still drop off the horizon of research, policy and pedagogy the moment they have taken their exam or attained their degree or diploma, and no consideration has been given to the development of skill maintenance and revivification programs.’

This study offers a response in developing a narrative around the main stakeholder and beneficiary of this research – the Irish language

learner, more specifically the former Irish language learner. By describing the second language acquisition process in Chapter 3 and closing with self-assessment and language attrition, the idiosyncratic complexities that encompass L2 learning were presented. Self-efficacy and its many corollaries were then presented as the ideal framework through which to investigate the nuances of Irish language ability perceptions. This study shows that Irish language self-efficacy, when accurately measured, is a highly reliable predictor of actions and behavioural outcomes. We saw how methodological learnings from other domains via experimental intervention can be applied as a means to affect outcomes, specifically in those with lower levels of abilities. According to the Council of Europe (2008), the preservation of a minority language such as Irish relies on three criteria: the capacity to use the language; the opportunity to use it; and the desire to use it. By operationalising self-efficacy in the domain of education as a conduit for second language agency, only then can these criteria begin to be addressed.

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Appendix 1: Irish Language Self-efficacy Beliefs and the Official Languages Act 2003

[TEANGA, the Journal of the Irish Association for Applied Linguistics, 27, 174–192 (2020)]

Irish language self-efficacy beliefs and the Official Languages Act 2003

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Abstract

This study assesses the influence of sources of self-efficacy construction on Irish language abilities in civil servants working under the requirements of the *Official Languages Act 2003*. Through a series of focus groups within a government department, participants with varying abilities and interests in the Irish language were assessed on the determining factors in self-assessing their Irish language skills. It was found that self-efficacy is a more accurate predictor of language beliefs than previous performances for Irish speakers, and that sources such as social persuasion and vicarious experiences have the potential to raise self-efficacy beliefs in non-Irish speakers. It was also found that the *Act* has not led to an increased engagement with the Irish language but has only resulted in an increased deference to perceived expert language models.

Background

The *Official Languages Act 2003* requires public bodies within the Irish State to provide services through both official languages – Irish and English. State agencies are required to publish language schemes – statutory internal language plans demonstrating how Irish services will

be incorporated over a 3-year timeframe (Walsh, 2012). The *Act* established the Office of An Coimisinéir Teanga (Irish Language Commissioner) to monitor compliance with requirements. The most recent Monitoring Report from An Coimisinéir Teanga (2019) reveals that from the 16 Government departments surveyed, comprising of 21,060 employees, only 551 staff (2.62%) were declared by their departments as being capable of providing services to the public through Irish when required.

As departments have autonomy in establishing criteria for identifying and recruiting Irish speakers (Ó Coisdealbha, 2019), this study will investigate how staff in public bodies that have studied the Irish language in school, self-assess their Irish language abilities when it comes to complying with the *Official Languages Act 2003*. Self-efficacy provides an appropriate theoretical framework for this study as it represents a key factor in the willingness to engage in domain-related activities i.e. a willingness to use a language (Bruning, Dempsey, Kaufmann, McKim & Zumbrunn, 2013). A theoretical overview of self-efficacy in the second language context will be followed by a summary of the findings from focus group discussions with current civil servants from a Government department. These findings will be framed by Bandura's (1997) four sources of self-efficacy belief constructions. The objective will be to determine the influence of these four sources within the Irish language context.

1. Self-efficacy

Self-efficacy is defined as 'people's judgement of their capabilities to organise and execute courses of action required to attain designated types of performances' (Bandura, 1986, p 391). These judgements are based on context-dependent self-interpretations of an individual's ability to undertake a specific task, and affect aspects of behaviour, including effort, coping mechanisms, resilience, and learning and achievement (Bandura, 2012; Chularut & DeBacker, 2004). As self-efficacy beliefs are based on what the individual believes can be

achieved – a judgement that is independent of ability - self-efficacy is a better predictor of performance than previous skills or knowledge (Bandura, 1997). While self-efficacy beliefs are strongly correlated with motivation, they differ in that an individual with high self-efficacy beliefs may not value the perceived outcomes of a task, therefore choosing not to engage with that particular task (Vancouver, More, & Yoder, 2008). Self-efficacy is seen as an essential component in academic agency, in which it affects the course of actions individuals undertake to attain levels of academic performance (Zimmerman, 1995). For example, learners with low self-efficacy beliefs tend to attribute their outcomes, both successes and failures, to factors beyond their control, such as luck or perceived task difficulty, and as such, are less motivated to attempt similar tasks again. Learners with high self-efficacy perceptions are more aware of the agency of their actions, and are more likely to attribute future outcomes to their own actions.

2.1 Sources of self-efficacy

According to Bandura (1997), there are four sources of influence that affect the development of self-efficacy beliefs. These include enactive mastery experiences, vicarious experiences, social persuasion, and physiological states.

Enactive mastery experiences are best represented by previous performances in the specific domain. These perceived performances are the most influential of sources on self-efficacy belief formation (Schunk & DiBenedetto, 2016). Pre-existing self-knowledge constructs are formed when the individual cognitively categorises their previous experiences, creating biases that are called upon when determining future outcomes.

Vicarious experiences are facilitated through modelling and social comparison relative to the achievements of others. A social comparison with peers who are considered as similar in ability has a strong effect on self-efficacy. For example, when an individual outperforms a classmate regarded as similar in capabilities, this results in higher appraisals of self-efficacy for that individual. People often seek models

who demonstrate qualities and capabilities that they admire (Schunk & DiBenedetto, 2016). When an individual observes a model performing a task, this potentially raises self-efficacy through aspirational modelling of that expert.

Social persuasion includes the influence of feedback, often from those who are viewed as expert models in the specific domain. When an individual is endorsed by the expert, self-efficacy is raised through validation. Evaluative feedback at the early stages of development create a notable impact on personal self-efficacy (Schunk, 1984). Feedback framed as devaluative, for instance, undermines the individual's belief, whereas feedback that focuses on the achievement raises personal efficacy beliefs. While positive feedback can raise short-term self-efficacy, the effect is less likely to endure if it is followed by subsequent poor performances (Schunk, 2012).

Physiological indexes include emotionally triggered states such as anxiety or elation. According to Bandura (1997, p109), 'pre-existing efficacy beliefs create attentional, interpretive, and memory biases' in the central nervous system. This information is processed into percepts that become encoded events in the memory. The result is that individuals revert to perceived affective reactions rather than recalled ability when self-appraising task competency.

2.2 Self-efficacy and second language learning

Previous studies have shown positive correlations between self-efficacy beliefs and language performance (Hsieh & Kang, 2010; Mills, 2014). According to Moreno and Kilpatrick (2018), the higher the degree of second language usage, the higher the self-efficacy beliefs, and vice versa – high self-efficacy leads to an increased willingness to communicate (Mills, Pajares, & Herron, 2007). Graham (2006) has demonstrated how low self-efficacy language learners tend to make negative attributions to their academic outcomes, often claiming the language learning environment is uncontrollable and inaccessible. When it comes to L2 self-assessments, particularly of a language that may have been learned in school, and has not been

activated since, the accuracy of these estimations is more than likely to be based on previously established perceptions of self-efficacy rather than actual ability (Bandura, 1997). Pajares (1996) identifies self-efficacy beliefs as having the potential to create a filter through which new experiences in an associated domain are interpreted and behaviour is modified accordingly. This filter concept is relevant in the Irish language context where for most adults, the language has not been used since leaving the school environment (CSO, 2017). It is the pervasiveness of past learning experiences, and its associated variables such as teaching methodology or the classroom environment, for example, that can lead to the underestimations of ability, even in recent school leavers when it comes to Irish language self-assessments (see Murtagh, 2003).

2. The Irish language context

The Irish language is designated as the official first language of Ireland. However, only 1.7% of the population of Ireland claim to speak the language on a daily basis (CSO, 2017). Every five years, the Irish Government undertakes a Census of Population to gather data for the State. The question ‘can you speak Irish’ is asked in the education section of the Census. If a person opts for ‘yes’, the follow-up question enquires about their frequency of usage. The 2016 data imply that 39.8% of the population over three years of age can speak Irish (CSO, 2017). In the Irish language speaking regions – the Gaeltacht – representing just 2% of the population, only 63% claim to be able to speak Irish (CSO, 2017). The Irish language is a compulsory subject in the national curriculum. The terminal exam - the Leaving Certificate, is undertaken at the age of 17 or 18 years (State Examinations Commission, 2019). A pass in Irish (40% or above) is required for entry into any National University of Ireland. It is estimated that by the time the average student completes their final exam in Ireland they have been exposed to over 2,000 Irish language classroom hours (Ó Laoire,

2005). Until 1975, a pass in Irish was required for employment in the civil service.

The *Official Languages Act 2003* aims to promote the use of the Irish language for official purposes through the improved provision of public services through the Irish language. Walsh (2012) identifies three primary requirements: a direct obligation covering correspondence with the public; obligations based on regulations made by the Minister for Culture, Heritage and the Gaeltacht related to visual branding and signage; and obligations based on the 3-year language schemes published by public bodies stating how they plan to address the provision of Irish language services in their own department. While the Public Appointments Service, the central recruitment agency for the State, creates panels of Irish speaking staff to fulfil recruitment needs as they arise, the training and recruitment of Irish speaking staff still remains the remit of each individual department. The majority of civil and public service bodies have established an Irish language office to ensure that the *Act* is being adhered to. As part of the *Official Languages Act 2003*, the role of An Coimisinéir Teanga is established to monitor the compliance by public bodies with the *Act*. The most recent monitoring report has revealed that only 2.62% of 21,060 staff in the Government departments surveyed can provide services through the Irish language (An Coimisinéir Teanga, 2019).

3. Methodology

The over-arching aim of this study is to employ qualitative methods to determine the influence of Bandura's four sources of self-efficacy on Irish language belief formation in civil servants complying with the requirements of the *Official Languages Act 2003*.

4.1 Participants

The following study was carried out with participants from a civil service department in which an Irish language office has been established. An open call to participate in this study was issued across

a civil service department with an estimated 900 employees. The sample group comprised of an official Irish language officer, staff who are formally acknowledged as being proficient in responding to requests submitted under the *Act*, current Irish language learners, and those who self-declare as having no Irish language skills. The department determines its official Irish speaking staff figures by allowing staff to self-assess whether they can speak Irish or not. Two participants work through Irish on a daily basis, with a number of the other self-declared Irish speakers being able to respond to official queries in Irish.

In total, 15 participants across three 60 to 90 minute-long focus group discussions took part in this research. The decision to use focus groups instead of one-to-one interviews was based on the fact that focus groups provide access to differing social conditions (Usher, 2009). Furthermore, self-efficacy formation is grounded in social group interactions, and that when group members feel empowered, the raised collective efficacy and performance of the group can be observed (Bandura, 1997). The criterion for inclusion was that participants had completed the compulsory Irish language course to Leaving Certificate level. All participants except one can be described as ‘new speakers’ of Irish, i.e. speakers outside the education system who have not grown up in an Irish speaking environment (O’Rourke & Walsh, 2015). Only one participant formally studied Irish at third level, with all self-declared Irish speakers having taken courses or tuition since leaving school. Each participant was provided with an information sheet to fill out before beginning the discussion giving them the opportunity to declare their ability to speak Irish, and to what extent. The self-assessment categories were taken from the Committee of Irish Language Attitudes Research report (CILAR, 1975), and have been replicated in other studies since (see Mac Gréil & Rhatigan, 2009; Darmody & Daly, 2015). These ability statements, and the responses, are listed in Table 1, below.

Table 1 Self-assessment of Irish speaking skills

	I can understand the odd word	I can understand simple sentences	I can understand parts of conversation	I understand most conversations	I consider myself to have native speaker ability
FG 1	-	-	5	-	2
FG 2	-	3	-	1	-
FG 3	1	1	1	1	-

Group 1 was comprised of all self-declared Irish speakers, including the department’s Irish language officer, a participant that grew up in an Irish speaking environment, and staff that meet formally, on a weekly basis, to practice and use the language. Group 2 consisted of an Irish speaker that received their entire education from the age of 13 in the Irish language, and three self-professed non-Irish speakers. Group 3 was made up of two non- and two Irish speakers, one of which regularly answers queries submitted by the public through Irish. Table 2 represents the composition of each group.

Table 2 Focus groups categorised by age, gender and Irish ability

		Age group			
		18-29	30-39	40-49	50+
Group 1 (m=1; f=6)	Irish speaker (n=7)	1	-	2	4
Group 2 (m=2; f=2)	Irish speaker (n=1)	-	1	-	-
	Non-Irish speaker (n=3)	-	1	2	-
Group 3 (f=4)	Irish speaker (n=2)	-	1	-	1
	Non-Irish speaker (n=2)	-	2	-	-

The semi-structured discussion was based around a series of questions determined by previous attitudinal studies (see CILAR, 1975; Mac Gréil & Rhatigan, 2009; Hickey, 2009; Darmody & Daly, 2015) and a review of the literature on linguistic self-efficacy. All focus groups were conducted in the first language of the majority of participants – English. Examples of self-efficacy questions include: ‘What was the quality of feedback in school like?’; ‘How would you describe a fluent Irish speaker?’; and ‘Did your family encourage you to learn the Irish language?’. The discussions were recorded and fully transcribed.

Participants are coded with the following identifier: participant number/group number, represented as P2G1 for participant 2, focus group 1, for example. The transcripts were then coded to identify evidence of self-efficacy constructs.

The following section presents the focus group discussions structured around each of Bandura's (1997) four sources of self-efficacy within the Irish language context.

5. Focus group self-efficacy belief sources

5.1 Enactive mastery experience

Enactive mastery experience is a source of self-efficacy based on the outcomes of personal experiences and previous performances on similar tasks (Williams & French, 2011). With all participants having studied the Irish language up to Leaving Certificate level, all involved have language experiences and performance perceptions that they can call upon when self-assessing abilities. The majority of the self-declared non-speakers have no recent experiences upon which to base their perceptions of abilities. Therefore, in the absence of performances, this source of self-efficacy is based solely on school experiences over 20 years in the past, resulting in presumptions of language loss:

‘I didn't have experiences of being around people, so it's purely academic in that sense. Once I finished that exam it was gone.’
(P3G3)

Participants compared how Irish was taught with other languages, associating the teaching methods and materials of other languages with utility and practicality, reinforcing the perception among some that Irish has no value:

‘I think as well, with Irish, you always have the feeling that you're learning it, but where will I actually use it? Whereas with French and German, it's taught very practically.... with Irish, you're learning it and there is no proper end result, you know’
(P2G2)

Even among the non-speakers with access to speaking opportunities and previous successful performances, there is evidence that enduring

low self-efficacy beliefs are preventing access to these current opportunities:

P4G3: I worked in an Irish college over summers. Not every summer, but a couple of summers, and I would have done quite well in honours Leaving Cert Irish, and I lived with *Gaelgeoirs* (Irish speakers) in Connemara
P1G3: you should be well able
P4G3: no way [laugh] no way

The same low self-efficacy participant above spoke enthusiastically about using an application for their mobile phone – Duolingo, which allows users to undertake quick daily lessons and tests in a chosen language. Despite the initial positive experiences of this participant, the negative effects of their school experiences appear to dominate the self-assessment process.

Collective systems, such as classrooms and social groups, tend to develop a sense of shared beliefs in capabilities known as collective efficacy within which the sources of self-efficacy interact (Pajares, 1996). This was evidenced in the Irish speaking Group 1. Despite mainly choosing the more conservative *‘I can understand parts of conversation’* as a general statement of ability on their respective information sheets (see Table 1), the participants demonstrated a high collective efficacy that appeared to raise individual efficacy beliefs over the course of the discussion; signalled by their increased use of Irish words and phrases. This is due in large part to the fact that six of the seven participants from Group 1 are members of the department’s Irish language club – *Seomra Caidrimh* (common room) – named after the room where they meet on a weekly basis to speak and discuss topics through the Irish language.

Irish speakers in the mixed groups expressed an initial reluctance to declare a high level of self-efficacy. For example, a participant in Group 2 that had received the latter half of their education through Irish, and provides Irish language services for the department, expressed surprise at their abilities:

‘I actually worked on that project, and for a while I used to take Irish queries and I actually performed better than I thought, and I had more than I thought I knew.’ (P3G2)

Motivation to speak the language is achieved with the ability to cognitively envisage positive future outcomes (Bandura, 1977). For most of the non-Irish speakers, previous unsatisfactory experiences have been used to attribute low self-efficacy beliefs, thus reducing motivational behaviours. When asked why they don’t attempt the language, a participant who had a large degree of non-school based experience with the Irish language stated:

‘There have been no social scenarios where I’ve needed to use it. There have been no business scenarios where I’ve needed to use it. If someone rings up looking to speak in Irish, there’s someone in the office I can point them to and let them talk to them that way.’ (P4G3)

The ability to rely on Irish speakers to fulfil the *Act*’s requirements means that there is little incentive to avail of performance opportunities in the department.

While previous performances have been identified as the most robust source of efficacy beliefs (Bandura, 1997), a comment from a non-Irish speaking participant seemed to contradict this, and raise further questions on the reliability of Census Irish self-assessment data. When asked how they answer the Irish question on the Census, P1G2 revealed that despite having low self-efficacy in Irish speaking abilities, they answer ‘yes’, using the Census as a means to reinforce their national identity, rather than as an accurate appraisal of language skills:

‘The only way I would say yes is to identify myself as having some kind of education in Irish and having learned it. I’d use it to identify myself as someone that has a past in Irish versus someone who is a non-national, and probably doesn’t have it.’

5.2 *Vicarious experiences*

Learners often acquire information about their own abilities through comparisons with similar others (Schunk, 1985). Vicarious experiences are represented by models exhibiting traits as diverse as expertise or coping abilities. The use of modelling appears to be an influential source of self-efficacy belief formation for both Irish speaking and non-

speaking participants. One non-Irish speaking participant, whose immediate social circle consists mainly of Irish speakers spoke about how their friends' abilities instil a love of the language. However, the social comparison only results in establishing a high standard which cannot be reached according to the participant – 'I have a great love of the language but I'm just no good at it'. Another non-Irish speaking participant (P1G2) demonstrated how perceptions of model ability can prevent access to vicarious experiences by stating that they would be reluctant to join the *Seomra Caidrimh* - 'the conversations classes in here, I'd love to go to them. But I feel like they'd be so far ahead'.

Within the Irish speaking Group 1, there were different tiers of expert models, with those having grown up in Irish speaking households held in high regard by those that are relearning the language. The Irish language officer (P7G1) was indirectly regarded as the mastery model by the other participants in Group 1 throughout the discussion as the group reaction below demonstrates:

Were you satisfied with your Leaving Certificate results?

P1G1: I did honours Irish. Yeah, I was happy

P6G1: I was happy

P7G1: I was not

P1G1: Why? You got an A minus instead of an A plus

ALL: [Laughter]

One of the Irish speakers in Group 1 again mentioned the issue of perceptions of model inaccessibility. This participant spoke of their experiences of joining a choir of native Irish speakers in order to gain access to what they see as mastery models. While the experience was largely positive, the participant found the group switching to English when responding to them disheartening, reinforcing the boundaries between learner and model, thus lowering self-efficacy:

'I think the whole Irish speaking community is very... it's closeted away.' (P4G1)

Even some of the Irish speakers agreed with this sentiment, but from the perspective that speaking the language can create an exclusionary environment:

‘I’m kind of conscious that you’re excluding people if you’re speaking Irish in an environment that not everybody understands.’ (P2G1)

This statement represents the other side of this issue - the Irish speakers themselves are conscious about performing an indirect modelling role. This results in an unconscious withdrawal of the vicarious experience for learners.

An interesting dynamic was observed in Group 1 when asked for opinions on new speakers (i.e. new learners) of Irish:

What is your opinion of ‘new speakers’ of Irish?

P1G1: I admire them. Are you talking about adults or children?
Adults more so. People that have left school and decided to relearn the Irish language.

P5G1: fair play to them

P3G1: yeah

P2G1: yeah, great

The participants do not seem to regard themselves as being ‘new speakers’ of Irish, despite only one member having grown up in an Irish speaking household, and refer to other learners as ‘them’.

5.3 Social persuasion

According to Schunk (1989, p 196), ‘feedback indicating skilful performance or progress in skill acquisition validates one’s sense of efficacy and leads to further skill refinement’. In the absence of such feedback, learners have no effective means of monitoring progress. When participants were asked about the quality and form of feedback they received in school, the majority of responses were negative:

Did you get much feedback in school?

P1G1: No. You had to do it or you got a slap

P3G1: Yeah, it was like that

P2G1: Your exams were your feedback

In Group 2, the absence of feedback was raised and highlighted with a comparison drawn with other languages:

What was the quality of feedback in school like?

P2G2: No direction. I don't actually remember ever getting any feedback in Irish

P1G2: your summer exams – your result – that was your feedback

P2G2: Whereas, straight away with my German teacher, there was always the positive reinforcement straight away.

From these two extracts it is evident that feedback was not a continuous process, with learners relying on their end of year exams for performance indicators.

A supportive environment evolved during each of the focus groups, with non-speakers encouraged to reassess their level by the Irish speakers. In Group 3, one of the Irish speakers encouraged the two non-speakers to re-evaluate:

‘Just from this discussion, I would consider both of ye and say ye could both have a conversation if ye had to.’ (P1G3)

This evaluation may have been partially based on the evidence that one of the non-Irish speakers used a number of Irish phrases and words in the discussion. One of the participants in Group 3, who declared outright at the start that they had low self-efficacy beliefs, appeared to undergo a reassessment process when recalling previous events. For example, when discussing watching an Irish language documentary with an Irish speaking friend, one of the Irish speaking participants tried to reassure them of their abilities. However, despite this brief reassessment, self-efficacy returned to its initial lower level:

P4G3: So I was delighted because it was really simple Irish, so I could understand that – really simple, short sentences

P2G3: They were hardly making up the sentences for you

P4G3: I don't know. I don't think your man was fluent Irish

The Irish speakers in Group 1 who are members of the Irish language club, all made reference to the *Seomra Caidrimh*, the room that they meet in weekly to speak in Irish. This is regarded as a supportive, recognised space where speakers of varying ability meet to converse in

the language. This initiative was created following a training intervention in 2010 where employees undertook an Irish language course in preparation for extended requirements of the *Official Languages Act 2003*. Following the positive experiences of the course, the employees decided to create their own immersion environment. The *Seomra Caidrimh* lasts only 30 minutes a week, and for most it represents the only source of social interaction in the Irish language. For the Irish speaking participants, this minimal exposure appears to have efficacy-raising effects, with short, regular performances aiding this process.

