

Learning from Learner Support: A Profile of the Uptake of One-to-One Tutoring in Mary Immaculate College.

Brian Clancy

Learner Support Project Officer, Mary Immaculate College, Limerick.

1