5.4 Physiological indexes

Both speakers and non-speakers discussed the anxiety they felt at the thought of having to use the language. Non-speakers who declared themselves as having finished school with satisfactory results made statements such as –

‘If you asked me to translate something or have a conversation, I’d struggle. I have a few flashbacks still [laughs].’ (P1G2)

However, it was the Irish speakers who expressed the most anxiety. One of the participants who regularly responds to queries under the *Official Languages Act 2003* declared ‘I’d always be fearful to say ‘yeah, I’m completely fluent’’ (P3G2). The same participant had gone to an Irish speaking school, and had grown up in an Irish speaking household. When asked the general question ‘can you speak Irish?’ they responded ‘I’d be nervous when asked that question – almost fearful that someone is going to start a conversation with you, and test you’. This fear of having your level tested was a common theme among the Irish speakers. However, the reasoning behind this physiological state is not without foundation, as one of the groups discussed:

P1G3: there are people who ring and check that services are being provided in Irish all the time. Just so ye know

P4G3: it is something I am very aware of

P1G3: they do spot checks on it

As Government bodies are required to provide services in Irish as required, and with the added monitoring role of An Coimisinéir Teanga, staff in this department appear anxious that the *Act* is adhered to correctly. This may explain the preference for referring even the most basic queries through official channels, even in instances where abilities to respond are more than adequate.

An interesting self-efficacy raising source emerged with one of the non-speakers who had been using the Duolingo application. The lessons on the application reminded the participant of when they first encountered certain Irish words in school:

‘It reminded me an awful lot of school and learning the colours. I went down through all the lessons on it. I was delighted with myself, genuinely delighted!’ (P4G3)

The use of technology appears to create an easy achievement target for this participant, resulting in a short-term raising of self-efficacy.

6. Discussion

This study demonstrates how self-efficacy beliefs in Irish language skills are a more predictive indicator of performance than abilities within the department. Some Irish speakers display low self-efficacy beliefs, often with a subsequent withdrawal from providing Irish language services despite receiving their education in Irish, growing up in an Irish speaking household, or working regularly in the language. Similar to findings in Murtagh (2003; 2007) and Murtagh and van der Slik (2004), non-speaking participants in particular display evidence of perceived Irish language attrition usually following prolonged periods of non-use. However, as previous second language attrition investigations have shown, these perceptions of language loss are generally over-estimated, with evidence of residual second language knowledge unknowingly present (Weltens, 1989; de Bot, Martens, & Stoessel, 2004). A further study into testing current abilities and demonstrating to staff whether Irish language knowledge has remained

despite periods of non-use may result in raising self-efficacy as well as performance within the department.

Recent studies on collective efficacy have shown how perceptions of individual control were elevated when the group was perceived as being highly efficacious, leading to raised individual self-efficacy levels (Jugert, Greenaway, Barth, Büchner, Eisentraut, & Fritsche, 2016). The influence of collective efficacy beliefs at the individual level underlines the facilitative role that social identity with the Irish language has on participants in the Irish speaking group, with group members going as far as to distinguish themselves from other new speakers of Irish. The use of social spaces – digital and physical – in promoting an identity with the language, have had a positive, efficacy-raising influence on staff. Among the non-speakers, there is an acknowledgement that the language is an important, essential aspect of both social and Irish identity. However, as discussed in Darmody and Daly (2015), this does not always translate into motivation to learn or use the language.

On a number of occasions, the status of being an Irish speaker created a responsibility and pressure that resulted in avoidance behaviours ('I can speak it, but I'd lose my life if I had write in Irish' (P3G1)). The long-term effects of these pressures are that capable speakers are underestimating their abilities, again resulting in deference to perceived expert model peers. Further research is required into how these gradations of self-efficacy are formed and subsequently altered in such a dynamic way.

The participants all highlighted the absence or ambiguity of social persuasion and feedback from teachers when initially learning the language. According to Zeldin and Pajares (2000), social persuasion is balanced more towards having the power to undermine efficacy beliefs, and is significant in academic settings where teachers establish evaluative standards that have the power to determine a student's mastery experience (Chan & Lam, 2010). The effect is that learners make their own self-evaluations at a period in which feedback is an essential part of the language learning process (Schunk, 1984). These

often miscalibrated evaluations are carried into adulthood, resulting in capable speakers declaring: ‘I have a great love of the language but I’m just no good at it’ (P4G3). However, there is potential to redress these perceptions, as evidenced by the effect of positive peer-group social persuasion interventions in the focus groups.

7. Conclusion

While this study is limited to a single Government department with a small number of participants, and a comparative study with other departments would be required to strengthen the generalisability of findings, there is evidence that self-efficacy beliefs are dynamic within very short time-frames, and are context-dependent. Contrary to the thesis that mastery experience is the most influential source of self-efficacy (Bandura, 1997), this study finds that the Irish speakers’ general negative experiences, and the positive experiences of some of the non-speakers have a weak influence on future beliefs. Vicarious experiences and social persuasion, derived from supportive spaces and feedback, or lack thereof, appear to contribute the most to long-term self-efficacy belief formations within the department. For non-speakers – even those with previous successful performances – the fact that they can defer to Irish speakers when adhering to the *Official Languages Act 2003*, means that the opportunity to cognitively reappraise beliefs is being overlooked, and thus predetermined low self-efficacy beliefs remain embedded. Even among the Irish speaking cohort there is an unconscious hierarchical acknowledgement that certain speakers are more apt than others, resulting in capable Irish speakers not only underestimating their abilities, but deferring to these official expert models, such as the Irish language officer, when Irish language queries arise.

Ultimately, the *Official Languages Act 2003* has created an obligation in which the Irish language is now an embedded policy driver in Government departments. The establishment of Irish language officers and the provision of training for staff can potentially create an indirect effect on encouraging staff to seek out opportunities to engage with the

language. However, this study demonstrates that the official recognition of Irish speakers in the office has not led to a higher engagement from non-Irish speakers, and in some cases Irish speakers, in this particular department. There is a demarcation that is reinforced by official staff role profiles and job descriptions, making the deference to officially recognised speakers a regularised occurrence. Furthermore, the autonomy and variety of methods with which individual Government departments determine whether staff are declared as Irish speakers still relies primarily on self-assessment (Ó Coisdealbha, 2019), which as evidenced in this study, only increases the influence of mis-calibrated self-efficacy beliefs. With only 2.62% of the 21,060 staff covered under the Monitoring Report recognised as having Irish language skills (An Coimisinéir Teanga, 2019), and with capable Irish speaking staff such as those identified in this study holding low self-efficacy beliefs – resulting in a potentially larger pool of unrecognised Irish speakers across Government – further research investigating self-efficacy beliefs in other departments is required in order to determine the extent of this phenomenon, as well as the potential for developing efficacy-raising training interventions.

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Appendix 2: Finding lost words: the “savings effect” in the Irish language context

[International Journal of Bilingualism (2022)]

Finding lost words: the “savings effect” in the Irish language context

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Abstract

Aims

By applying the savings paradigm to determine the presence of residual Irish language knowledge, this study seeks to investigate the relearning advantage for the acquisition of words likely to have been acquired during the second language acquisition of Irish compared with newly acquired Irish words. Furthermore, self-efficacy will be assessed as a robust self-assessed measurement of performance.

Methodology

Using a corpus of Irish language, low and high-frequency nouns were used to create a list of ‘old’ and ‘new’ words. 36 participants were tested over two months, across three phases. Each participant was provided with a relearning session before being tested on their individualised list of 40 words. Participants were asked to rate their self-efficacy confidence levels before each testing session.

Data and Analysis

An online survey platform was used at each phase to test residual knowledge and to gather self-efficacy and attitudinal data. Correlation analyses and independent t-tests were carried out to measure the effect sizes over the two-month time period of testing.

Findings

The data provides evidence that Irish nouns likely to have been previously encountered, but since forgotten, are recalled more efficiently than newly encountered Irish nouns. Furthermore, evidence of cognateness as a retrieval strategy reveals an active Irish language residual knowledge base.

Originality

This paper is the first effort in applying the savings paradigm methodology, as demonstrated in de Bot et al. (2004), to the Irish language context, and is the first attempt at measuring perceived pre-test Irish language abilities using self-efficacy.

Implications

With Irish language as a compulsory school subject in Ireland, and so few daily users of the language, the identification of residual Irish knowledge in a population that has not used the language in decades may encourage reactivation of a language presumed to be forgotten.

Background

In 2004, Kees de Bot and colleagues conducted a number of experiments using the savings paradigm to test for residual second language knowledge. Over three experiments conducted in American and Dutch universities, students that were either at the time learning a second language, or had years previously learned a second language, were presented with vocabulary lists consisting of words expected to have been learned or encountered, and words unlikely to have been encountered during second language acquisition of either German or French. The savings paradigm assumes that words previously learned or encountered are never lost, and that these words become part of our residual knowledge. Furthermore, these words can be reactivated in the appropriate conditions, and can be recalled more successfully than newly acquired words. This study seeks to apply the 2004 methodology in the Irish language context with participants that are not current learners or users of the language. In addition, self-efficacy beliefs on Irish language abilities will be investigated.

Language attrition

Language attrition is concerned with the loss of an individual's language skills over a period of time, broadly defined as a "deterioration of linguistic knowledge" (Schmid, 2016, p.186). This phenomenon manifests itself in decreased verbal fluency and lexical diversity, and can affect grammar, syntax and pronunciation (Mickan, 2021). Hansen (2001) distinguishes between language loss as a general decline in an individual or speech community's linguistic skills, and attrition – an individual's gradual process of forgetting. It is this process of forgetting that leads us to consider the implications of residual language memory acting as a 'critical mass', representing a store of language memory that is immune to complete attrition (Pan & Gleason, 1986, p.198). This is particularly pertinent in situations where the loss of contact with a school-learned second language (L2) tends to occur in a dominant first language (L1) environment (Bardovi-Harlig & Stringer, 2010). Previous studies have demonstrated that perceptions of language attrition are often overestimated when participants are tested (Murtagh, 2007; Murtagh & van der Slik, 2004; Weltens, 1989). The strength of these perceptions may allow us to reframe language attrition, not as a linear process of forgetting, moving towards an end-point of complete loss, but rather as a language performance issue due to retrieval issues at the residual level (Sharwood Smith, 1989; Yukawa, 1999).

A number of language attrition theories seek to explain the idiosyncratic nature of these retrieval issues, whereby forgetting is not wholly attributable to time factors. For example, interference theory suggests that 'new' memories compete with embedded 'old' memories, ultimately affecting the acquisition of new knowledge or the retrieval of even older memories. Anderson et al. (1994) suggest that retrieval-induced forgetting is the result of the repeated retrieval of certain memories, leading to a strengthening of those items which in turn causes the loss of retrieval access to other related items. This theory is supported by Paradis' Activation Threshold Hypothesis (1993, 2007), which assumes that items have a threshold which requires a certain

degree of maintenance or activation in order to be retrieved. Once an item falls below this activation threshold, it become much more difficult to retrieve.

The Irish language context

Irish is the first of two official working languages designated in the Irish Constitution, with English as the second official language. Irish has been recognised as an official language of the European Union since 2007. However, despite its official status, Irish remains a minority language, best represented as a learned L2 (McCloskey, 2001). The Irish language is a member of the Celtic sub-group of Indo-European languages, and has been spoken on the island of Ireland since before 600 AD (Doyle, 2015; Hindley, 1990). By the time that Ireland was incorporated into the British State in 1801 - and exacerbated by the Great Famine in the 1840s - English had become viewed as prerequisite for economic prosperity, thus leading to a rapid increase in the acquisition of English among the Irish population (Kelly, 2002). Following independence from the British state in 1922, the Irish government began a policy of reviving the Irish language through the school system. The Irish language became a compulsory part of the school curriculum, and a requirement to pass the terminal exam, the Leaving Certificate, in 1937. By the time the average student in Ireland has completed the full education cycle, they will have been exposed to over 2,300 hours of formal Irish language tuition over 13 years (Ó Laoire, 2005). However, despite this exposure, only around 40% of the population (1.8 million people aged 3 years and over) claim to be able to speak the language, with just over 73,000 using it on a daily basis (CSO, 2017). The data is based on a single question on the Census of Population – ‘can you speak Irish?’. Attrition research into the Irish language has been limited to recent school leavers, and has demonstrated that even after only 18 months, and followed by contradictory test results, perceived language loss emerges as a worrying phenomenon (Murtagh, 2003, 2007; Murtagh & van der Slik, 2004). The wider implications are that a large proportion of the

population may perceive inactive, sub-threshold Irish language competencies as being forgotten or attrited, thus preventing efforts at accessing this knowledge. This is compounded further when extended periods of non-use are factored in, as is the case in Ireland where Irish is largely learned as a second language for the purposes of passing a State examination (Darmody & Daly, 2015).

Second language self-efficacy

Self-efficacy represents the beliefs an individual has in their abilities to carry out a specific task (Bandura, 1997; Mills, 2014). This is largely due to how possible future task outcomes are cognitively represented for individuals, often bypassing true competencies. In the Irish context, a student's final grade is derived from their performance on a single examination, whereby environmental factors or individual differences are likely to affect this single performance opportunity. A language learner that perceives themselves as being highly efficacious in the L2 is more likely to take on more difficult tasks and engage with the acquisition process more positively. The low efficacious learners tend to avoid challenging or interactive L2 experiences, thus withdrawing from the acquisition and language maintenance process despite potentially having abilities or previous performance successes. Studies have shown how language self-efficacy negatively correlates with apprehension and performance-avoidance (Pajares & Valiante, 2001), and more importantly, is emerging as a potential contributing factor in language attrition and maintenance (Romanowski, 2021). Graham (2006) has demonstrated how low efficacy language learners tend to make negative attributions to their academic outcomes, often claiming the language learning environment is uncontrollable and inaccessible, creating overall global assumptions of attrition. This perception of inaccessibility may be a potential indicator, or even predictor, of mis-calibrated perceptions of language loss.

L2 self-efficacy beliefs are formed by individuals interpreting information from four sources: enactive mastery experiences; vicarious experiences; social persuasion; and physiological states (Bandura,

1997). Enactive mastery experiences are based on previous performances in the L2 and prone to recency biases whereby the most proximal negative or positive results tend to emerge as a defining self-referent (Tschannen-Moran et al. 1998). Vicarious experiences encompass two sub-sources of L2 self-efficacy information. Firstly, a comparative assessment of the performance of peers occurs when individuals observe the success or failings of classmates, thus creating a social diagnostic against which to judge their own abilities. Secondly, where direct knowledge of capabilities is absent, individuals rely more heavily on modelled indicators such as a teacher or family member. These models have the power to raise self-efficacy by creating exemplar performances in the L2 which individuals seek to emulate (Schunk & DiBenedetto, 2016). Social or verbal persuasion is a common, indirect source of self-efficacy, usually exhibited as feedback and encouragement from peers or models (Bandura, 1997). If feedback is absent or discontinued, then previous efficacy-raising feedback events are likely to become redundant (Hutchinson et al. 2008). Finally, physiological states are how individuals interpret affective reactions to tasks. For example, a negative cognitive appraisal of an emotional state can lead to avoidance behaviour, with individuals believing that achievement is beyond their direct control (Turk, 2004).

Second language self-efficacy and the Irish language

The cumulative effect of individuals drawing on these sources is that L2 self-percepts create a filtering mechanism through which self-appraisals of L2 abilities are formed. In the absence of performance appraisal opportunities since leaving school, Irish adults may be developing misrepresentations of the learning experience, and by extension, having lasting consequences following periods of non-use of the L2 (Holec, 1996). The attrition studies carried out by Murtagh, and Murtagh and van der Slik cited above only highlight the wider implications of determining Irish language knowledge by using a single, omnibus question. Whereas self-efficacy is based on judging competencies in predicting future performances on specific tasks, self-

assessment – the default methodology for Census of Population forms – represents retrospective judgements that occur *after* the completion of a task. For self-declared non-speakers of Irish, these judgements are, for the majority, based on appraising knowledge on an oral examination that represented a proportion of marks, taken, for some, decades earlier. A measure of the other Irish linguistic sub-skills, based on graded confidence levels over specific tasks may be a more accurate predictor of performance (Bandura, 2006). For example, a person may declare that they cannot *speak* the Irish language, but may find that designated tasks advocated in self-efficacy appraisals such as ‘how confident are you that you can understand the main points of an Irish language news article?’ may contradict this belief, thus leading to a more engaged self-appraisal of Irish language abilities (Barry, 2020). The current study provides an opportunity to employ self-efficacy as a perceptual measure of Irish L2 residual lexical knowledge retrieval abilities.

The relearning advantage

Ebbinghaus (1885) posited that forgetting is not a linear process, but one in which the bulk of forgetting occurs over the first minutes and hours after learning, followed by a levelling-off; represented as a ‘forgetting curve’. The probability of recall is modelled as an exponential function of memory strength and the period since last activation (Choffin et al. 2019). This asymptotic view of knowledge retention has been demonstrated in the linguistic domain most famously by Bahrick (1984), who found residual Spanish knowledge in participants after prolonged periods of non-use (over 50 years); referring to knowledge with a life-span in excess of 25 years as ‘permastore content’, immune to further loss.

Ebbinghaus’ forgetting curve allows us to test the thesis that relearning previously learned vocabulary provides a learning advantage over new vocabulary items. Nelson (1978), investigated this ‘savings’ paradigm in conducting a number of experiments testing subthreshold memory, finding the savings effect to be more sensitive to testing than

recognition. The savings paradigm assumes that that “words, once learned, are never really lost” and that “there are residues of knowledge” that can potentially be reactivated (de Bot et al., 2004, p.375). The savings paradigm in the residual language context was tested and proved in de Bot and Stoessel (2000), albeit on a very small scale with two participants and up to 30 years of non-use of the second language. The methodology was applied on a larger scale in de Bot et al. (2004), where the authors, over the course of three different studies, tested sub-threshold memory with a L2→L1 translation task. The study concluded that a residual knowledge of a L2 remains, and that participants were more likely to successfully recall words that had seen over the course of the L2 acquisition, i.e., retrieving these words from residual knowledge.

Measuring long-term memory

In order to perceive and produce a second language, several types of knowledge are required. Skehan (1998) categorises this knowledge into an exemplar-based system where the L2 is encoded as lexical units such as words and phrases, and a rule-based system required to create syntactic or morphological constructions. DeKeyser (2005) proposes that in order to maintain the linguistic structure, the learner subconsciously forfeits the rule-based system, resulting in a strengthening of the passive, exemplar-based system. It is this passive, or receptive L2 knowledge that is far less affected by attrition than active, or productive knowledge (de Groot & Keijzer, 2000). De Bot and colleagues employed two types of activation thresholds to test the savings paradigm - recall and recognition. As can be seen in figure 1, below, to recall, or produce a word, the activation threshold is higher than passively recognising a word.

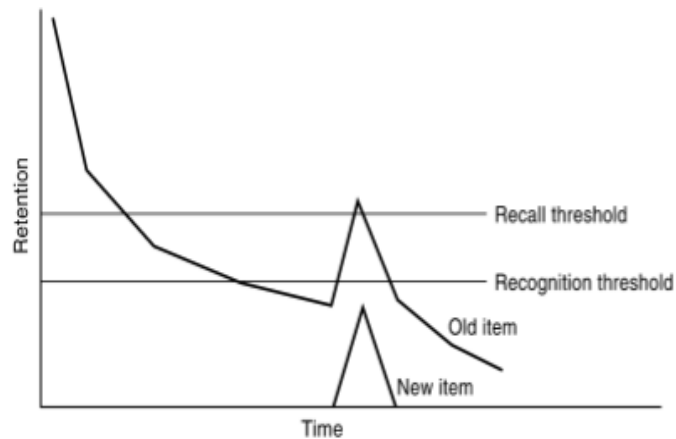


Figure 3: Savings effect (taken from de Bot et al., 2004; de Bot & Stoessel, 2000)

As highlighted in de Bot and Stoessel (2000), measuring long-term linguistic knowledge is a complex process. One of the main issues is establishing a baseline for this knowledge for each participant. To test the savings paradigm, the most practical approach is to adapt that taken in de Bot et al. (2004) and de Bot and Stoessel (2000) where the authors employed a L2→L1 translation task as an alternative to picture matching tasks. The most effective operationalisation in these studies is in the final two experiments in the 2004 investigation, where vocabulary pre-tests were administered to determine forgotten words. This methodology potentially represents a hybrid testing of productive recall and passive recognition that prompts accessing residual lexical knowledge by initially testing recognition with a large word list, followed by testing recall of individualised word lists derived from the initial list. De Bot et al. (2004) used standardised lists of basic, target vocabulary under the assumption that students of each language would have been expected to have encountered these during the acquisition process. Incorrectly translated words were used to create individualised word lists for participants. The savings paradigm was then successfully tested to prove that ‘old’ words likely to have been acquired in the past were more successfully recalled than ‘new’ words.

Creating a word list: New Corpus for Ireland

The same methodology applied by de Bot et al. (2004), where a standardised list, along with participants' current teachers' judgement, were used to create a word list, could not be applied in this study. As a standardised list does not exist for the Irish language and participants were not current learners, a bespoke, representative list, or corpus of words, was required. In linguistics research, a corpus represents a collection of searchable texts, usually available in electronic format. Corpora allow the user to generate specific wordlists based on frequency, and categorised by word class. The 30-million word New Corpus for Ireland was developed as part of the creation of a new English-to-Irish Dictionary launched under the direction of Foras na Gaeilge in 2013; the body responsible for promoting the Irish language on the island of Ireland (Foras na Gaeilge, 2021; Kilgarriff et al. 2006). The scope of the corpus covers a number of text types such as fiction and non-fiction books, newspapers, official documents, websites, etc. from the period 1883 to present – a period that coincides with the Royal Irish Academy electronic archive project (Kilgarriff et al., 2006). The electronic corpus is accessible using the online text analysis tool, Sketch Engine.

Using the corpus, a list was generated of the most and least frequently occurring Irish nouns across the 30 million words. Some other word classes were returned which were removed along with any proper nouns (for example, *Éire* = Ireland; *Éamonn* = Eamonn; etc). A list of 70 'old' words representing the highest frequency nouns in the corpus was created in the belief that participants were likely to have encountered some of these words during their education (for example, *am* (time), *bliain* (year), *fios* (knowledge/information), *tús* (start/beginning/onset), etc.). A list of 30 'new' words was created from the lowest frequency nouns in the corpus. It was expected that participants were unlikely to have encountered these words during their acquisition of Irish. Examples include: *sonra* (detail); *iomaíocht* (rivalry/competition); and *comharsa* (neighbour).

Similar to English, Irish noun meanings change according to the sentence context. A decision was taken not to provide contexts for each noun, as participants may have learned the noun in a number of contexts, therefore having a different English translation in their memory. For example, a noun such as *deireadh* was found to have at least eight translations based on domain of use - end/ending/conclusion/termination/rear/back/stern/all. To try to represent the noun in a single context would potentially discount the other seven contextual translations. Using the Collins Pocket Irish Dictionary (Mac Mathúna & Corráin, 1999), the English translations for each noun were compiled, with the first translation assigned main translation status for the relearning session in phase two. If a participant used one of the other correct translation options in phase one, then that word was deemed correctly translated and the word not considered for the phase 2 test. Finally, the 100-word list and translations were verified by a native Irish language speaker and current practitioner in the language.

Research questions

By applying the savings paradigm to test for residual knowledge, the main objective of this study will be to determine whether Irish adults that have taken compulsory Irish as a subject in their final school exam, and are not current users of the language, are capable of accessing their residual knowledge of Irish nouns. To investigate residual memory, participants will be presented with, and tested on, an equal set of words expected to have been encountered but forgotten, and a set of words unlikely to have been encountered during their L2 acquisition of Irish in school. The use of Irish self-efficacy beliefs will be examined as a potential alternative to self-assessing global skills using single declarative statements. It is expected that self-efficacy will provide a richer overview of Irish L2 perceptions at each pre-test phase. By integrating self-efficacy and residual knowledge testing, the following research questions will be undertaken:

1. Is there a relearning advantage for ‘old’ likely to have been encountered Irish nouns over ‘new’ unlikely to have been encountered Irish nouns?
2. Does self-efficacy provide a more accurate measure of performance when compared with a single omnibus question on general Irish language skills?

Methodology

Procedure

The study took place over three phases across two months, administered using the online survey software, Qualtrics. Phase 1 acted as a pre-test to determine a baseline set of words for each participant. Phase 2 combined a relearning (‘savings’) session and the first test, with phase 3 providing the retest phase. Phase 1 presented the list of 100 Irish nouns preceded by a self-efficacy scale. Participants were asked to translate as many of the 100 words as possible. The list was divided into groups of 10 words appearing on screen at a time for an unrestricted time. Using the results from this phase, an individualised set of 40 words for phase 2 and phase 3 testing was created for each participant. These 40 words were derived from incorrectly translated, or not translated at all nouns in phase 1. Each list of 40 words contained 20 ‘old’ and 20 ‘new’ words. The individualised tests were emailed to participants one week after phase 1.

Phase 2 – representing the relearning session and first testing session - began with an information page on the testing procedure, followed by each participant presented with their 40 nouns (20 ‘old’ and 20 ‘new’, as described above) and their English translations. Each word and translation was presented on screen for five seconds before moving automatically on to the next noun and translation. Participants were then given a brief distractor task: a self-efficacy question; a series of attitudinal questions related to their experiences with learning Irish; and a mini quiz based on Irish language facts. Participants were then tested on the 40 words presented at the beginning of this phase. Each Irish noun appeared on screen for ten seconds allowing participants to

enter the English translation into a box below the word, before automatically moving to the next word. A countdown timer appeared with each word, and participants were not allowed to go back to a previous screen. The time restrictions were added to control for the temptation to search for translations online.

The final phase took place two months after phase two. Participants were emailed the link to their unique list of 40 words already tested on in phase 2. On this occasion, there was no relearning session. Participants were asked a final self-efficacy question before being presented with the 40 words to be translated. Again, mirroring the methods of phase 2, each word appeared one at a time on screen, with a time limit of ten seconds to write the English translation.

Participants

A recruitment notice was circulated across social media. Selection criteria was limited to adults that had taken the terminal Irish exam in school, and were not current users of the language, or native speakers. 103 participants completed phase one. 87 participants completed the second phase and 76 participants completed phase three. However, due to technical issues with the online survey, some participants were presented with a partial list of their individualised set of 40 words, and 3 participants were removed due to very high results. The final sample size comprised 36 participants (28 females, 7 males and 1 non-binary). Please note that due to the sample size and skewed proportion of females to males and non-binary, gender did not form part of the analysis in this study. Participant age by category is in table 1 below.

Table 1 Participant age by category

Age category	<i>18-29 years</i>	<i>30-39 years</i>	<i>40-49 years</i>	<i>50-64 years</i>
No. of participants	3	16	6	10

Self-efficacy scales

Self-efficacy was measured during each phase. In phase 1, participants were presented with a self-efficacy scale asking how confident they were in translating the 100 Irish nouns they were about to see. The scale consisted of six items (‘under 10 words’, ‘10 to 20 words’, up to ‘over

80 words') with a confidence scale of 0% to 100%, expressed as a six-point Likert scale in increments of 20% ranging from '0% - no confidence' to '100% - complete confidence'. The scale construction is based on recommendations from Bandura (2006), where measurements should be based on a ratio scale with specific parameters, including a representation of absolute zero (0% - no confidence). The scale achieved a high level of internal consistency using Cronbach's alpha ($\alpha=.91$) for the initial 103 participants, therefore representing a robust measure of self-efficacy beliefs. Phase 1 also included a single, non task specific question on confidence in overall Irish abilities to test for the effectiveness of a single self-assessment question on abilities.

In phase 2, participants were presented with their unique set of 40 Irish nouns and their English translations to learn. Following this relearning session, and as part of the distractor before the test, they were provided with a similar self-efficacy scale encountered in phase 1. This time they were presented with 5 items ('under 5 words', 'between 6 and 10 words', up to 'over 30 words') and asked to rate their confidence using the scale and increments from phase 1. In the final phase, two months later, before being presented with the retest of their 40 words, they were asked a single question – 'how confident are you in your abilities to take this test?', again using the same percentage and increments as the previous phases. The reasoning behind a single question was based on the fact that following two months, and in the absence of a relearning session where ability judgements were mapped in the short term directly to a recently learned list, the testing environment itself was no longer directly comparable.

Results

Period of non-use and context of use

Participants were asked to indicate the last time that they used Irish, and in what context. The majority of participants had not used Irish in over 20 years, with only 4 participants in the last 10 years (see table 2 below. Note: one participant did not answer). 25 participants last used

Irish in the education system. 5 participants last used Irish in a course taken after school, and 6 last used Irish with a native speaker. Participants were also asked how they answer on the Census question ‘can you speak Irish?’. Interestingly, 11 participants stated ‘yes’, despite all 11 declaring their last time of using Irish to be at least over 10 years ago. Finally, in terms of positive language orientation, 28 participants express a desire to relearn Irish.

Table 2 Participants' period of non-use

Last time using Irish	<i>Within the last 5 years</i>	<i>Between 5 and 10 years</i>	<i>Between 10 and 20 years</i>	<i>Over 20 years</i>
No. of participants	2	2	12	19

The savings effect

The difference between the 70 old words and 30 new words translated in the phase 1 pre-test was significant, $t(44.71) = 21.99$, $p < .001$, $d = 5.18$, 95% CI[32.6, 39.2], indicating a degree of residual knowledge for the old nouns compared to the less frequently occurring, new nouns. The relearning session at phase 2 shows that on average, participants retained 30% more old words than new. However, this increases in the phase 3 re-test two months later, where participants successfully retained over 60% more old words than new. The difference between old and new words retained at phase 2 was significant, $t(69.5) = 2.76$, $p < .05$, $d = .65$, 95% CI[.81, 5.1]. The difference at phase 3 was also significant, $t(65) = 5.82$, $p < .005$, $d = 1.37$, 95% CI[2.46, 5.04].

Table 3 Average number of old and new items translated correctly in both phases. SDs in parentheses.

	Phase 1 (pre-test) 100 words (70 old/ 30 new)	Phase 2 (savings) 40 words (20 old/ 20 new)	Phase 3 (re-test) 40 words (20 old/ 20 new)
Old	40.33 (9.17)	9.83 (4.34)	6.19 (3.09)
New	4.42 (3.45)	6.89 (4.71)	2.44 (2.32)

Relearning words

Among the translations provided by participants, a number of commonalities emerged. For both the new and old words that participants were asked to learn and recall, the majority of participants appeared to fall back on cognates as a translation strategy for recall. Cognates are L2 translation equivalents that have a similar form to the L1 form (Gollan & Acenas, 2004), and are often used by individuals as a strategy in L2 acquisition, where patterns are established to reduce cognitive load during retrieval tasks (see Lubliner & Hiebert, 2011; Otwinowska & Szewczyk, 2019). Using cognates in L2 tasks is unstable, as residual lexical knowledge can be bypassed in favour of inhibitory, incorrectly transferred word forms (de Bot & Stoessel, 2000; Schmid & Mehotcheva, 2012). In this study, participants appeared to rely on cognateness as a strategy for translating words that had been forgotten. For example, *trádáil* (trade) was frequently translated as ‘traditional’, *comharsa* (neighbour) as ‘conversation’ or ‘course’, *gradam* (reputation) as ‘graduation’ or ‘grade’, and *tógáil* (upbringing) as ‘take’. Interestingly, some words were mis-translated as false cognates of common Irish words. L2 false cognates are words that bear a similar appearance but are not etymologically related (Moss, 1992). For example, *béile* (meal) was translated as ‘mouth’ (*béal*), *céile* (partner) as the adverb ‘together’ (*le chéile*), *súil* (eye) as ‘walk’ (*siúl*), and *dean* (dean) as the verb ‘to do’ (*déan*).

Self-efficacy

As the strongest source of self-efficacy beliefs are developed from previous experiences (Bandura, 1986), participants were asked to give opinions on their experiences with learning Irish in school using a 5-point Likert scale (table 4 below). The majority expressed either positive or very positive experiences. Furthermore, 21 participants declared that they were satisfied with their Irish Leaving Certificate results – the terminal examination experienced at the end of the senior education cycle, and last formal source of enactive mastery experiences for most.

Table 4 Opinions on experience with learning Irish in school

<i>Very positive</i>	<i>Positive</i>	<i>No opinion</i>	<i>Negative</i>	<i>Very negative</i>
5	13	4	9	5

In phase 1, and in line with the Census of Population style of language question that all participants are familiar with since leaving education, participants were asked to indicate their general level of confidence in their overall Irish abilities (see table 5 below). Despite their previous enactive mastery experiences, the mean confidence level for the 36 participants was 29.4% (SD=18.8%). Participants were then asked to provide their level of confidence on the number of 100 words they believed that they would correctly translate using six categories from ‘under 10’ to ‘over 80’ words. 32 participants expressed their highest level of confidence in being able translate up to 20 words only, with translation confidence levels decreasing dramatically as the number of words increased. The mean result for all participants in translating the 100 words was 44.9 words out of 100 (SD=11.26), indicating an underestimation of general ability as well as self-efficacy.

In order to assess any change in self-efficacy during the two months between phase 2 and phase 3, the phase 2 five-item scale was averaged to get a percentage score. A direct comparison was not possible, as phase 3 only posed a single question. However, the differences between the phase 2 self-efficacy mean and the phase 3 single question self-efficacy declaration revealed that 24 participants decreased their self-efficacy scores in phase 3, six participants were unchanged, with the remaining five increasing their beliefs.

A follow-up correlation analysis was carried out to determine if self-efficacy declarations aligned with performance on phase 2 and 3. Pearson’s correlation coefficient for the mean self-efficacy score and results on phase 2 emerged as weak but statistically significant (N=36, $r=.35$, $p<.05$, 95% CI[.03, .61]). For phase 3 performance and the single self-efficacy score, Pearson’s correlation coefficient emerged as medium and statistically significant (N=37, $r=.42$, $p<.05$, 95% CI[.11,

.66]. This suggests that self-efficacy beliefs became more aligned with actual performance by the final phase of the study.

Table 5 Mean self-efficacy percentages for all participants at each phase

Phase 1		Phase 2	Phase 3
Mean confidence on overall Irish abilities	Mean self-efficacy (6-item scale)	Mean self-efficacy (5-item scale)	Mean self-efficacy on performing the final translation test
29.4% (SD=18.8%)	48.7% (SD=18%)	51.2% (SD=19.4%)	38.6% (SD=16.8%)

Discussion

This study aimed to apply the savings approach to testing vocabulary, as outlined in de Bot et al. (2004), to the Irish language context. The savings paradigm was evidenced with a significant relearning effect in both phase 2 and, two months later, in phase 3. Patterns of recall are almost identical to those found in the final experiment in the 2004 study, with the added advantage of effect sizes being reported in this study, and a much larger sample size. It is evident that the assumed-to-have-been-encountered ‘old’ words are more easily retrieved for translation than the ‘new’ words. The large number of ‘new’ words recalled at phase 2 compared to phase 3, two months later, is likely to be due to the short time between memorising and retesting, with participants spending around 6 minutes on average for the distractor tasks.

A further objective was to investigate the use of L2 self-efficacy beliefs as a measure of performance, in an effort to understand Irish language task perceptions. In line with previous findings (see Schunk, 1991; Bandura, 1997), self-efficacy is shown in this study to provide a much more accurate predictor of performance than a single global competency question - which was low compared to performance on phase 1, where participants correctly translated almost 45 words out of 100. Self-efficacy declarations on phase 1, where most participants predicted being most confident with translating only 20 words, may be due to this being the first testing experience for participants since leaving school. Another possibility is participants drawing on other

long-term embedded sources of Irish language self-efficacy such as devaluative feedback, inappropriate or weak models, or recall of physiological reactions from school exams. However, the attitudinal data contradicts this, with participants largely expressing positive school experiences, and satisfaction with their final exam results. This appears to be a general population trait in Irish language questionnaires, where there is a largely positive but passive support for the language (see Darmody & Daly, 2015; Mac Gréil & Rhatigan, 2009). To complicate matters further, one must also consider the 11 subjects that self-declared themselves as Irish speakers on the Census question. A further investigation into the establishment of these seemingly entangled, contradictory beliefs is required. Despite these confounding variables, there does appear to be an advantage in asking people to provide a confidence rating on a language task rather than an outright declaration of speaking ability as a measure of competency. The use of a single global question on Irish skills at phase 1 (Mean=29.4%) when compared with a task-specific self-efficacy assessment at phase 3 (Mean=38.6%) reveals that self-efficacy provides a more aligned metric of Irish language skills perceptions.

The use of cognates as a translation strategy reveals a potential extra source of residual knowledge, even in instances where false cognates are employed. Participants reveal that there is a residual level of Irish vocabulary remaining at the recognition threshold, whereby the process appears to be as follows: the Irish word to be translated to English is presented; an Irish word of similar form is identified and retrieved at the residual level; and this word is subsequently translated into English. This provides evidence of a functioning retrieval system, albeit one that would require a degree of metacognitive training or strategising in order to perhaps even recalibrate the recall/productive output, thus providing an even greater relearning advantage. This finding merits a further, more robust investigation to determine the extent of the phenomenon, as well as the potential benefits that can be derived from this in a relearning context.

Limitations

It is important to highlight that the findings and discussion points above should be interpreted in light of the following limitations. The low sample size may not be representative of the population as a whole, therefore making generalisations difficult. Due to Covid-19 restrictions, the unsupervised testing environment, while controlled for using a countdown timer, may not have provided the most robust testing procedure. It is difficult to state whether subjects quickly searched for the translation online or not before answering. Regarding residual knowledge, as it is impossible to access the vocabulary exposure of each participant, it is difficult to state that the ‘old’ words had been encountered during their acquisition process. However, the use of a corpus to mitigate this is the best control available for assessing the strength of the savings paradigm. Finally, the self-efficacy scale mean scores on phase 1 and phase 2 must be interpreted with caution. Though useful as an illustration of pre-performance perceptions, the scales are not identical and refer to different referents (100 words vs. 40 words). However, they do appear to provide a more accurate and dynamic measure of task-specific abilities when compared with a single question on general skills.

Conclusion

This study further substantiates the use of the savings paradigm testing methodology as a means of testing pre-attrition knowledge. The results in this study provide two immediate benefits to stakeholders. Firstly, former Irish L2 learners who have not accessed school-learned Irish knowledge in a number of years appear to be harbouring a residual knowledge of Irish unbeknownst to themselves. With the national metric for Irish linguistic knowledge reduced to a single measure of oral production skills, people may not feel encouraged to consider accessing these residual knowledge skills. As evidenced from this study, self-efficacy provides a robust, more accurate alternative to measuring Irish language skills. Secondly, the attempted retrieval of L2 cognates in this study is an unexpected, positive finding. This not only

suggests the further presence of residual vocabulary knowledge, but may provide an opportunity for developing interventions for those seeking to relearn (or more appropriately “reactivate”) Irish language knowledge that may be perceived to have been attrited, perhaps even leading to a much larger base of engaged Irish L2 users.

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Appendix 3: Irish language self-efficacy beliefs: mediators of performance and resources

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Irish language self-efficacy beliefs: mediators of performance and resources

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Abstract

Self-efficacy, the system of beliefs that individuals possess which enables them to exercise control and actions when faced with a specific task, is an essential component to language learning, as it has the potential to promote the self-regulatory capacity required for successful language acquisition and performance. One way in which self-efficacy mediates language learning is exhibited in how individuals dedicate resources such as effort and time to overcoming tasks. The aim of this study was to determine the influence of Irish language self-efficacy beliefs on performance and resources allocated by Irish adults ($N=450$) on an Irish language reading test. Over two testing phases, three groups were formed based on results in phase one: a control group; a group of high performers; and a group of low performers. Manipulated comparative feedback and false results produced highly significant effects on performance and resources allocated, with low performing participants receiving a positive intervention consisting of false inflated results, leading to improved performance and increased time dedicated to task completion. High performers who received a negative intervention consisting of falsely deflated results saw a significant decrease in performance and the time allocated post-manipulation. The control group also saw a decrease in average performance scores, making the low performing group's performance even more

noteworthy. Overall, findings show that self-efficacy beliefs, though initially closely aligned with actual performance, can in fact be manipulated to influence performance outcomes.

Keywords: self-efficacy, Irish language, manipulation, minority languages, perceptions

Introduction

The Irish language is a compulsory school subject in Ireland, with the majority of adults having experienced over 2,300 hours of formal, classroom tuition by the time they complete the full education cycle, at age 17 or 18 years (Ó Laoire, 2005). Despite this amount of exposure, over 60% of the adult population self-declare as having no speaking ability – the only metric used to measure Irish language competence in the Census of Population (CSO, 2018). A single question lacks the nuanced gradations required for determining the multi-faceted skills required for language competence. Census data trends reveal self-declarations in Irish language abilities to be stable, only demonstrating very slight fluctuations in the number of self-declared Irish speakers recorded every five years. Self-efficacy, which looks at perceptions of abilities at a task-specific level, may provide a more appropriate approach to assessing language abilities that is lacking in the State's current approach to gathering Irish language data. Furthermore, if self-efficacy interventions prove significant, then there may be opportunities to demonstrate to self-assessed non-speakers of Irish that perceptions of Irish language loss may be mis-calibrated. To date investigations into Irish language self-efficacy, and its mediating influence of performance have been very limited, and confined to qualitative studies (Barry, 2020). The only research into Irish self-assessment and task alignment related to Irish language acquisition has been conducted with a small sample size and with students aged around 12 years (Dillon, 2016).

Literature review

Self-efficacy

Self-efficacy, the central concept of Bandura's (1977) social cognitive theory, represents the system of beliefs that individuals possess which enables them to exercise control and actions when faced with a specific task (Mills et al., 2007). Perceived ability to perform a target behaviour has been shown to be a better predictor of performance than ability, previous success, or constructs such as self-concept or self-confidence (Bjorklund et al., 2020; Hendricks, 2014; Schunk, 1991). As perceived self-efficacy is not a measure of skill, but the beliefs held about what one can do with those skills under specific circumstances, i.e. the potential performance, individuals are more likely to perform tasks they perceive themselves capable of accomplishing and are less likely to engage when tasks appear to be beyond their competencies (Zeldin & Pajares, 2000).

Self-efficacy acts as a contributory motivational component to the individual difference variables that determine success in language learning (Dörnyei, 2005; Schunk, 1981), often acting as a mediator of attitude and engagement (Tremblay & Gardner, 1995). With Moreno and Kilpatrick (2018) demonstrating how second language usage improves efficacy beliefs, the impact of efficacy-lowering variables such as anxiety only leads to a withdrawal from the communicative process, as well as a lowering of overall efficacy perceptions in the linguistic domain. A further issue in the second language learning domain is that individuals over-estimating the capacity to achieve a task will become demoralised with repeated failures, while those that underestimate abilities potentially avoid developmental opportunities (Schunk, 1981).

Second language investigations have already established relationships between self-efficacy and L2 achievements, learning strategies, self-regulation, and reading and listening proficiency (Graham, 2006; Mills et al., 2006; Mills et al., 2007). Using multiple regression analyses, both Hsieh and Kang (2010) and Mills et al. (2006) demonstrated self-efficacy as a significant predictor of L2 achievement. An investigation into English L2 pronunciation skills and learning strategies conducted

by Sardegna et al. (2018), utilising confirmatory factor analysis modelling, found that learners' self-efficacy positively related to efforts to improve pronunciation, while negatively relating to anxiety, worry or nervousness. Self-efficacy's relationship to self-regulation, and subsequently performance, was demonstrated in Saito (2020), while L2 teacher self-efficacy has been shown to correlate positively with vocational responsibilities such as promoting L2 values and learning in general (Swanson, 2012).

Self-efficacy-performance relationship

Recent discussions have emerged on the causality and direction of self-efficacy, and whether self-efficacy is a driver of future performance or a result of previous, past performances. Control theory (Powers, 1991) – which considers how confidence and performance evolve over periods of time - challenges social cognitive theory's widely held belief that the self-efficacy-performance relationship is by default positive, in suggesting that this relationship can be positive, negative, or null depending on how self-efficacy beliefs have been constructed (Vancouver & Kendall, 2006). For example, an individual with high self-efficacy may actually underperform due to over-confidence or disinterest if the task is not challenging. A meta-analysis of 38 self-efficacy studies at the within-subjects level, conducted by Sitzmann and Yeo (2013), shows that correlations between past performance and self-efficacy are positive and more significant when compared with self-efficacy and future performance relationships. This finding is supported by findings in Lindsley et al. (1995), where self-efficacy is established as the cumulative assessment of previous performances, be they failures or successes, and is in fact, self-correcting, thus recalibrating to what appear to be embedded beliefs. This theoretical approach suggests that self-efficacy is primarily a product of past performances rather than a mobiliser of future performances, and is not as dynamic as previous empirical evidence suggests.

Sources of linguistic self-efficacy

The differences between an individual's perceptions of their second language self-efficacy and their actual competency levels are the result of a complex process of self-persuasion that relies on the cognitive processing of four sources of influence: enactive mastery experience – encompassing perceptions of previous performances; vicarious experiences – experiences with social modelling and social comparison; verbal persuasion – reinforcing or devaluative feedback; and physiological and affective states – the emotional reaction triggered when faced with a task (Bandura, 1986; Bandura, 1995). Mastery experiences are the beliefs based on previous experiences with the target language and are regarded as the strongest source. They provide authentic evidence for individuals, with successes raising efficacy beliefs, while failures lowering them (Bandura, 1997). A raw performance score is not necessarily the only source of mastery experience. For example, the pass/fail culture within the school or region, or how an individual interprets experiences all contribute to the influence of these previous performances on L2 learners (Chan & Lam, 2010).

Vicarious experiences are derived from two sources of information: social comparison with peers, and modelling. When individuals have little knowledge or experience needed for judging their capacity to complete a task, observing the success or failings of others of similar capabilities becomes a highly influential source of self-efficacy, on occasion impacting more directly than a comparative language-related enactive mastery experience (Barry, 2020). An individual's adequacy is generally judged in relation to a normative comparison with the performance of others (Bandura, 1997). When direct knowledge of capabilities is absent, individuals rely more heavily on modelled indicators. Students will often seek out models with a level of task competency to which they aspire – often represented by their status, power, or prestige, such as a teacher (Usher, 2009).

Social or verbal persuasion is a common, indirect source of self-efficacy, usually exhibited as feedback and encouragement from peers or models such as a teacher or parent (Bandura, 1997). According to

Zeldin and Pajares (2000), social persuasion is balanced more towards having the power to undermine efficacy beliefs than strengthen them. This is particularly significant in academic settings where teachers and peers are the immediate sources of social persuasion, with teachers establishing evaluative standards that have the power to determine a student's mastery experience (Chan & Lam, 2010).

Situations that elicit emotional arousal provide informative value to individuals assessing competencies. It is the interpretation of this somatic information, and not the physiological state itself that individuals infer as evidence of debilitating-arousing influences (Bandura, 1997). Interpretations are often weighted towards the outcomes of previous mastery experiences, with high-efficacy learners likely to find moderate affective arousal beneficial, while low-efficacy learners find the same prompts debilitating in nature. L2 performance phenomena, such as foreign language anxiety (Horwitz et al., 1986), have been shown to manifest in low efficacious learners much more so than in highly efficacious learners (Torres & Turner, 2016).

Resource allocation

According to Beck and Schmidt (2012, p.206), 'motivated behaviour is essentially a series of decisions about where to allocate resources and how many resources to allocate'. In this context, self-efficacy can be categorised as a form of goal-directed expectancy involving a negative feedback system in which individuals identify the discrepancy between perceived abilities and the resources required to reach the target goal (Bandura, 1993; Stirin Tzur et al., 2016). Allocating resources such as time and effort to overcome challenges is a key characteristic of high self-efficacy language learners and is related to self-regulation – a significant predictor of second language success (Mills et al., 2007). When resources are perceived as being unavailable due to low self-efficacy beliefs, negative associations develop with the second language as the discrepancy between current and desired states increase (Piniel & Csizér, 2013). While resource allocation and self-efficacy are regarded as being positively related, recent studies have provided

contrary evidence, suggesting that increased self-efficacy can actually reduce resources as individuals believe discrepancies are minimal, while negative efficacy perceptions lead to adaptive behaviours that seek to improve performance. For example, in Beck and Schmidt (2015), participants were randomly assigned to two conditions, scarce time and abundant time, for completing a maths test (42 questions divided equally over 6 blocks). The time scarce condition allowed participants to freely allocate the 7 minutes allotted for solving each block. Results show that self-efficacy has a negative relationship with resource allocation under the time scarce condition, with low-efficacy participants allocating more time per question in an attempt to achieve at least a minimal level of performance, while high-efficacy participants, confident in abilities, tend to allocate much less time per question. However, in the time abundant condition, a positive relationship emerges, where participants with high self-efficacy seek to achieve higher results through increased resource allocation. While results demonstrate a negative relationship in the time scarce condition, it is difficult to determine the potential influence of confounding variables such as test strategy or confidence, where high-efficacious individuals are willing to take risks where parameters such as time are restricted. Furthermore, it may be difficult to generalise findings from the study in a second language context, as individuals are unlikely to experience abundant time conditions when it comes to using a language.

Vancouver et al. (2008) consider a number of empirical self-efficacy motivation models related to resource allocation, advocating for a discontinuous model in a study involving participants determining time required to click on moving computerised boards. This model demonstrates that individuals with initial low levels of self-efficacy, matched with low levels of motivation, can be directed into allocating resources if enactive mastery experiences are positively affected through manipulation. Similarly, Beck and Schmidt (2012) suggest that the self-efficacy and resource allocation relationship is non-linear, and that individuals occupy a dynamic self-efficacy “location” at the

within-person level that is task-dependent. For example, an individual with initial low self-efficacy may take on the challenge of the task, allocating necessary resources to achieving a goal. If the individual believes they are making incremental progress they may choose to place even more resources into the task. As the individual begins to grow in task confidence, they may begin to feel that they no longer need to allocate as many resources to achievement, and thus withdraw further effort or time.

The Irish language context

In Ireland, the Irish language, along with English, is designated as one of two official languages in the Constitution. English is the dominant language in the State. Every 5 years, a Census of Population is carried out to gather information on all individuals and households in the State (CSO, 2020). The Irish language section of the Census is comprised of two questions – an omnibus question on whether you can speak Irish or not, and a follow-up question on frequency if you self-declare as being an Irish speaker. This provides the only official, population-wide metric for directing Irish language policy for the Government.

The Irish language is a compulsory, core school subject for all children in Ireland, with over 2,000 classroom hours over 14 years dedicated to the teaching of the language (Ó Laoire, 2007). The vast majority of adults in Ireland will have taken the terminal examination – the Leaving Certificate – usually at age 17 or 18 years. The Irish subject is offered at three levels: Foundation; Ordinary; and Higher, and includes a separate oral element worth 40% of the overall marks (State Examinations Commission, 2019). A pass grade in Irish still remains a prerequisite for attending one of the six National Universities of Ireland. Despite the number of classroom hours dedicated to teaching the language, the 2016 Census returns show that over 60% of adults aged 18-years and over claim to have no Irish speaking abilities (CSO, 2018). Studies into perceived second language loss have shown how learners tend to overestimate their inabilities in a second language that hasn't been used since leaving the school system (Bahrlick, 1984; Weltens, 1989). In the Irish language context, this concept of perceived

loss has been investigated to show that despite low ability perceptions, Irish language knowledge remains for a period of time outside the education system (Murtagh, 2007; Murtagh & van der Slik, 2004). However, these Irish language perception studies have been conducted in the context of recent school leavers, thus leaving a gap in research investigating adults' Irish language beliefs, which this study aims to address.

The present study

The present study aims to investigate the mediating effect of manipulated self-efficacy on performance and resource allocation in Irish adults on an Irish reading test. With previous performances representing the most authentic source of self-efficacy beliefs, it is anticipated that by manipulating these mastery experiences, the amount of resources allocated, as well as the subsequent performance itself, will be affected. As the current Irish Census language questions has remained unchanged since 1996, and for non-speakers of Irish is likely to be the only occasion for self-assessing language skills since finishing school (McCloskey, 2001), it merits investigating whether task performance aligns with more specific pre-test confidence ratings. Finally, with periods of non-use linked to under-estimations of Irish language ability (Murtagh, 2003, 2007; Murtagh & van der Slik, 2004), it is worth investigating the significance of age on Irish self-efficacy beliefs. To this end, the following research questions will be undertaken:

1. Do Irish language reading self-efficacy beliefs reflect performance and the time allocated to a test?
2. Does age have a mediating role in Irish language reading self-efficacy declarations?
3. Do manipulated self-efficacy beliefs impact on subsequent performance?
4. Do manipulated self-efficacy beliefs impact on resource allocation?

Method

Procedure

A combined questionnaire and test instrument, outlined below, were administered via an online survey platform, Qualtrics. This allowed participants to autonomously take part in the research in their own time. Following briefing information, participants were asked to indicate informed consent by ticking a box on the screen. Basic demographic information was elicited, followed by an eight-question self-efficacy scale. Participants were then administered ten multiple-choice questions aimed at testing Irish knowledge. Based on results, participants received either actual or false results, and were automatically assigned to control or intervention groups. This was followed by a final set of ten multiple-choice questions testing Irish knowledge. Once reaching the end of the survey, participants were informed of the manipulation and provided with their correct results, where applicable. The option to revoke consent was then provided.

Self-efficacy

To test participants' self-efficacy of Irish reading skills (SER) - the closest representation of skills required for the multiple-choice questions on the test (outlined below) – a reading skills self-efficacy sub-scale that was created and piloted in a previous unpublished study with 90 participants, was used. In the pilot study, SER achieved significantly high internal consistency scores ($\alpha=.96$). SER comprised of eight statements ranging from 'I am able to identify basic words in a simple text' to 'I am able to extract the relevant points from a number of complex sources' - and aimed to represent the different level of reading abilities. Statements were modelled on similar ability scales used for Irish surveys (Darmody & Daly, 2015) and French self-efficacy studies (Mills et al., 2007). Using Bandura's (2006) guidelines that statements should be based on confidence ratings, allowing for absolute zero, participants were provided with six Likert-scaled

response options in intervals of 20% ranging from ‘0% - no confidence’ to ‘100% - complete confidence.’

Irish test

A multiple-choice reading test, consisting of 20 declarative statements or sentences, each with three options – one of which formed the correct answer, was used. A combination of grammatical and vocabulary knowledge is required to correctly form the sentence. For example, ‘*Tá mé i Baile Átha Cliath/ mBaile Átha Cliath/ Bhaile Átha Cliath inniu*’ (I’m in Dublin today) requires an understanding of spelling changes brought about by preposition and eclipsis. The test was developed by Neachtain (2018) using a current corpus of Irish language to highlight the most common errors made by students and was designed to test new student teachers of Irish. It is based at an intermediate B1 level on the Common European Framework of Reference for languages (CEFR), a level that is loosely aligned between the upper-ability of the Ordinary and lower-end of the Higher-level Irish Leaving Certificate (Ní Mhaonaigh, 2013). Statements are modelled on typical phrase structures encountered in written texts in the school curriculum. The original test comprised of 25 multiple-choice statements. Following pilot testing for a general population, using random sampling of 104 participants, the test was analysed using item discrimination and difficulty indices. Five statements were removed for reasons such as too many participants getting an item correct, or an item not distinguishing between higher and lower language ability levels. The test was then divided into two sets of 10 multiple-choice statements (phase 1 and phase 2), with the distribution of difficulty appearing to be even across both phases based on the pilot testing.

Participants

A general call to anonymously participate via a web link to an online survey and test was issued across various social media platforms, with the survey instrument open for a one-week period. One of the main criteria was that participants had completed the Irish language Leaving

Certificate, thereby ensuring that participants had experienced the compulsory Irish language school cycle, as discussed above. Basic demographic information was taken for each participant. Informed consent was sought at the beginning of the survey and test. 681 participants began the survey and test, with 514 participants fully completing it. Following the phase 2 test, participants were informed of the manipulation procedure, and 3 participants took the opportunity to revoke their informed consent. During the analysis phase, it emerged that one of the Phase 1 questions had two potentially correct answers, based on whether the participant correctly identified the Munster or Ulster Irish language dialect option. The original test instrument had been based on testing participants with a Munster dialect education background. As Phase 1 results auto-triggered whether participants received either their actual or manipulated results, 55 participants were affected by this error and removed from the data set. A further 6 participants were removed due to unusual test times (those taking under 30 seconds or over 10 minutes to answer the first phase 10 MCQs) The final dataset comprised 450 participants (150 males, 298 females, 2 non-binary).

Manipulation procedure

In order to test the effects of self-efficacy on performance and resource allocation, a manipulation intervention was established involving false results and false comparative feedback. Performance was operationalised as the results from each phase, while resource allocation was operationalised as the time taken in seconds to complete each testing phase. Participants were not informed that the test was being timed. Based on phase 1 results, three groups were formed. Those that correctly answered either 3, 4 or 5 questions out of 10 were automatically assigned to the 'low' group (n=113). They were falsely informed that they received 7 out of 10 and a message stating this was above the level of other participants. Those that correctly answered either 6 or 7 questions out of 10 were provided the false score of 4 out of 10 and informed this was below the level of other participants –

forming the 'high' group (n=75). A control group (n=262), receiving actual results and no comparative feedback, comprised participants that got between 0 and 2, and between 8 and 10 questions correct out of 10. The reasoning was that those in the highest and lowest result brackets would likely have a more realistic indication of their level, while those in the middle range of results could potentially be more susceptible to manipulation. It is important to note that the control group only contained 12 participants that scored between 0 and 2 out of 10, thereby effectively comprising a vast majority of high performers. It was anticipated that the false comparative feedback and manipulated results would have an effect on phase 2 performance and resource allocation.

Data Analysis

All analyses were conducted with the statistical programme R (R Core Team, 2020). The afex package (Singmann, Bolker, Westfall, Aust, & Ben-Shachar, 2020) and the emmeans package (Lenth, 2020) were used to carry out the ANOVA tests, and follow-up testing. The base R package (R Core Team, 2020) and psych package (Revelle, 2020) were used for all other statistical analyses. A visual inspection of the Phase 1 and 2 results and time taken variables, and an inspection of skewness, revealed that the time taken data were not normally distributed. A transformation of the time taken data was performed to correct for distributional extremities. A follow-up check on the transformed data revealed a very small number of remaining outliers. As the manipulation effect is based on potentially significant changes between Phase 1 and 2, the identified outliers were checked on an individual case-wise basis to determine if extreme data were due to either the false feedback intervention or were consistent with an individual's time taken or results on both phases. As this appeared to be the case, the decision not to remove any further outliers was taken. The process is discussed further below.

Results

Self-efficacy, performance, and resource allocation

The reading self-efficacy scale (SER) was verified for internal consistency using Cronbach's alpha ($\alpha=.97$), demonstrating robust internal consistency. A composite percentage score was created for both SER by averaging the responses for each participant. To investigate the perceptions of Irish language reading ability and whether they align with performance and time allocation on phase 1, correlations were calculated for all participants. Pearson's correlation coefficient for SER and phase 1 results emerge as statistically significant and highly positive ($N=450$, $r=.69$, $p<.001$, 95% CI[0.63, 0.73]). Pearson's correlation coefficient for SER and time allocated in seconds emerged as negative, weak and statistically significant ($N=450$, $r=-.16$, $p>.001$, 95% CI[-0.25, -0.07]).

Self-efficacy and age category

Self-efficacy percentage means by age category were tested for significant differences. Four age categories were established: 18-29 years ($n=113$, $M=81$, $SD=20.13$); 30 to 39 years ($n=111$, $M=71.4$, $SD=24.5$); 40 to 49 years ($n=121$, $M=67.3$, $SD=26.4$); and 50+ years ($n=105$, $M=70.6$, $SD=18.1$). A one-way ANOVA was conducted with age category and SER as the respective independent and dependent variables. A significant difference emerged: $F(3,452)=9.10$, $p<0.001$, $\eta^2=0.06$. A post hoc comparison, using a Tukey test, revealed significant differences ($p<.05$) only for the 18-29 years grouping and each of the three other age categories. No other interaction was significant.

Manipulation effect

Performance

To test for the influence of the manipulation intervention on performance across the three groups, a mixed ANOVA was carried out. The intervention effect successfully influenced performance with a significant effect for Group: $F(2,447)=335.80$, $p<.001$, $\eta^2=.60$, and a

significant effect for Phase: $F(1,447)=60.37$, $p<.001$, $\eta^2=.12$. The interaction effect was also significant: $F(2,447)=37.32$, $p<.001$, $\eta^2=.14$. Pairwise comparisons demonstrated that performance differences from phase 1 to phase 2 were significant for all groups ($p<.001$) except the low group ($p>.05$).

Figure 1 below shows the boxplots for test results for each group between phase 1 (T1) and 2 (T2). The dot indicates the mean results for the groups. A visual inspection reveals how the mean result for the high group decreased following negative feedback and falsely lowered results. The low group, having received false inflated results and positive comparative feedback, shows an increase in mean results. The control group saw a decrease in performance in phase 2.

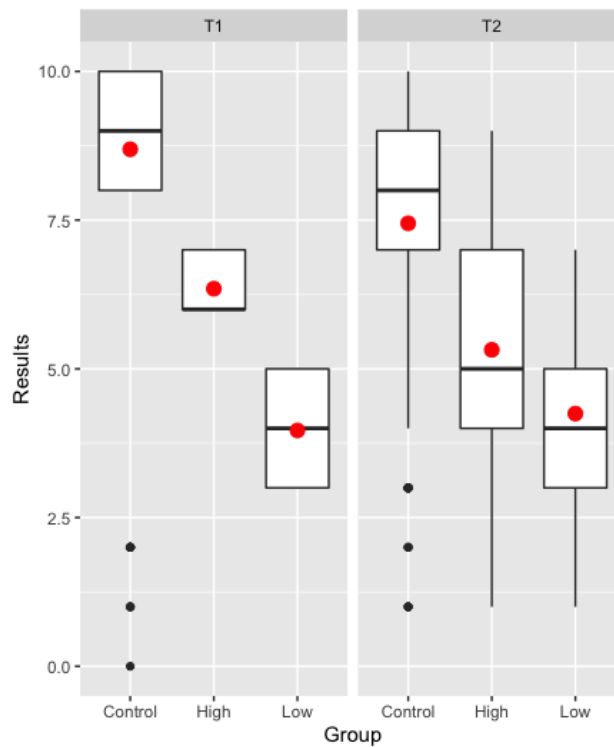


Figure 1 Boxplots for performance by group across both phases

Table 1 shows how average results for the high group that received the negative intervention decreased by over one mark from 6.35 to 5.32, while the low group – having received the positive intervention, improved from an average score of 3.96 on phase 1 to 4.25 post-manipulation. Interestingly, the control group, having received actual

results and no feedback, saw performance drop from 8.69 to 7.45, making the low group performance increase all the more impressive.

Table 1 Mean performance results for group performance results across both phases. SDs in parentheses.

	Phase 1	Phase 2
All participants (N=450)	7.11 (2.45)	6.29 (2.27)
High (n=75)	6.35 (0.48)	5.32 (1.68)
Low (n=113)	3.96 (0.76)	4.25 (1.55)
Control (n=262)	8.69 (1.75)	7.45 (1.91)

Resource allocation

As discussed, despite removing extreme outliers in the initial stages and achieving homogeneity of variance, the time data in seconds used to represent resource allocation did not achieve normality. Using boxplots for each group, and the tidyverse package in R for confirmation, almost 30 outliers were identified over both of the phases. This is due to the general non-normality of reaction time data (see Whelan, 2008), and the nature of unrestricted timing conditions in this study. Ratcliff's analysis of the statistical power of different methods for dealing with the effect of outliers suggests adopting an inverse transformation of the data where variability among subjects is low (Ratcliff, 1993). The R base package was used to carry out the inverse transformation of the data, achieving homogeneity of variance and covariance, as well as the assumption of sphericity. However, outliers still remained in the transformed data. As this study is based on manipulation of results to assess changes in performance and reaction time, potentially leading to increased time at the within subject level, the decision was taken not to remove any further data outliers due to the difficulty in distinguishing spurious from genuine data (Whelan, 2008). Any further attempts to fit the data to a model could potentially weaken the analysis.

To test for the influence of the manipulation intervention on resource allocation across the four groups, a mixed ANOVA was carried out on the inverse transformed time data. The intervention successfully affected the time allocated to each phase of the test with a significant effect for Group: $F(2,447) = 12.01, p < .001, \eta^2 = .05$. The effect on Phase was insignificant: $F(1,447) = 0.62, p > .05, \eta^2 = .001$. The interaction effect was also significant: $F(2,447) = 12.28, p < .001, \eta^2 = .05$. Pairwise comparisons demonstrated that time allocated differences between each phase were significant for all groups ($p < .01$) except the low intervention group ($p > .05$).

The boxplots in figure 2 below show the transformed time taken data for each of the groups on phase 1 (T1) and 2 (T2). Similar to performance, the manipulation effect influences the amount of time taken in phase 2.

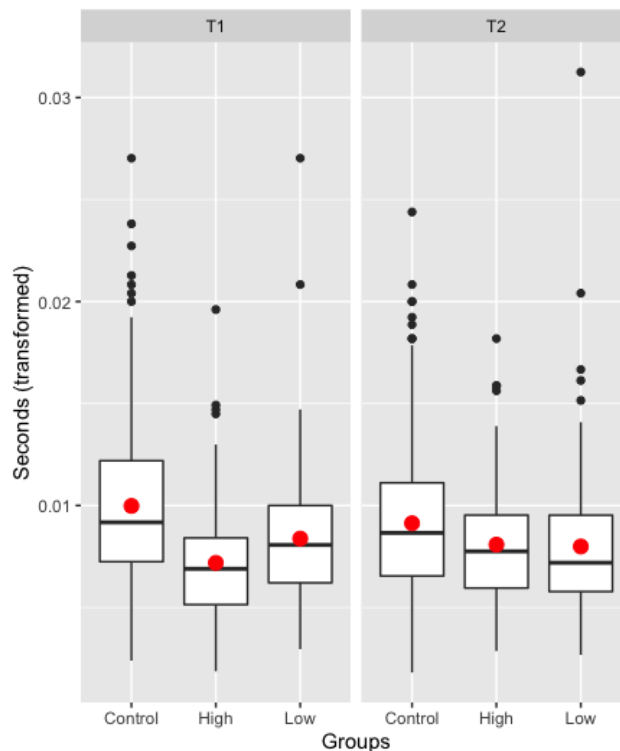


Figure 2 Boxplots for resource allocation by group across both phases

Table 2 below shows how average time in seconds taken varied between phases. The high intervention group, who received the negative intervention, withdrew their resource allocation by an average of 26 seconds. The low intervention group, following the positive

Phase	Mean		SD		Median		Range (min)		Range (max)	
	1	2	1	2	1	2	1	2	1	2
All participants (N=450)	132	138	65	67	118	125	37	32	534	551
High (n=75)	169	143	87	57	145	129	51	55	534	349
Low (n=113)	136	149	51	63	124	139	37	32	338	374
Control (n=262)	119	132	58	71	109	116	37	41	419	551

intervention, allocated more resources (13 seconds on average) to phase 2. The control group allocated an average of 13 seconds more to phase 2.

Table 2 *Descriptive statistics for time taken in seconds (resource allocation) across both phases*

Discussion

Before discussing the results of this study, it is important to consider some of the potential methodological limitations. The test instrument comprises only 20 questions related to syntactic and grammatical structures, and is likely to only provide a narrower representation of reading ability when compared to other more comprehensive proficiency tests. As this study was intended as a test for an intervention effect, thus relying on participants to continue to phase 2 with potentially altered self-efficacy, the number of questions needed to be short enough to ensure sustained engagement. Future testing instruments should include an item pool as wide as possible based on the specific linguistic skill being tested yet balanced enough as to not overburden participants. The use of social media as a recruitment tool

brings its own set of potential problems regarding representativeness. It is possible that only those interested in the Irish language would have taken part or shared the link to the survey among others with similar interests. Furthermore, Batterham (2014) found that, when compared with postal recruitment, social media recruitment tended to lead to an overrepresentation of female and younger participants. With twice the number of females to males in this study, this issue appears to be evident. One must also be cognisant of the low-stakes, unsupervised nature of the test environment, i.e., it is difficult to assume that none of the participants used a dictionary or online resource to answer questions, thus affecting the resource allocation data. It is recommended that any future L2 manipulation studies of this nature control for time, and consider a third testing phase after a period of time, in order to test for the longer-term effects of self-efficacy manipulations.

Self-efficacy beliefs

This study demonstrates that in line with previous research, self-efficacy is closely aligned with performance. By directly applying this finding to the Irish language context suggests that self-efficacy scales based on percentage confidence levels can provide a robust alternative to single omnibus questions which reduce language self-assessment to a binary categorisation of Irish speaker or non-speaker. Self-efficacy was not found to be a strong predictor of resource allocation. Theory suggests that a stronger negative correlation should have been found as high efficacious L2 users allocate more resources to overcoming challenging tasks, while low efficacious L2 learners tend to avoid these tasks (Bandura, 1997). However, studies conducted by Beck and Schmidt (2015), Vancouver and Kendall (2006) and Vancouver et al. (2008) show that this assumption is worthy of reconsideration. For example, low efficacious individuals may be adapting their behaviours to reach a particular level of performance, thus allocating more resources, or high efficacious individuals, due to overconfidence, may be withdrawing efforts. To fully understand the weak effect size,

cultural and sociolinguistic factors may also need to be considered in light of the passive but positive relationship towards the Irish language by those having experienced the compulsory Irish education cycle (Darmody & Daly, 2015). A fuller investigation of this type is beyond the scope of the current study.

For age categories, the 18-29 group represent the highest mean self-efficacy scores in reading and general self-efficacy across all age categories. As participants age range increases, self-efficacy beliefs decrease, until a slight increase in the 50+ category. This finding underlines language attrition research, which suggests that the longer a person is outside of the education system, their perceptions of their Irish language abilities begins to decrease (Murtagh, 2003).

Manipulation effect

The manipulation intervention proved significant, thus demonstrating the influence of previous performances and comparative feedback on subsequent performances, albeit over a relatively short time period. The effect of positive, comparative feedback and false, inflated results for the low group had a significant effect on both performance (an average increase of .29 marks) and resource allocation (an average increase of 13 seconds). The most striking of the findings is the change in performance and resource allocation in phase 2 for the control group. Results fell by over 1 out of 10 marks, but more resources were dedicated to phase 2 – an average increase of 13 seconds. This suggests that items on phase 2 testing were more difficult for this group (as noted above, 250 participants in this group were high performers, achieving between 8 and 10 marks out of 10 on phase 1), thereby making the improved performance of the low group all the more impressive. Furthermore, for the high group, the average drop in performance of almost 1 mark out of 10 and allocated resources (average decrease of 26 seconds) suggest a more pronounced effect for negative feedback and deflated results. While this study was limited to measuring pre-task self-efficacy and measuring the effect size of manipulation, further

performance factors such as goal orientation, as highlighted in Dahling and Ruppel (2016), should be considered in future intervention studies. It is difficult to determine the influence of social persuasion on participants in this study. Bandura (1997) suggests that social persuasion relies on the interaction of other sources of self-efficacy. If we consider that enactive mastery experience is the strongest source, and that comparative feedback against an abstract ‘others’ concept compared to a group of known peers may be interpreted differently, it is more likely that false results are the driving force in determining subsequent phase 2 performance. A future study should consider creating sub-sample groups within each intervention group whereby, for example, half the low group receive false comparative feedback while the other half receive no feedback.

Conclusion

This study represents a first attempt at applying social cognitive theory as a framework for analysing the effects of self-efficacy manipulation on Irish language beliefs. Self-efficacy has been proved to provide an accurate predictor of performance in participants, providing a strong argument for a robust, alternative metric for self-declarations of language abilities in populations. Although self-efficacy seeks to measure the potential performance, the lack of follow-up testing in this approach, may prove methodologically problematic. However, as the current approach is not without its problems (see Darmody & Daly, 2015; Murtagh, 2007), perhaps by providing citizens who have experienced compulsory Irish with the agency to self-declare their confidence on achieving varying language tasks, as opposed to a single declaration of speaking ability, could lead to a deeper engagement with the Irish language self-assessment process.

Furthermore, this study has demonstrated the widely accepted belief that self-efficacy interventions have a direct influence on performance and the resources individuals allocate to tasks (see Marquez et al., 2002; McAuley et al., 1999; Vancouver et al., 2002). This provides an opportunity for educators to consider efficacy-raising interventions

during the acquisition phase of Irish. For example, a previous study on Irish self-efficacy beliefs revealed that a lack of feedback during the acquisition phase has had a profound effect on reducing self-efficacy in Irish adults, leading to capable users of the language withdrawing from any communicative opportunities (Barry, 2020). By introducing regularised, appropriately aligned, formative feedback, or mastery modelling, it is likely that performance factors such as resources allocated, or goal orientations will become positive contributors to future enactive mastery experiences.

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Appendix 4: Irish Language Proficiency Test – initial item pool

Note: all correct answers in green-coloured font

Part 1: Grammar test MCQs

A1 level

1. Noun form

- a. Bhuail **an carr/ an gcarr/ an charr** an balla
- b. Bhí **an mbean/ an bhean/ an bean** ag ithe

2. Verb – past + temporal marker

- a. **Briseann/ Bhris/ Brisfidh** siad an fhuinneog inné
- b. **Chuala/ Cloisim/ Cloiseann** mé gach rud faoi aréir

3. Attributive adjective (plural noun)

- a. Tá múinteoirí **mhaith/ maithe/ maith** sa scoil sin.
- b. Cheannaigh sé dhá **mhadra mhóra/ madra mór/ mhadra móra** chun a theach a chosaint

4. Adjective (emotion) – noun association

- a. Tá ocras orm, ba bhreá liom **ceapaire/ uisce/ uaireadóir/ piliúr** a ithe
- b. Táim tuirseach, teastaíonn **codladh/ roinnt bia/ roinnt uisce/ cabhair** uaim.

5. Preposition – i & le

- a. Ní fhaca mé í leis na blianta. Sílim go bhfuil sí ina cónaí **sa Chorcaigh/ i gCorcaigh/ san gCorcaigh**
- b. Táim ag dul ar saoire **le/ leis na/ leis** cairde

6. Question form (A1)

- a. A: **Cén/ Céard/ Cad** aois é?
B: Tá sé 20 bliain d'aois
- b. A: **Cé/ Cathain/ Cén** chaoi a thosóidh sé sa gcoláiste?
B: Tar éis an tsamhraidh

7. Prepositional pronoun

- a. Chuaigh siad chuig an dochtúir agus fuair siad roinnt comhairle **uaithi / roimpi/ aici.**
- b. Chuala mé go bhfuil carr nua **ort/ duit/ agat.**

8. Copula

- a. Cheannaigh mé roinnt bróga daor nua. **Is bróga leathair iad/ Tá siad bróga leathair/ Is leathar iad.**
- b. A: Fáilte. Cad as duit? Cad a dhéanann tú?
B: Is as Gaillimh mé. **Múinteoiri is mise/ Is múinteoir mé/ Táim múinteoir.**

A2 level

9. Plural form

- a. Níl **na bróga/ na bhróg/ na bhróga** a cheannaigh mé oiriúnach.
- b. Is cuimhin liom **na áiteanna/ na áit/ na háiteanna** go léir ar thugamar cuairt orthu.

10. Genitive form of noun

a. Is maith liom blas **an ispín/ an t-ispín/ an hispín**

b. Bhí mé ag oscailt **na fuinneoige/ na bhfuinneoga/ na fhuinneog** nuair a bhí sé ag cur báistí

11. Verb – future regular

a. **D'éistfinn/ éistfidh mé/ éistim** léi nuair a thiocfaidh sí amárach

b. **Tugaim/ Thugainn/ Tabharfaidh mé** mo fhreagra duit maidin amárach

12. Conditional – ‘if’ construction

a. **Cheannaigh mé/ cheannóinn/ ceannaím** teach nua dá mbeadh an t-airgead agam.

b. Dá mbeadh an deis agam **dhéanfainn/ déanfaidh mé/ dhéanainn** é ar fad arís

13. Personal numbers and noun agreement



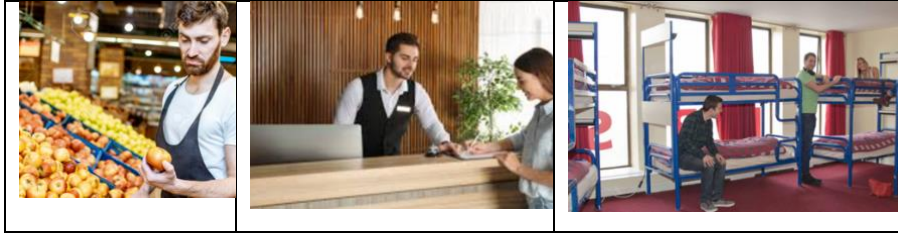
a. Tá **triúr/ trí/ tri** mná sa scuaine.

b. Tá léine bhuí ar an dara **bhean/ bean/ mbean**

14. Job context & permission context

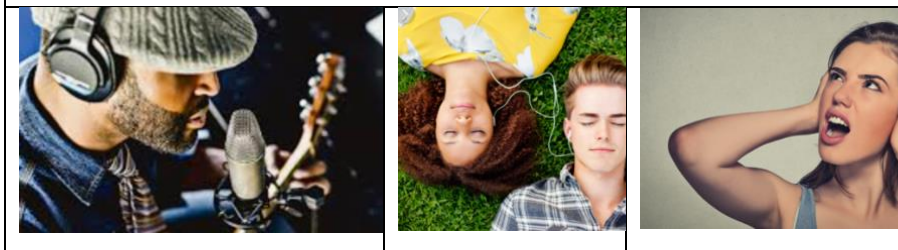
a.

Tá John ag obair in óstán an samhradh seo



b.

An dtig liom an ceol seo a chasadh síos rud beag?



15. Prepositions

- a. Tá súil agam nach bhfuil siad cailte. Thug mé na treoracha **a Seán/ go Sheán/ do Sheán**
- b. Tháinig sí anseo **roimh Micheál/ gan Micheál/ roimhh Micheál**

16. Comparative and superlative

- a. Tá an aimsir níos **dheas/ deise/ dheasa** sa Spáinn an t-am seo den bhliain
- b. Bhí mo mháthair níos **meas/ mheasa/ measa/** ná m'athair ag canadh **Rating**

17. Imperative

- a. **Téigh/ Chuaigh/ Téann tú** go dtí an seomra suí! Tá mo tholg nua tagtha

b. A pháistí, **d'iniseadh sibh/ d'inisfeadh sibh/inisigí** do bhur máthair cad a tharla inniu!

18. Word order

a. Nua/ tá/ sí/ dubh/ an/ uirthi/ cóta (**Tá cóta dubh nua uirthi**)

b. An/ dhubh/ máthair/ a/ ar/ fhada/ gruaig/ tá (**Tá gruaig fhada dhubh ar a máthair**)

B1 level

19. Verb – future irregular

a. **Rachaidh sé/ chuaigh sé/ téann sé** go dtí an banc amárach

b. **Feicim/ Feicfidh mé/ Chonaic mé** m'athair maidin amárach

20. Compound preposition (genitive noun)

a. Dhúisigh mé i lár **an hoíche/ na hoíche/ an oíche**

b. Tháinig sí i lár **an lá/ an lae/ an laethanta**

21. Comparative adjectives

a. Is é inniu an lá **té/ is teo/ níos teo** i mbliana

b. Seo an fheidhmíocht **is measa/ olc/ níos measa** ó Manchester Utd an séasúr seo

22. Stronger form of prepositional 'le'

a. An dóigh **duit/ ort/ leatsa féin** gur cheart go mbeadh srianta mar seo i gceist?

b. **Is maith liom/ Ba mhaith liom/ Ba mhaith liomsa** go mbeadh an jab is fearr ar domhan agat.

23. 'need' + pronoun

a. Beidh an aimsir iontach. Tá éadaí nua ag teastáil **ort/ uait/ tusa** an samhradh seo

b. A: 'An bhféadfainn cabhrú leat?'

B: 'Tá gúna ag teastáil **uaim/ agam/ ionam**'

24. 'If' + future

a. Má bhíonn an t-am agam, **tabharfaidh/ thugainn/ thug** mé cuairt ar mo mháthair

b. Céard a dhéanfaidh tú má **beidh/ bhí/ bhíonn** sí istigh?

25. Use the preposition 'ar' + aspiration

a. Ba ghnách liom staidéar a dhéanamh **Fraincis/ an Francis/ ar an Fhraincis** ar scoil

b. Ní ghlacfar ach le 15 duine **ar an gcúrsa/ ar chúrsa/ as na cúrsa** agus le cainteoirí líofa Gaeilge amháin

B2 level

26. Subjunctive

a. **Go n-éirí / go n-éiríonn / go éirigh** leat sa scrúdú

b. Fan go **thiocfadh/ thagadh/ dtaga** do dheartháir ar ais

27. Numbered noun forms

a. Which option is incorrect?

- **dhá bhliain**

- trí bliana
- sé mbliana

b. Which option is incorrect?

- aon cupán amháin
- **naoi gcupán**
- seacht chupán

28. Adverbs of direction (deixis)



a. A: ‘Cá bhfuil na páisti?’

B: ‘Tá siad **isteach sa/ istigh sa/ i** teach ag imirt’

b. A ‘Conas tá tú?’

B ‘Tá tuirse orm. Bhí mé ag péinteáil an tseomra **thíos/ anuas/ suas** staighre ar maidin’

29. Dependent v independent forms of verb

a. Aisteach go leor, **níor bhfaca/ ní fhaca/ ní chonaic** Niamh é ag teacht isteach.

b. Chuaigh sí síos an staighre nuair a **cloiseann/ chuala/ cloisim** sí ag teacht isteach é.

30. Prepositions

a. Oibrím an chuid is mó laethanta **tar éis/ idir/ roimh** naoi agus ceithre.

b. Labhróidh mé le Pól **mar/ roimh/ ar feadh** an deireadh seachtaine.

31. Genitive case change to noun

a. A: Tá sí ag obair sa chathair.

B: An siúlóid fhada é?

A: Bhuel, ní bhfuair sí ach teach i lár **an chathair/ na cathrach/ na chathair?**

b. A: An féidir leat an branda seo a fháil i do thír féin?

B: Ar ndóigh, tá sé ar fáil ar fud **an tír/na tíre/ na thír**

32. Place names & prepositions

a. Nuair a bhí mé **san/ in/ go** Eoraip, thaistil mé go leor.

b. Tá an pacáiste a d'ordaigh mé ag teacht **go/ sa/ ó** Mheiriceá.

33. Copula + bias

a. Ar bhlais tú bia Úna? Deir sí **gur cócaire ise/ gur cócaire í/ cócaire sí.**

b. Ba ghnách le Michael smaoineamh **gurbh é/ gur sé/ go seisean** an ceoltóir is fearr ar an mbaile é.

34. 'Living in'

a. Tá mé **ina chonáí/ i gconáí/ i mo chónaí** i mBaile Átha Cliath agus ag obair do Facebook.

b. Tá siad **i gconáí/ ina gcónaí/ sa chonáí** i gCiarraí na laethanta seo.

Part 2: Texts (Reading comprehension)

A1 text 1

Ó: Sharon1999@gmail.com

Dáta: Luan, 23 Lúnasa 2021

Go: Chiara_ob@hotmail.com

Ábhar: Nice = deas!

Haigh a Chiara,

Tá Aaron agus mé féin anseo ar ár laetha saoire anseo i Nice ar feadh seachtaine. Táimid ag fanacht in ostán beag i Villefranche-sur-Mer fiche míle nó mar sin ón gcathair. Tá radharc álainn againn ar an trá ónár seomra, cé nach bhfuil Aaron róshásta leis an ostán. Tá sé róbheag, dar leis, agus ní maith leis an bia ach oiread! Ní féidir Aaron a shásamh mar is eol duit! Tá an aimsir go haoibhinn ar fad agus téimid ag snámh gach lá. Ceapann Aaron go bhfuil sé róthe áfach. Tá bus ag dul isteach go lár chathair Nice agus tá sé i gceist againn dul ann amárach chun siopadóireacht a dhéanamh. Beimid ag teacht abhaile Dé Domhnaigh agus cuirfidh mé gloch ort Dé Luain nó Dé Máirt.

Le gach dea-ghuí,

Sharon

1. Tá Sharon agus Aaron ar a laetha saoire cois trá/farraige

True	False	Not said
------	-------	----------

2. Tá an t-ostán an-mhór

True	False	Not said
------	-------	----------

3. Níl Aaron sásta leis an aimsir the

True	False	Not said
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A1 text 2

Haigh a Bhríd,

Tá súil agam go bhfuil tú go maith. Táim anseo i gCobh go dtí an Aoine. Táim ag fanacht in ostán díreach os comhair na farraige. Tá an t-ostán an-daor ar fad! Céad fiche euro in aghaidh na hóiche agus tá fiche euro ar an mbricfeasta anuas air sin! Ní bheidh mórán airgid fágtha agam faoin Aoine, ach tá sé go maith sos a fháil ón obair ar deireadh. Tá Michelle ag teacht ó Bhaile Átha Cliath ar an mbus amárach chun bualadh liom. Táim ag súil go mór lena í a fheiceáil mar ní fhaca mé le fada an lá. Tá sé i gceist againn turas a thabhairt ar Inis Píc Déardaoin agus tá súil agam go mbeidh an aimsir go maith. Bhí sé ag stealladh báistí inné ach tá sé geallta tirim don Déardaoin.

Slán go fóill.

Áine

1. Tá an t-ostán ina bhfuil Áine an-daor

True	False	Not said
------	-------	----------

2. Tá Michelle ag fanacht san ostán céanna le hÁine

True	False	Not said
------	-------	----------

3. Tá Áine agus Michelle ag dul go Baile Átha Cliath

True	False	Not said
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A2 text 1

Bhlag

13 Meitheamh, 2020

Conas tá agaibh ? Seán Ó Mainnín anseo arís ag blagáil. An bhfuil sibh ag baint taitneamh as an aimsir álainn seo? Ó thosaigh paindéim Covid 19, bíim ag obair ón mbaile an t-am go léir, cosúil libh féin. Tá a fhios agaibh gur maith liom taisteal agus mar sin, is breá liom imeacht ag siúl sna sléibhte gach deireadh seachtaine ó thosaigh Covid. Níl aon rud níos fearr ná imeacht agus éalú ó strus agus ó bhrú na hoibre. De ghnáth, téim ag siúl ar shléibhte Chill Mhantáin uair ó chloig ón gcathair. Tá sé éasca imeacht. Níl ag teastáil uait ach cóta compordach, mála droma le haghaidh uisce agus do lóin agus péire maith bróg. B'fhéidir go bhfeicfidh mé ann sibh lá éigin!

1. Bíonn Seán ag obair sa bhaile

True	False	Not said
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2. Ní maith leis bheith ag siúl

True	False	Not said
------	-------	----------

3. Cuireann sé ceamara ina mhála agus é ag siúl sna sléibhte

True	False	Not said
------	-------	----------

A2 text 2



Bhlag: Turas lae iontach

Seán Ó Mainnín © 2021

Sa bhlag an tseachtain seo ba mhaith liom labhairt faoi thuras a thug mé ar Ghleann Dá Loch nó Glendalough i gCill Mhantáin Dé Domhnaigh seo caite. Bhí an aimsir scamallach agus bhí sé ag cur báistí ar an lá, ach níor chuir sé sin isteach orm. Tá Gleann Dá Loch suite timpeall daichead ciliméadar ó Bhaile Átha Cliath agus bíonn bus ag dul ó Bhaile Átha Cliath gach lá agus níl an turas rófhada in aon chor-timpeall uair a chloig agus fiche nóiméad. Tá an áit go hálainn. Tá locha, crainnte, coill agus cnoic ann. Tá an túr cruinn an-ard agus seasann sé amach sa ghleann. Tá an áit an-chiúin agus bíonn na héin ag canadh ann i gcónaí. B'fhéidir go bhfeicfidh mé ann sibh Domhnach éigin!
Seán Ó Mainnín

1. Bhí an aimsir go maith ag an deireadh seachtaine

True	False	Not said
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2. Siúlann Seán go dtí Gleann Dá Loch mar tá sé go hálainn ann

True	False	Not said
------	-------	----------

3. Ní maith leis bheith ag siúl

True	False	Not said
------	-------	----------

4. Tá a lán rudaí deasa le feiceáil i nGleann Dá Loch

True	False	Not said
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B1 text 1

ÁRASÁN AR CÍOS FADTÉARMACH
(9 mí go bliain)
Bóthar na Trá
Gaillimh

Tá árasán athchóirithe nua-aimseartha ar cíos in Ascaill na Fuinseoige, Bóthar na Trá ó thús mhí Mheán Fomhair ar aghaidh.

Áit chodlata do bheirt. Cistin le gach áis nua-aimseartha (cuisneoir, oigheann, miasniteoir agus micreathonn). Seomra suí faoi lántroscán le radharc ar an bhfarraige, Dhá sheomra leapa, seomra folctha. Wifi ar fáil.

Praghasanna: €450 in aghaidh na seachtaine. Éarlais le híoc.

1. De réir an fhógra seo :

Tá an t-árasán seo ar cíos go ceann bliaina	Níl an t-árasán ar cíos go fóill	Tá an t-árasán suite in aice le stad an bhus
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2. De réir an fhógra seo :

Tá spás do chúigear san árasán	Tá an t-árasán oiriúnach do bheirt	Níl an t-árasán athchóirithe
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3. De réir an fhógra seo :

Tá an t-árasán á dhíol ag Méabh	Níl áiseanna nua-aimseartha sa chistin	Tá an t-árasán suite os comhair na farraige
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B1 text 2

TEACH SAOIRE SA GHAELTACHT AR CÍOS

1-21 Meitheamh 2022 agus 1-21 Iúil 2022

An Muiríoch, Corca Dhuibhne, Co. Chiarraí

Teach feirme athchóirithe. Dhá stór. In aice na trá. Lóistín féinfhreastail.

Trí sheomra leapa thuas staighre. Áit chodlata do naonúr. Seomra suí, le radharc ar an trá, agus gach trocán ann; tolg, cathaoireacha uillinne. Dhá leithreas, seomra folchtha (cith agus folcadán) agus póirse. Páirc fhairsing ar chúl an tí a bheadh oiriúnach do pháistí.

Praghasanna ó €600 in aghaidh na seachtaine.

Deirí seachtaine ar fáil chomh maith níos déanaí sa bhliain

Déan teagmháil le Máirín ag 087-4532187

1. De réir an fhógra seo:

Tá spás do níos mó ná cuigear sa teach seo	Tá an teach suite i sráidbhaile	Níl an teach athchóirithe
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2. De réir an fhógra seo :

Cuirtear béilí ar fáil sa teach	Ní chuirtear béilí ar fáil	Níl an teach oiriúnach do pháistí
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3. De réir an fhógra seo :

Tá troscán sa phóirse	Teach feirme ab ea an teach seo uair amháin	Tá an teach suite os comhair páirce
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B2 text 1



Is beag duine ar na saolta seo nach bhfuil cuntas bainc aige nó aici. Má tá airgead agat nó más mian leat airgead a thuilleamh, caithfear cuntas bainc a bheith agat. Mar sin féin, níl aon bhanc ann a fhreastalaíonn ar dhaoine le Gaeilge. Is ar mhaithe le hairgead amháin atá na bainc ann. Níl dúil acu sa Ghaeilge, níl dúil acu ach in airgead daoine le Gaeilge.

Drochthaithí

Dála go leor daoine eile, tá drochthaithí agam leis na bainc ó thaobh na Gaeilge de. Siar in 2006 d'oibrigh mé le Banc Uladh. Agus mé ag obair ann, iarradh orm na roghanna ar scáileáin a gcuid ríomhairí airgid a aistriú go Gaeilge. Rinne mé go fonnmhar é gan íocaíocht a lorg don obair. Gealladh dom go gcuirfí an rogha Ghaeilge i bhfeidhm ar na ríomhaire i lár na bliana 2007. Níor tharla sé riamh. Bhí orm litir i ndiaidh litreach a sheoladh chuig Banc Uladh ag fiosrú cathain a chuirfí an rogha Ghaeilge ar fáil. Thóg sé na blianta orthu mé a fhreagairt fiú.

Source: <https://nos.ie/gnionmhaiochas/banc-gaelach-anois-an-t-am/>

1. De réir údair an ailt seo :

Tugann na bainc a lán tacaíochta don Ghaeilge	Déanann na bainc iarracht an Ghaeilge a chur chun cinn	Ní thugann na bainc mórán tacaíochta don Ghaeilge
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2. De réir údair an ailt seo :

Thuill sé airgead as aistriúchán go Gaeilge a dhéanamh don bhanc	Rinne sé an obair aistriúcháin saor in aisce don bhanc	Bhí cuntas faoi leith as Gaeilge aige le Banc Uladh
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3. De réir údair an ailt seo :

Scríobh sé litir ag moladh an bhainc as an nGaeilge a chur chun cinn	Scríobh sé litir ag fiosrú cur chun cinn na Gaeilge sa bhanc	Níor fhreagair Banc Uladh an litir a chuir sé chucu
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B2 text 2



Is cóipeagarthóir é Benjamin Dreyer leis an bhfoilsitheoir Meiriceánach *Random House*. Is faoi Dreyer atá sé snas a chur ar phíosa scríbhneoireachta sula bhfoilsítear é. Bíonn go leor oibre le déanamh ag Dreyer chun slacht a chur air.

Cé na hearráidí is mó is gá dó a cheartú agus é i mbun cóipeagarthóireachta? Sin is ábhar dá leabhar *Dreyer's English*, leabhar ina dtarraingíonn sé ar a thaithí fhada mar chóipeagarthóir. Déanann Dreyer cuid mhaith plé ar lombothúin ghramadaí agus litrithe – liostaíonn sé na focail is coitianta a chastar air agus iad mílitrithe. Mar shampla, is minic a mhílitrithear 'accommodate' agus 'accommodation'. Cad ina thaobh? "Focail ina bhfuil dhá 'c', cothaíonn siad deacrachtaí," a deir Dreyer, "focail ina bhfuil dhá 'c' agus dhá 'm', cothaíonn siad tubaistí."

Focal eile a mhílitrithear go minic is ea 'leprechaun'. "Níl cuma mórán níos ciallmhaire air agus é litrithe i gceart ná mar atá air agus é mílitrithe, ach sin mar atá," a deir Dreyer.

Source: <https://nos.ie/cultur/leabhair/is-rialacha-breagacha-gan-bhunus-iad-cuid-de-na-rialacha-gramadai/>

1. De réir údair an ailt seo :

Tá obair dheacair ar siúl aige mar chóipeagarthóir	Bíonn air giotáí scríbhneoireachta as Béarla a léamh	Ní bhíonn gá aige le píosa scríbhneoireachta a léamh go cúramach
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2. De réir údair an ailt seo :

Ní dhéantar mórán botún i scríobh an Bhéarla	Bíonn air botúin Bhéarla a cheartú	Ní bhíonn deacrachtaí ar bith ag scríbhneoirí Bhéarla
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3. De réir údair an ailt seo :

Scríobh sé leabhair faoi na botúin litrithe is coitianta a dhéantar sa Bhéarla	Ní bhacann sé le botúin áirithe a cheartú mar shampla “accommodate”	Is breá leis bheith ag ceartú bhotúin litrithe
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Part 2: Texts (Listening comprehension)

A1/A2 TEXT 1

Text-type: Voice message on phone/ Recorded message on WhatsApp.

Theme: Invitation to a birthday party

Haigh a Úna,

Nessa anseo. Tá súil agam go bhfuil tú go maith. Tá brón orm gur mhiseáil mé do ghlaoch tráthnóna inné- níl a fhios agam cad a bhí ar siúl agam nuair a ghlaoigh Atu ,...ach.. is dócha go raibh mé amuigh sa gháirdín agus níor chuala mé an fón ag bualadh.

Pé scéal é, táim ag glaoch thar n-ais ort anois. An bhfuil aon nuacht agam? Bhuel, tá Martha ar ais ar an ollscoil i nGaillimh ó inné. Tá a fhios agat go mbeidh Pól ag obair ón mbaile go dtí deireadh mhí Dheireadh Fómhair ach tá sé imithe isteach i nGaillimh inniu mar tá cruinniú éigin aige sa lárofig ann.

Cogar... táim ag eagrú chóisir breithlae do Karen, Dé Domhnaigh-beidh sí deich mbliana d'aois. Tá sí ag súil go mór leis, mar, leis an bpaindéim anuraidh, ní raibh aon chóisir aici- an créatúirín!

B'fhéidir gur mhaith le Saoirse teacht. Beidh an chóisir ag tosú ar a trí a chlog agus beidh míle fáilte roimpi. Beidh sé ag críochnú ag a sé. Glaoigh thar n-ais orm nuair a gheobhaidh tú an deis. Is féidir glaoch ar an líne thalún muna bhfaigheann tú freagra uaim ar an bhfón póca seo. Seo an uimhir 091-9203347 (náid, naoi a haon, a naoi, a dó, a náid, a trí, a trí, a ceathair, a seacht). Beimid ag caint a Úna, Slán go fóill.

1. Sa phíosa seo fágann Nessa teachtaireacht ar fhón póca Úna (global)

True	False	Not said
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2. Bhí Nessa amuigh ag siúl nuair a ghlaoigh Úna tráthnóna inné

True	False	Not said
------	-------	----------

3. Tá Martha ag déanamh Ceimice san ollscoil i nGaillimh

True	False	Not said
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4. Tá Pól ag obair ón mbaile

True	False	Not said
------	-------	----------

5. Beidh Karen aon bhliain déag d'aois Dé Sathairn

True	False	Not said
------	-------	----------

6. Tugann Nessa cuireadh do Shaoirse teacht go dtí an chóisir breithlae (global)

True	False	Not said
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7. Beidh an chóisir ag tosú ag a sé a chlog

True	False	Not said
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8. What is Nessa's landline number?

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A1/A2 TEXT 2

Text-type: Podcast

Theme: Describing a staycation.

Haigh a chairde! Marc Ó Floinn anseo arís le podchraoladh na seachtaine seo. Tá súil agam go bhfuil sibh go léir ag baint taitneamh as an aimsir álainn seo.

Bhí mé ag insint daoibh inár bpodchraoladh an tseachtain seo caite go raibh mé ag dul ar laetha saoire ar feadh ceithre lá le hEimear agus le Cormac Óg.

Bhuel, bhí staycation nó saoire ceithre lá iontacha ag baile againn an tseachtain seo caite. Chuamar go Dún Garbhán i gCo Phort Láirge. Bhí AirBnB againn díreach ar imeall an bhaile agus bhí sé go han-mhaith ar fad. Bhí gach áis ann agus bhí Eimear an-tógtha leis an troscán agus leis an ndath péinte ar na ballaí go léir. Gach balla bán! Bhraith sí láithreach go raibh sí sa bhaile.

Bhí cúlgháirdín an-deas agus an-phríobháideach ar chúl an tí, agus is ann a bhí an bricfeasta againn gach maidin mar bhí an aimsir go haoibhinn te. Thaitin an tsaoirse le Cormac Óg! Bhí rothair ar cíos againn ón siopa rothar thíos ar an gcé agus chuamar ag rothaíocht gach lá. Tá féarbhealach álainn acu thart ar Dhún Garbhán agus tá sé an-oiriúnach don rothaíocht.

Lá eile ansin, thiomáineamar amach go dtí An Rinn- tá Gaeltacht ansin tá a fhios agaibh, agus chuamar chomh fada le Ceann Helvic. B'shin an tsaoire ceithre lá dár chaitheamar riamh! Tuilleadh faoina laetha saoire seo inár bpodchraoladh an tseachtain seo chugainn. Go dtí sin slán.

1. Sa phíosá seo, tá Marc Ó Floinn ag caint faoi laetha saoire a bhí aige (global)

True	False	Not said
------	-------	----------

2. Chuaigh clann Mhairc go Corcaigh

True	False	Not said
------	-------	----------

3. D'fhan siad in ostán i nDún Garbhán

True	False	Not said
------	-------	----------

4. Chuaigh siad ag rothaíocht thart ar Dhún Garbhán

True	False	Not said
------	-------	----------

5. Bhí siad ag iascaireacht i gCeann Helvic

True	False	Not said
------	-------	----------

6. Bhí saoire an-mhaith ag clann Mhairc i nDún Garbhán (global)

True	False	Not said
------	-------	----------

7. Thug siad cuairt ar an nGaeltacht

True	False	Not said
------	-------	----------

8. D'ith siad an bricfeasta sa chúlgháirdín mar bhí an aimsir te

True	False	Not said
------	-------	----------

9. How many days did they stay in Dungarvan?

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B1/B2 TEXT 1

Text-type: News report (TV or Radio)

Theme: Language classes on Zoom

(Newsreader) Agus ar deireadh...tá scéal suimiúil againn daoibh. Seo ár dtuairisceoir, Caoimhe Ní Chonghaile:

(Reporter) “Tá múinteoir aitheanta Manainnise in Oileán Mhanann, James Harrison, ag tabhairt ranganna Manainnise ar an aip Zoom ó cuireadh a chuid ranganna cearta ar ceal níos luaithe an mhí seo.

Chinn James, a bhfuil leabhair d’fhoghlaimoirí scríofa aige, a ranganna a aistriú ón seomra ranga go dtí an t-ardán Zoom le go mbeadh a chuid scoláirí in ann leanacht ar aghaidh ag foghlaim na teanga Gaelaí.

Beidh meánrang, atá ar siúl le thart ar bhliain anuas, ar siúl ar an Luan ag 18.15 (ceathrú tar éis a sé). Táthar ag foghlaim cén chaoi labhairt faoin todhchaí agus faoi dhátaí sa rang sin. Beidh ardrang ar siúl Déardaoin ag 18.15 (ceathrú tar éis a sé), rang atá ar siúl le dhá bhliain anuas, agus táthar ag breathnú ar an modh coinníollach sa rang sin. Ar deireadh, tá bunrang le bheith ann Dé Sathairn, rang atá ar siúl le trí mhí anuas i Manainn agus ina bhfuiltear ag foghlaim rudaí bunúsacha.

Cé go bhfuil an Ghaeilge agus an Mhanainnis an-chosúil lena chéile, is dóigh gur fearr tosú sa mbunrang agus eolas a fháil ar bhunrialacha na Manainnise atá an-éagsúil in áiteanna le rialacha na Gaeilge.

Tá dhá leabhar scríofa ag James, in éineacht le Adrian Cain, le tamall de bhlianta anuas — *Manx Words* agus *Manx Phrases*, agus tá go leor oibre déanta aige ar son a theanga i Manainn”

(Newsreader) Caoimhe Ní Chonghaile ansin

“Sin agaibh de scéalta an nuachta daoibh um thráthnóna. Go raibh maith agaibh as bheith linn.”

1. De réir na tuairisce seo : (global)

Is múinteoir Gaeilge é James	Tá James ag múineadh in ollscoil	Tá James ag múineadh ar líne
------------------------------	----------------------------------	------------------------------

2. De réir na tuairisce seo

Bíonn an meánrang ar siúl Dé Luain	Bíonn an meánrang ar siúl Déardaoin	Bíonn an meánrang ar siúl Dé Máirt
------------------------------------	-------------------------------------	------------------------------------

3. De réir na tuairisce seo :

San ardrang beidh James ag caint faoin modh coinníollach	San ardrang beidh James ag múineadh faoi dhátaí	San ardrang beidh James ag caint faoin todcháí
--	---	--

4. De réir na tuairisce:

Tá an Mhanainnis agus an Ghaeilge difriúil óna chéile	Tá an Mhanainnis agus an Ghaeilge cosúil le chéile	Tá gramadach na Gaeilge agus na Manainnise deacair
---	--	--

B1/B2 TEXT 2

Text-type: Announcement on TV of an upcoming programme on TG4 / News report

Theme: Travel programme on TG4

“Cuirfear tús an Déardaoin bheag seo le sraith nua teilifíse ina dtabharfaidh Hector Ó Heochagáin faoi thuras ar fud na hÉireann ag casadh leis na daoine éagsúla iontacha atá tagtha ó thíortha thar lear le cur fúthu anseo in Éirinn.

Sa chéad eagrán de *Éire Nua* tosaíonn Hector a thuras ag bruacha na hAbhann Duibhe ina bhaile féin, an Uaimh, áit a mbuaileann sé le láithreoir raidió Nigéarach, Yemi Adenuga, atá anois ina chomhairleoir áitiúil do Chontae na Mí.

Tá aithne ag gach duine ar Hector Ó Heochagáin ó thosaigh sé mar láithreoir ar an teilifís roinnt mhaith blianta ó shin. Tá an domhan mór siúlta ag an láithreoir clúiteach seo le fiche bliain anuas idir mhór-roinn na hAfraice agus mhór-roinn Mheiriceá araon ag déanamh cláracha difriúla teilifíse do TG4 agus do RTÉ.

Seo an chéad bhliain nach raibh sé ag taisteal thar sáile mar iriseoir mar chuir srianta taistil na paindéime isteach ar phleananna TG4 tuilleadh cláracha taistil a dhéanamh. Ag tús an chéad chláir sa tsraith seo mhínigh sé gur thapaigh sé an deis seo fanacht sa mbaile chun aithne níos fearr a chur ar a thír féin agus chun breis a fhoghlaim faoi na daoine iontacha atá tar éis lonnú sa tír seo le níos mó ná fiche bliain anuas. Craolfar *Hector: Éire Nua* ag 21:30 (leathuair tar éis a naoi) ar TG4 ar an Déardaoin. Mar sin, bígí ag féachaint ar an tsraith nua shuimiúil de chláracha seo.”

1. De réir an fhógra seo: (global)

Beidh Hector ag taisteal thar saíle	Beidh clár nua ag Hector ar TG4 X	Beidh Hector ag dul go dtí an Afraic
-------------------------------------	-----------------------------------	--------------------------------------

2. De réir an fhógra seo:

Sa chéad chlár beidh sé ag dul ar ais go dtí a áit dhúchais X	Sa chéad chlár beidh sé ag dul go dtí an t-aerfort	Sa chéad chlár beidh sé ag taisteal go Baile Átha Cliath
---	--	--

3. De réir an fhógra seo:

Tá a lán taistil déanta ag Hector le fiche bliain anuas X	Is maith le Hector taisteal	Bíonn Hector ag taisteal ar fud an domhain
---	-----------------------------	--

4. De réir an fhógra seo:

Ba mhaith le Hector taisteal thar lear	Ba mhaith le Hector taisteal thar lear agus labhairt le daoine	Ní raibh Hector ábalta taisteal thar lear de bharr shrianta Covid-19 X
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Appendix 5: Self-efficacy scale

Self-efficacy in Irish grammar (titles of each scale hidden from participants)

You will be presented with a number of Irish sentences using everyday words and grammar.

How confident are you in your ability in Irish to be able to correctly identify:

1. the plural of a noun (e.g. **na** fuinneoga, **na** cailíní/ the windows, the girls)
2. A sentence that takes place in the future (e.g. **rachaidh** mé inniu/ I **will** go today)
3. the appropriate form of place names (e.g. ‘**i m**Baile Átha Cliath)
4. how to give an order or an instruction (e.g. ná bí ag caint!/ don't be talking!)
5. the correct form of a noun (e.g. **an** teach, **an fhuinneog**)
6. how a question is formed in Irish (e.g. cá bhfuil tú i do chónaí?/ where do you live?)
7. the correct option for comparing things (e.g. tá an carr **níos deise** ná mise/ The car is **nicer** than mine)
8. the correct link words/ prepositions in a sentence (e.g. Beidh mé abhaile **tar éis** duit **mar** tá mé ag obair **ó** mheán lae / I'll be home **after** you **because** I'm working **from** midday)

9. the correct 'if + future' sentence (e.g. **Má** bhíonn an bus déanach **beidh mé** i dtrioblóid/ **If** the bus is late **I will be** in trouble)
10. the correct way to say a person needs something (e.g. **Teastaíonn** leabhair nua scoile **uaithe**/ **She needs** new school books)

Reading self-efficacy scale

How confident are you that you can perform each of the Irish reading skills below?

1. Read and understand the *main ideas* of a short email about a holiday in Irish
2. Read and understand the *main ideas* of a short text message to a friend in Irish
3. Read and understand the *main ideas* of a short passage on local travel in Irish
4. Read and understand the *main ideas* of a short personal account on hobbies in Irish
5. Read and understand the *details* of a newspaper advertisement for accommodation in Irish
6. Read and understand the *details* of a brief film review in Irish
7. Read and understand the *details* of a short news article about a person and their work in Irish

Listening self-efficacy scale

How confident are you that you can perform each of the Irish listening skills below?

1. Listen to and understand the *main ideas* of a casual phone message to a friend in Irish
2. Listen to and understand the *main ideas* of a short podcast on holidays in Irish
3. Listen to and understand the *details* of a person talking about their family in Irish
4. Listen to and correctly identify a phone number left on a voicemail in Irish
5. Listen to and understand the *details* a person gives about holiday activities in Irish
6. Listen to and understand the *main ideas* of a short news report in Irish
7. Listen to and understand the *details* of a person talking about language classes in Irish
8. Listen to and understand the *main ideas* of a short advertisement for a new TV programme in Irish
9. Listen to and understand the *details* about a person's life (e.g. countries they have visited) in Irish

Appendix 6: Attitudinal Statements

All opinion statements measured on a 5-point Likert scale (Strongly agree, Agree, No opinion, Disagree, Strongly disagree)

1. I feel that I have 'lost' all the Irish that I learned in school
2. I feel that I can recall most of the Irish that I learned in school
3. If a tourist asked if I could speak Irish, I would say 'yes'
4. I feel that if I did a short refresher Irish course I would remember a lot of what I learned in school
5. I was satisfied with my Irish speaking abilities in school
6. The results in my Leaving Certificate, or equivalent, were a good representation of my overall Irish abilities
7. There was an Irish language teacher in school that inspired me to improve my Irish abilities
8. There were students in my class with a level of Irish that impressed me
9. I received constructive or helpful feedback on my Irish abilities in school
10. I felt anxious before taking an Irish test in school
11. I enjoyed learning Irish in school

If you performed **better than expected** in an Irish exam in school, this was due to:

12. Your natural abilities in Irish
13. The effort you put into preparing for the exam
14. Good luck – the right questions came up
15. The questions on the test weren't too difficult

If you performed **worse than expected** in an Irish test in school, this was due to:

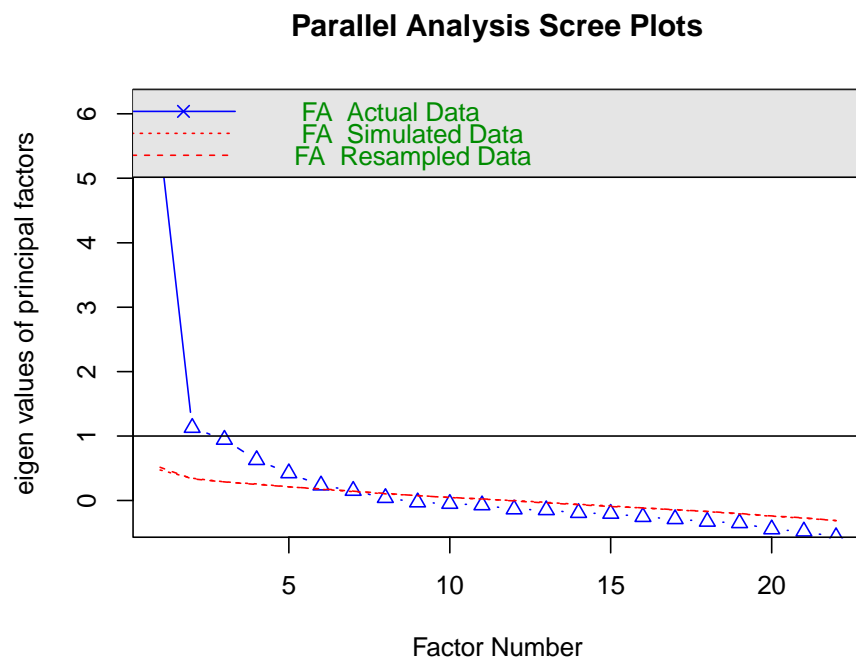
16. A general lack of abilities in Irish
17. Not putting in enough effort into preparing for the exam

18. Bad luck – the right questions didn't come up
19. The questions on the test were too difficult

The Irish Census of Population question on Irish language ability is based on speaking ability only. Please state your opinion on the following statements:

20. A national census question on Irish language abilities should ask people to declare their abilities in the other skills (reading, writing, listening)
21. A national census question on Irish language abilities should ask people to declare the level of ability. For example, 'I can express opinions in Irish', 'I can use basic phrases', 'I can speak fluently', etc.
22. When I am asked a question on my Irish language abilities I can give an answer instantly without having to think about it

Appendix 7: Scree plot from EFA of 19 questionnaire items



Appendix 8: Exploratory Factor Analysis results

Three factor model using oblimin rotation, minres extraction, and 0.3 loadings cut-off, produced in R Studio

	MR1	MR2	MR3
Lost		-0.848	
Recall		0.808	
Tourist		0.760	
Refresher		0.344	
Satisfiedinschool	0.606		
LCrepresent	0.547		
Teacher	0.788		
Students	0.506		
Feedback	0.839		
Anxious		-0.371	
Enjoy	0.612		
Performwellabilities	0.306		
Performwelleffort	0.357		
Performwellgoodluck			0.628
Performedwellquestions			0.424
Performedbadabilities		-0.358	
Performedbadeffort			0.309
Performedbadgoodluck			0.650
Performedbadquestions			0.548
CensusRWL			
CensusSE			
Censusanswerquick		0.424	
	MR1	MR2	MR3
SS loadings	2.998	2.787	1.686
Proportion Var	0.136	0.127	0.077
Cumulative Var	0.136	0.263	0.340

Appendix 9: Final instrument

Note: formatting and presentation from original Qualtrics export.

Start of Block: Participant info

Participant information

Abilities and beliefs: A pilot Irish language test and survey

What is involved for the participant?

This is the final part of a PhD study on Irish language abilities and beliefs in our Irish language abilities. You are about to participate in a pilot of the final version of the test and survey. Participation is completely anonymous and confidential. You will not even be identifiable to the researcher.

You will be presented with a **short Irish test** and a set of **questions asking about your confidence** in your Irish language abilities. The test will assess your reading, listening and grammar abilities, and will provide you with a final score, indicating a rough estimation of your current Irish abilities. You will not be tested on speaking or writing abilities. Each question on the test provides 3 answer options, from which you must choose the answer you think is correct. In order to complete the listening questions, you must be able to play and hear the recordings on your device. Click on the test tone below to ensure that you can hear audio.

The test is divided in 2 parts – 20 multiple choice questions per part covering a range of difficulties. You will be provided your score after each part, and asked a number of questions in between. You will also be asked to rate your confidence on your abilities on 2 occasions. The aim is to investigate if your performance in each part is consistent after receiving results.

The whole test/survey should take **around 15-25 minutes to complete**. You will be provided with scores at the end of each phase. **Your level of Irish does not matter**. The only requirement is that you took Irish as a subject at any level in your final exams before finishing school. You do not have to have used the language since finishing school. Instructions throughout are provided in Irish and English.

You cannot close the survey and continue at a later time. You must take the test and survey in one sitting.

Who is undertaking this study?

The researcher is Shane Barry, a PhD student in Applied Linguistics in the Mary Immaculate College (MIC), under the supervision of Prof. Muiris Ó Laoire (MTU), Dr Joan O'Sullivan (MIC), and Dr John Perry (UL).

What are the benefits of the research?

There is very little research that looks at Irish language beliefs and aims to compare those beliefs with an actual test. The researcher will share findings with stakeholders through presenting at national and international conferences and will aim to publish findings in an international peer-reviewed journal.

Right to withdraw

Your participation in this project is entirely voluntary. If you do not wish to take part, you are not obliged to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage. You will be required to give your consent for this study. Your anonymity is assured, and all data will be anonymised.

How will confidentiality be kept?

All data collected in this study will remain confidential and will not be released to any third party. All data will be stored on an encrypted computer drive that is only accessible to the researcher.

What will happen to the data after the research is completed?

In accordance with the MIC Record Retention Schedule all research data will be stored for the duration of the project plus three years. In accordance with MIC Data Retention Policy, anonymised data may be retained indefinitely as required by the researcher.

Contact details

If at any time you have any queries/issues with regard to this study, my contact details are as follows:

Shane Barry

shane.barry@mic.ul.ie

End of Block: Participant info

Start of Block: Consent

Abilities and beliefs: An Irish language test and survey

Dear Participant,

Please read the following statements before confirming your consent to take part.

I have read and understood the participant information sheet.

I have taken Irish as a subject in the Leaving Certificate, or equivalent

I acknowledge that I am at least 18 years of age.

I understand the nature of the questionnaire and what the information will be used for.

I am fully aware of all of the procedures involving myself.

I know that my participation is voluntary and that I can withdraw from the project at any stage without giving any reason.

I am aware that any comments I provide will be kept confidential and anonymised.

Do you consent to participating in this pilot?

Yes (1)

No (2)

Skip To: End of Survey If Abilities and beliefs: An Irish language test and survey Dear Participant, Please read the foll... = No

End of Block: Consent

Start of Block: Demographics

Please indicate your age category

- 18-29 years (1)
 - 30-39 years (2)
 - 40-49 years (3)
 - 50-64 years (4)
 - 65 years or over (5)
-

Please indicate your gender

- Male (1)
- Female (2)
- Other (please specify) (3) _____



What was the highest public examination that you took in Irish? Please choose one option?

- The Leaving Certificate or equivalent (1)
 - A level/AS/A2 (2)
 - University, college or third-level education **full degree** in Irish (3)
 - University, college or third-level education **subject only** in Irish (4)
 - Teacher training college (5)
 - A part-time course with a certificate (e.g. for work or a TEG course) (6)
 - Cannot recall (7)
 - Other (please specify) (8) _____
-

How do you answer the Census question **'Can you speak Irish?'**

Yes (1)

No (2)

How often do you speak Irish?

Daily, within the education system (1)

Daily, outside the education system (2)

Weekly (3)

Less often (4)

Never (5)

How well do you speak Irish?

Very well (1)

Well (2)

Not well (3)

How confident are you in your overall Irish skills (reading, writing, speaking & listening)?

- No confidence (1)
 - Little confidence (2)
 - Slightly confident (3)
 - Somewhat confident (4)
 - Fairly confident (5)
 - Complete confidence (6)
-

Roughly, when was the last time that you studied Irish?

- Less than 5 years (1)
- 5 - 9 years (2)
- 10 - 14 years (3)
- 15 - 19 years (4)
- 20 - 24 years (5)
- 25 - 29 years (6)
- 30 years + (7)

End of Block: Demographics

Start of Block: SE Grammar

Confidence in recognising the correct sentence

You will be presented with a number of Irish sentences using everyday words and grammar. From the three options you will be asked to choose which sentence that you think is the most appropriate.

How confident are you in your ability in Irish to be able to correctly identify the following:

	(no confidence) 0% (1)	(little confidence) 20% (2)	(slightly confident) 40% (3)	(somewhat confident) 60% (4)	(fairly confident) 80% (5)	(complete confidence) 100% (6)
The plural of a noun (e.g. na fuinneoga, na cailíní/ the windows, the girls) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A sentence that takes place in the future (e.g. rachaidh mé inniu/ I will go today) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How to give an order or an instruction (e.g. ná bí ag caint!/ don't be talking!) (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The correct option for comparing things (e.g. Tá an carr níos deise ná mo charr / The car is nicer than mine) (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The correct 'if + future' sentence (e.g. **Má** bhíonn an bus déanach **beidh mé** i dtrioblóid/ **If** the bus is late **I will be** in trouble) (9)

The correct way to say a person needs something (e.g. **Teastaíonn** leabhair nua scoile **uaithe**/ **She needs** new school books) (10)

End of Block: SE Grammar

Start of Block: SE Reading

Confidence in Irish reading abilities

You will be presented with a number of very short texts in Irish to read and answer questions on. Each question has three answer options. You will be asked to choose which sentence that you think is the most appropriate answer to the question.

JS

How confident are you that you can perform each of the following Irish reading skills:

	(no confidence) 0% (1)	(little confidence) 20% (2)	(slightly confident) 40% (3)	(somewhat confident) 60% (4)	(fairly confident) 80% (5)	(complete confidence) 100% (6)	-----
Read and understand the <i>main ideas</i> of a short passage on local travel in Irish (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	End of Block:
Read and understand the <i>main ideas</i> of a short passage on a person talking about what they have done recently in Irish (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Read and understand the <i>details</i> of a newspaper advertisement in Irish (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Read and understand the <i>details</i> provided about accommodation to rent (e.g. rooms, amenities, etc.) in Irish (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Confidence in Irish listening abilities

You will hear a recording in Irish to answer questions on. Each question has three answer options. You will be asked to choose which sentence that you think is the most appropriate answer to the question.

How confident are you that you can perform each of the following Irish listening skills:

	(no confidence) 0% (1)	(little confidence) 20% (2)	(slightly confident) 40% (3)	(somewhat confident) 60% (4)	(fairly confident) 80% (5)	(complete confidence) 100% (6)
Listen to and understand the <i>main ideas</i> of a short news report in Irish (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listen to and understand the <i>main ideas</i> of a short advertisement for a new TV programme in Irish (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listen to and understand the <i>details</i> of a person talking about language classes (e.g. class schedules, level of difficulty, etc.) in Irish (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Listen to and understand the *details* about a person's life (e.g. places they have visited, plans they may have, etc.) in Irish (7)



Gramadach

Tá tú ar tí 8 abairt Ghaeilge a fheiceáil. Tá trí rogha i gceist ingach abairt. Ní léiríonn ach rogha amháin foirm cheart na habairte. Aibhsítear na difríochtaí i ngach abairt. Roghnaigh an abairt is oiriúnaí, dar leat.

Grammar

You are about to see 8 Irish sentences. Each sentence has three options. Only one option represents the correct form of the sentence. The differences in each sentence are highlighted. Please choose the sentence that you think is most appropriate.

Tá 3 nóiméad agat chun an chuid seo a chomhlánú (You have 3 minutes to complete this section)

End of Block: Grammar intro

Start of Block: Phase 1 Grammar A2

1. Roghnaigh an freagra ceart (Please choose the correct answer).

- D'éistfinn** léi nuair a thiocfaidh sí amárach (1)
 - Éistfidh mé** léi nuair a thiocfaidh sí amárach (2)
 - Éistim** léi nuair a thiocfaidh sí amárach (3)
-

2.

- Tá an aimsir níos **dheas** sa Spáinn an t-am seo den bhliain (1)
 - Tá an aimsir níos **deise** sa Spáinn an t-am seo den bhliain (2)
 - Tá an aimsir níos **dheasa** sa Spáinn an t-am seo den bhliain (3)
-

3.

- Téigh** go dtí an seomra suí! Tá mo tholg nua tagtha (1)
 - Chuaigh** go dtí an seomra suí! Tá mo tholg nua tagtha (2)
 - Téann** go dtí an seomra suí! Tá mo tholg nua tagtha (3)
-

4.

- Níl **na bróga** a cheannaigh mé oiriúnach (1)
- Níl **na bhróg** a cheannaigh mé oiriúnach (2)
- Níl **na bhróga** a cheannaigh mé oiriúnach (3)

End of Block: Phase 1 Grammar A2

Start of Block: Phase 1 Grammar B1

5.

- Dhúisigh mé i lár **an hoíche** (1)
 - Dhúisigh mé i lár **na hoíche** (2)
 - Dhúisigh mé i lár **an oíche** (3)
-

6.

- An dóigh **duit** féin gur cheart go mbeadh srianta mar seo i gceist? (1)
 - An dóigh **ort** féin gur cheart go mbeadh srianta mar seo i gceist? (2)
 - An dóigh **leatsa** féin gur cheart go mbeadh srianta mar seo i gceist? (3)
-

7.

- Beidh an aimsir go hiontach. Tá éadaí nua ag teastáil **ort** an samhradh seo (1)
 - Beidh an aimsir go hiontach. Tá éadaí nua ag teastáil **uait** an samhradh seo (2)
 - Beidh an aimsir go hiontach. Tá éadaí nua ag teastáil **tusa** an samhradh seo (3)
-

8.

- Má bhíonn an t-am agam, **tabharfaidh** mé cuairt ar mo mháthair an tseachtain seo chugainn (1)
 - Má bhíonn an t-am agam, **thugainn** mé cuairt ar mo mháthair an tseachtain seo chugainn (2)
 - Má bhíonn an t-am agam, **thug** mé cuairt ar mo mháthair an tseachtain seo chugainn (3)
-

End of Block: Phase 1 Grammar B1

Start of Block: Reading intro

Léamhthuiscint

Tabharfar 2 ghiota gearra duit lena n-áirítear blaghost agus fógra. Tá 3 cheist I gceist i ngach giota (6 cheist san iomlán). Athraíonn siad seo ó roghnú cibé acu an bhfuil ráiteas fíor, bréagach nó nach bhfuil, nó roghnú cé acu de na trí ráiteas a léiríonn an méid a léigh tú sa téacs.

Reading comprehension

You will be presented with 2 short readings including a blog post and an advertisement. Each reading has 3 questions (6 questions in total).

These vary from choosing whether a statement is true, false or not said, or choosing which of the three statements represents what you have read in the text.

Tá 3 nóiméad agat le gach léamh a chríochnú agus freagair na ceisteanna (You have 3 minutes to complete each reading and answer the questions)

End of Block: Reading intro

Start of Block: Phase 1 Reading A2

Bhlag 13 Meitheamh, 2020

Conas tá agaibh? Seán Ó Mainnín anseo arís ag blagáil. An bhfuil sibh ag baint taitneamh as an aimsir álainn seo? Ó thosaigh paindéim Covid 19, bím ag obair ón mbaile an t-am go léir, cosúil libh féin.

Tá a fhios agaibh gur maith liom taisteal agus mar sin, is breá liom imeacht ag siúl sna sléibhte gach deireadh seachtaine ó thosaigh Covid. Níl aon rud níos fearr ná imeacht agus éalú ó strus agus ó bhrú na hoibre.

De ghnáth, téim ag siúl ar shléibhte Chill Mhantáin uair ó chloig ón gcathair. Tá sé éasca imeacht. Níl ag teastáil uait ach cóta compordach, mála droma le haghaidh uisce agus do lóin agus péire maith bróg. B'fhéidir go bhfeicfidh mé ann sibh lá éigin!

Tar éis duit an téacs thuas a léamh, luaigh le do thoil an bhfuil gach ceann de na 3 ráiteas fíor, bréagach, nó nach bhfuil. (After reading the text above, please state whether each of the 3 statements are either true, false, or not stated.)

	Fíor (true) (1)	Bréagach (false) (2)	Ní Luaitear (not stated) (3)
9. Bíonn Seán ag obair sa bhaile (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Ní maith leis bheith ag siúl (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Cuireann sé ceamara ina mhála agus é ag siúl sna sléibhte (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Phase 1 Reading A2

ÁRASÁN AR CÍOS FADTÉARMACH

(9 mí go bliain)

Bóthar na Trá

Gaillimh

Tá árasán athchóirithe nua-aimseartha ar cíos in Ascaill na Fuinseoige, Bóthar na Trá ó thús mhí Mheán Fomhair ar aghaidh.

Áit chodlata do bheirt. Cistin le gach áis nua-aimseartha (cuisneoir, oigheann, miasniteoir agus micreathonn). Seomra suí faoi lántroscán le radharc ar an bhfarraige, Dhá sheomra leapa, seomra folctha. Wifi ar fáil.

Praghasanna: €450 in aghaidh na seachtaine. Éarlais le hóc.

Déan teagmháil le Méabh ag 086-3845891

12. De réir an fhógra seo (according to the notice):

Roghnaigh an ráiteas ceart (Please select the correct statement)

- Tá an t-árasán seo ar cíós go ceann bliaina (1)**
 - Níl an t-árasán ar cíós go fóill (2)**
 - Tá an t-árasán suite in aice le stad an bhus (3)**
-

13.

- Tá spás do chúigear san árasán (1)**
 - Tá an t-árasán oiriúnach do bheirt (2)**
 - Níl an t-árasán athchóirithe (3)**
-

14.

- Tá an t-árasán á dhíol ag Méabh (1)**
 - Níl áiseanna nua-aimseartha sa chistin (2)**
 - Tá an t-árasán suite os comhair na farraige (3)**
-

End of Block: Phase 1 Reading B1

Start of Block: Listening intro

Cluastuiscint

Tá tú ar tí taifeadadh gearr a chloisteáil. Tá 6 cheist i ngach taifead, agus 3 rogha de fhreagraí. Athraíonn siad seo ó roghnú cibé acu an bhfuil ráiteas fíor, bréagach nó nach bhfuil, nó roghnú cé acu de na trí ráiteas a léiríonn an méid a léigh tú sa téacs. Is féidir leat an taifead a sheinm agus a stopadh chomh minic agus a theastaíonn uait.

Listening comprehension

You are about to hear a short recording. There are 6 questions, each with 3 answer options. These vary from choosing whether a statement is true, false or not said, or choosing which of the three statements represents what you have read in the text. You can play and pause the recording as often as you require.

Tabhair faoi deara le do thoil: tá an taifead seo roinnte i roinnt codanna níos giorra (Please note: this recording has been split into a number of shorter sections).

Tá **6 nóiméad** agat leis an gcuid seo a chomhlánú agus freagair na ceisteanna (You have 6 minutes to complete this section and answer the questions)

End of Block: Listening intro

Start of Block: Phase 1 Listening B1/B2

15.

Cuid 1 (Part 1)

De réir na tuairisce seo (according to the report):

Roghnaigh an ráiteas ceart (Please select the correct statement)

- Is múinteoir Gaeilge é James** (1)
- Tá James ag múineadh in ollscoil** (2)
- Tá James ag múineadh ar líne** (3)

16.

Scríobh James leabhar do fhoghlaimoirí Manainnise?

- Fíor** (true) (1)
 - Bréagach** (false) (2)
 - Ní Luaitear** (not stated) (3)
-

17.

Cuid 2 (Part 2)

De réir na tuairisce seo (according to the report):

Roghnaigh an ráiteas ceart (Please select the correct statement)

- Bíonn an meánrang ar siúl Dé Luain** (1)
 - Bíonn an meánrang ar siúl Déardaoin** (2)
 - Bíonn an meánrang ar siúl Dé Máirt** (3)
-

18.

Cathain a bheidh an bunrang ar siúl?

- Dé Luain** (1)
- Déardaoin** (2)
- Dé Sathairn** (3)

19.

Cuid 3 (Part 3)

De réir na tuairisce seo (according to the report):

Roghnaigh an ráiteas ceart (Please select the correct statement)

- Tá an Mhanainnis agus an Ghaeilge difriúil óna chéile (1)**
 - Tá an Mhanainnis agus an Ghaeilge cosúil le chéile (2)**
 - Tá gramadach na Gaeilge agus na Manainnise deacair (3)**
-

20.

Roghnaigh an ráiteas ceart (Please select the correct statement)

- Scríobh James leabhar leis féin (1)**
 - Scríobh James leabhair in éineacht le duine eile (2)**
 - Tá go leor leabhar scríofa ag James (3)**
-

End of Block: Phase 1 Listening B1/B2

Start of Block: Phase 1 Scoring

Based on your performance in the first part of the test, you have scored X out of 20.
Please continue on to the final part to get a full indication of your current Irish abilities

End of Block: Phase 1 Scoring

Start of Block: Confidence

Attitudes and experiences with the Irish language

The following questions and statements are related to your attitudes towards the Irish language. Please state how strongly you agree or disagree.

Please state your opinion on the following statements:

	Strongly agree (1)	Agree (2)	No opinion (3)	Disagree (4)	Strongly disagree (5)
I feel that I have 'lost' all the Irish that I learned in school (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I can recall most of the Irish that I learned in school (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a tourist asked if I could speak Irish, I would say 'yes' (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that if I did a short refresher Irish course I would remember a lot of what I learned in school (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following statements are based on your school experiences. Please indicate your opinion for each of these statements.

	Strongly agree (1)	Agree (2)	No opinion (3)	Disagree (4)	Strongly disagree (5)
I was satisfied with my Irish speaking abilities in school (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The results in my Leaving Certificate, or equivalent, were a good representation of my overall Irish abilities (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There was a teacher in school that inspired me to improve my Irish abilities (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There were students in my class with a level of Irish that impressed me (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I received constructive or helpful feedback on my Irish abilities in school (5)

I enjoyed learning Irish in school (6)



End of Block: School

Start of Block: Attribution

If you performed **better than expected** in an Irish exam in school, this was due to:

	Strongly agree (1)	Agree (2)	No opinion (3)	Disagree (4)	Strongly disagree (5)
Good luck – the right questions came up (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The questions on the test weren't too difficult (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you performed **worse than expected** in an Irish test in school, this was due to:

	Strongly agree (1)	Agree (2)	No opinion (3)	Disagree (4)	Strongly disagree (5)
Not putting in enough effort into preparing for the exam (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bad luck – the right questions didn't came up (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The questions on the test were too difficult (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Attribution

Start of Block: Misc

Did you learn another language (or languages) in school apart from English and Irish?

Yes (please indicate) (1) _____

No (2)

Have you ever used an application or other media to learn Irish? (e.g. A mobile phone app such as Duolingo, or an Irish tuition CD)

yes (please indicate) (1) _____

No (2)

End of Block: Misc

Start of Block: Census

The Irish Census of Population question on Irish language ability is based on speaking ability only. Please state your opinion on the following statements:

	Strongly (1)	agree (2)	Agree (2)	No opinion (3)	Disagree (4)	Strongly disagree (5)
A national census question on Irish language abilities should ask people to declare their abilities in the other skills (reading, writing, listening) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A national census question on Irish language abilities should ask people to declare the level of ability. For example, 'I can express opinions in Irish', 'I can use basic phrases', 'I can speak fluently', etc. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 2

You are about to complete the final part of the test. The questions and format will be similar to what you have already completed in the first phase. I will ask you a final time to declare your confidence in your abilities before presenting the test.

Your performance on this part will allow me to provide you with an accurate picture of your current abilities.

Thanks in advance for your time and effort.

End of Block: Pre-Phase 2 message

Start of Block: SE Grammar 2

Confidence in recognising the correct sentence

You will be presented with a number of Irish sentences using everyday words and grammar. From the three options you will be asked to choose which sentence that you think is the most appropriate.

How confident are you in your ability in Irish to be able to correctly identify the following:

	(no confidence) 0% (1)	(little confidence) 20% (2)	(slightly confident) 40% (3)	(somewhat confident) 60% (4)	(fairly confident) 80% (5)	(complete confidence) 100% (6)
The plural of a noun (e.g. na fuinneoga, na cailíní/ the windows, the girls) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A sentence that takes place in the future (e.g. rachaidh mé inniu/ I will go today) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How to give an order or an instruction (e.g. ná bí ag caint!/ don't be talking!) (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The correct option for comparing things (e.g. Tá an carr níos deise ná mo charr / The car is nicer than mine) (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The correct 'if + future' sentence (e.g. **Má** bhíonn an bus déanach **beidh mé** i dtrioblóid/ **If** the bus is late **I will be** in trouble) (9)

The correct way to say a person needs something (e.g. **Teastaíonn** leabhair nua scoile **uaithe**/ **She needs** new school books) (10)

End of Block: SE Grammar

Start of Block: SE Reading

Confidence in Irish reading abilities

You will be presented with a number of very short texts in Irish to read and answer questions on. Each question has three answer options. You will be asked to choose which sentence that you think is the most appropriate answer to the question.

JS

How confident are you that you can perform each of the following Irish reading skills:

	(no confidence) 0% (1)	(little confidence) 20% (2)	(slightly confident) 40% (3)	(somewhat confident) 60% (4)	(fairly confident) 80% (5)	(complete confidence) 100% (6)	-----
Read and understand the <i>main ideas</i> of a short passage on local travel in Irish (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	End of Block:
Read and understand the <i>main ideas</i> of a short passage on a person talking about what they have done recently in Irish (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Read and understand the <i>details</i> of a newspaper advertisement in Irish (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Read and understand the <i>details</i> provided about accommodation to rent (e.g. rooms, amenities, etc.) in Irish (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Confidence in Irish listening abilities

You will hear a recording in Irish to answer questions on. Each question has three answer options. You will be asked to choose which sentence that you think is the most appropriate answer to the question.

How confident are you that you can perform each of the following Irish listening skills:

	(no confidence) 0% (1)	(little confidence) 20% (2)	(slightly confident) 40% (3)	(somewhat confident) 60% (4)	(fairly confident) 80% (5)	(complete confidence) 100% (6)
Listen to and understand the <i>main ideas</i> of a short news report in Irish (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listen to and understand the <i>main ideas</i> of a short advertisement for a new TV programme in Irish (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listen to and understand the <i>details</i> of a person talking about language classes (e.g. class schedules, level of difficulty, etc.) in Irish (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Listen to and understand the *details* about a person's life (e.g. places they have visited, plans they may have, etc.) in Irish (7)



Gramadach

Tá tú ar tí 8 abairt Ghaeilge a fheiceáil. Tá trí rogha i gceist ingach abairt. Ní léiríonn ach rogha amháin foirm cheart na habairte. Aibhsítear na difríochtaí i ngach abairt. Roghnaigh an abairt is oiriúnaí, dar leat.

Grammar

You are about to see 8 Irish sentences. Each sentence has three options. Only one option represents the correct form of the sentence. The differences in each sentence are highlighted. Please choose the sentence that you think is most appropriate.

Tá 3 nóiméad agat chun an chuid seo a chomhlánú (You have 3 minutes to complete this section)

End of Block: Grammar intro 2

Start of Block: Phase 2 Grammar A2

1

- Tugaim** mo fhreagra duit maidin amárach (1)
 - Thugainn** mo fhreagra duit maidin amárach (2)
 - Tabharfaidh mé** mo fhreagra duit maidin amárach (3)
-

2.

- Bhí mo mháthair níos **meas** ná m'athair ag canadh (1)
 - Bhí mo mháthair níos **mheasa** ná m'athair ag canadh (2)
 - Bhí mo mháthair níos **measa** ná m'athair ag canadh (3)
-

3.

- A pháistí, **d'iniseadh sibh** do bhur máthair cad a tharla ar scoil inniu! (1)
 - A pháistí, **d'inisfeadh sibh** do bhur máthair cad a tharla ar scoil inniu! (2)
 - A pháistí, **inisigí** do bhur máthair cad a tharla ar scoil inniu! (3)
-

4.

- Is cuimhin liom **na áiteanna** go léir ar thugamar cuairt orthu (4)
- Is cuimhin liom **na áit** go léir ar thugamar cuairt orthu (5)
- Is cuimhin liom **na háiteanna** go léir ar thugamar cuairt orthu (6)

End of Block: Phase 2 Grammar A2

Start of Block: Phase 2 Grammar B1

5.

- Tháinig sí i lár **an lá** (1)
- Tháinig sí i lár **an lae** (2)
- Tháinig sí i lár **an laethanta** (3)

6.

- Ar mhaith **duit** teacht go dtí an cluiche in éineacht liom (1)
- Ar mhaith **ort** teacht go dtí an cluiche in éineacht liom (2)
- Ar mhaith **leatsa** teacht go dtí an cluiche in éineacht liom (3)

7.

- A: ‘An bhféadfainn cabhrú leat?’ B: ‘Tá gúna ag teastáil **uaim**’ (1)
 - A: ‘An bhféadfainn cabhrú leat?’ B: ‘Tá gúna ag teastáil **agam**’ (2)
 - A: ‘An bhféadfainn cabhrú leat?’ B: ‘Tá gúna ag teastáil **ionam**’ (3)
-

8.

- Céard a dhéanfaidh tú má **beidh** sí istigh nuair a thagann tú? (1)
- Céard a dhéanfaidh tú má **bhí** sí istigh nuair a thagann tú? (2)
- Céard a dhéanfaidh tú má **bhíonn** sí istigh nuair a thagann tú? (3)

End of Block: Phase 2 Grammar B1

Start of Block: Reading intro 2

Léamhthuiscint

Tabharfar 2 ghiota gearra duit lena n-áirítear blaghost agus fógra. Tá 3 cheist I gceist i ngach giota (6 cheist san iomlán). Athraíonn siad seo ó roghnú cibé acu an bhfuil ráiteas fíor, bréagach nó nach bhfuil, nó roghnú cé acu de na trí ráiteas a léiríonn an méid a léigh tú sa téacs.

Reading comprehension

You will be presented with 2 short readings including a blog post and an advertisement. Each reading has 3 questions (6 questions in total).

These vary from choosing whether a statement is true, false or not said, or choosing which of the three statements represents what you have read in the text.

Tá 3 nóiméad agat le gach léamh a chríochnú agus freagair na ceisteanna (You have 3 minutes to complete each reading and answer the questions)

End of Block: Reading intro 2

Bhlag: Turas lae iontach - Seán Ó Mainnín © 2021

I mblag na seachtaine seo, ba mhaith liom labhairt faoi thuras a thug mé ar Ghleann Dá Loch nó Glendalough i gCill Mhantáin Dé Domhnaigh seo caite. Bhí an aimsir scamallach agus bhí sé ag cur báistí ar an lá, ach níor chuir sé sin isteach orm.

Tá Gleann Dá Loch suite timpeall daichead ciliméadar ó Bhaile Átha Cliath agus bíonn bus ag dul ó Bhaile Átha Cliath gach lá agus níl an turas rófhada in aon chor-timpeall uair a chloig agus fiche nóiméad. Tá an áit go hálainn. Tá locha, crainnte, coill agus cnoic ann. Tá an túr cruinn an-ard agus seasann sé amach sa ghleann.

Tá an áit an-chiúin agus bíonn na héin ag canadh ann i gcónaí. B'fhéidir go bhfeicfidh mé ann sibh Domhnach éigin!

Seán Ó Mainnín

Tar éis duit an téacs thuas a léamh, luaigh le do thoil an bhfuil gach ceann de na 3 ráiteas fíor, bréagach, nó nach bhfuil. (After reading the text above, please state whether each of the 3 statements are either true, false, or not stated.)

	Fíor (true) (1)	Bréagach (false) (2)	Ní Luaitear (not stated) (3)
9. Bhí an aimsir go maith ag an deireadh seachtaine (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Ní maith leis a bheith ag siúl (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Tá a lán rudaí deasa le feiceáil i nGleann Dá Loch (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Phase 2 Reading A2

Start of Block: Phase 2 Reading B1

TEACH SAOIRE SA GHAELTACHT AR CÍOS

1-21 Meitheamh 2022 agus 1-21 Iúil 2022

An Muiríoch, Corca Dhuibhne, Co. Chiarraí

Teach feirme athchóirithe. Dhá stór. In aice na trá. Lóistín féinfhrestail.

Trí sheomra leapa thuas staighre. Áit chodlata do naonúr. Seomra suí, le radharc ar an trá, agus gach trocán ann; tolg, cathaoireacha uillinne. Dhá leithreas, seomra folchtha (cith agus folcadán) agus póirse. Páirc fhairsing ar chúl an tí a bheadh oiriúnach do pháistí.

Praghasanna ó €600 in aghaidh na seachtaine.

Deirí seachtaine ar fáil chomh maith níos déanaí sa bhliain

Déan teagmháil le Máirín ag 087-4532187

12. De réir an fhógra seo (according to the notice):

Roghnaigh an ráiteas ceart (Please select the correct statement)

- Tá spás do níos mó ná cuigear sa teach seo** (1)
- Tá an teach suite i sráidbhaile** (2)
- Níl an teach athchóirithe** (3)

13.

- Cuirtear béilí ar fáil sa teach** (1)
- Ní chuirtear béilí ar fáil** (2)
- Níl an teach oiriúnach do pháistí** (3)

14.

- Tá troscán sa phóirse (1)**
- Teach feirme ab ea an teach seo uair amháin (2)**
- Tá an teach suite os comhair páirce (3)**

End of Block: Phase 2 Reading B1

Start of Block: Listening intro 2

Cluastuiscint

Tá tú ar tí taifeadadh gearr a chloisteáil. Tá 6 cheist i ngach taifead, agus 3 rogha de fhreagraí. Athraíonn siad seo ó roghnú cibé acu an bhfuil ráiteas fíor, bréagach nó nach bhfuil, nó roghnú cé acu de na trí ráiteas a léiríonn an méid a léigh tú sa téacs. Is féidir leat an taifead a sheinm agus a stopadh chomh minic agus a theastaíonn uait. Is féidir leat an taifead a sheinm agus a stopadh chomh minic agus a theastaíonn uait.

Listening comprehension

You are about to hear a short recording. There are 6 questions, each with 3 answer options. These vary from choosing whether a statement is true, false or not said, or choosing which of the three statements represents what you have read in the text. You can play and pause the recording as often as you require. You can play and pause the recording as often as you require.

Tabhair faoi deara le do thoil: tá an taifead seo roinnte i roinnt codanna níos giorra (Please note: this recording has been split into a number of shorter sections).

Tá 6 nóiméad agat leis an gcuid seo a chomhlánú agus freagair na ceisteanna (You have 6 minutes to complete this section and answer the questions)

End of Block: Listening intro 2

Start of Block: Phase 2 Listening B1/B2

15.

Cuid 1 (Part 1)

De réir an fhógra seo (according to the notice):

Roghnaigh an ráiteas ceart (Please select the correct statement)

- Is láithreoir teilifíse é (1)**
 - Is múinteoir é (2)**
 - Is feirmeoir é (3)**
-

16.

- Sa chéad chlár beidh sé ag dul ar ais go dtí a áit dhúchais (1)
- Sa chéad chlár beidh sé ag dul go dtí an t-aerfort (2)
- Sa chéad chlár beidh sé ag taisteal go Baile Átha Cliath (3)

17.

Cuid 2 (Part 2)

De réir an fhógra seo (according to the notice):

Roghnaigh an ráiteas ceart (Please select the correct statement)

- Beidh Hector ag taisteal thar sáile** (1)
 - Beidh clár nua ag Hector ar TG4** (2)
 - Beidh Hector ag dul go dtí an Afraic** (3)
-

18.

- Ba mhaith le Hector taisteal thar lear** (1)
- Ba mhaith le Hector taisteal thar lear agus labhairt le daoine** (2)
- Ní raibh Hector ábalta taisteal thar lear de bharr shrianta Covid-19** (3)

19.

- Níl aithne mhaith aige ag Hector ar a thír féin (1)**
 - Níl suim ag Hector i dtaisteal (2)**
 - Bhí áthas ar Hector aithne níos fearr a chur ar a thír féin (3)**
-

20.

Cén lá den tseachtain a bheidh clár Hector ar siúl?

- Dé Máirt** (1)
 - Déardaoin** (2)
 - Dé Luain** (3)
-

End of Block: Phase 2 Listening B1/B2

Start of Block: Message

Q167 Thank you for taking the time to participate in this pilot. Your contribution to my research is greatly appreciated.

Your score for both parts are as follows:

Part 1: X out of 20

Part 2: Y out of 20

Total score: X+Y out of 40

Using your total score, the table below should give you an estimate of your current abilities in Irish grammar, reading and listening.

Please note that this is only an indication that does not cover speaking or writing skills and should be seen as an overall estimate. To receive a

more accurate assessment of your abilities you should seek out a professional Irish language study centre. For example, Teastas Eorpach na Gaeilge (TEG) in Maynooth University, upon whose work the test in this study was based.

Overall score on both parts	Level
1-20	A2: Basic user
Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment)	
21-40	B1: Independent user
Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc.	

This table is loosely based on the Common European Framework of Reference for languages (CEFR)

Please remember, your participation is completely confidential.

If you have any comments, issues, suggestions, etc. on this pilot test and survey please use the box below to leave an anonymous comment

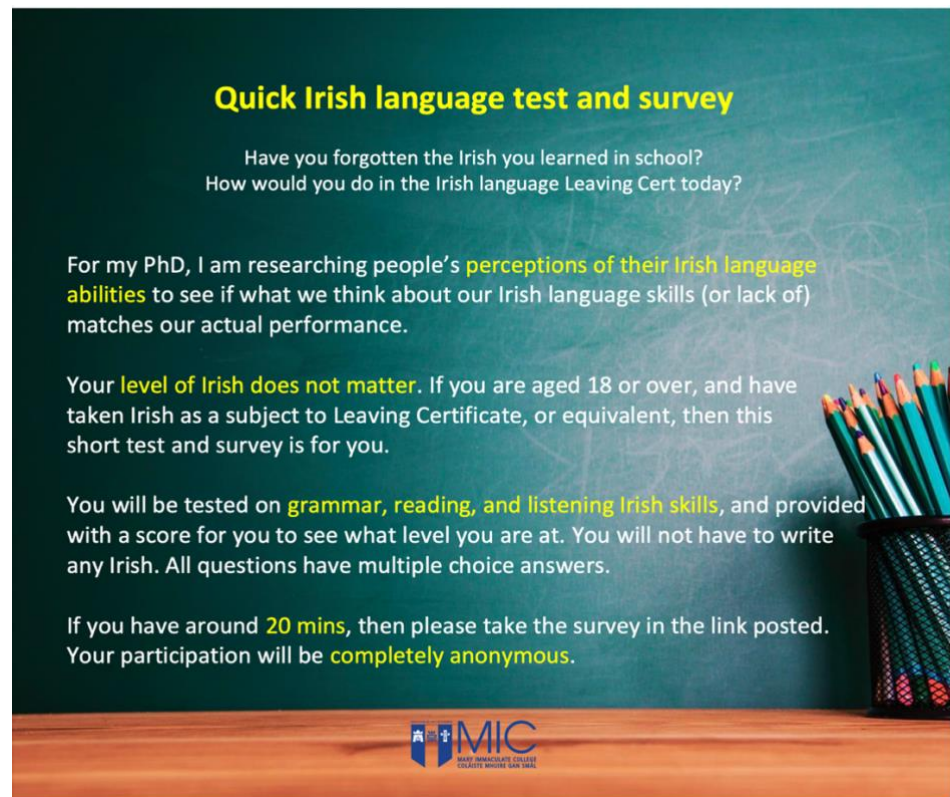
Q15 Final question

Now that you have taken a test and received your results, how confident are you in your overall Irish skills (reading, writing, speaking & listening)?

- No confidence (1)
- Little confidence (2)
- Slightly confident (3)
- Somewhat confident (4)
- Fairly confident (5)
- Complete confidence (6)

End of Block: Message

Appendix 10: Recruitment poster for social media



Quick Irish language test and survey

Have you forgotten the Irish you learned in school?
How would you do in the Irish language Leaving Cert today?

For my PhD, I am researching people's **perceptions of their Irish language abilities** to see if what we think about our Irish language skills (or lack of) matches our actual performance.

Your **level of Irish does not matter**. If you are aged 18 or over, and have taken Irish as a subject to Leaving Certificate, or equivalent, then this short test and survey is for you.

You will be tested on **grammar, reading, and listening Irish skills**, and provided with a score for you to see what level you are at. You will not have to write any Irish. All questions have multiple choice answers.

If you have around **20 mins**, then please take the survey in the link posted. Your participation will be **completely anonymous**.

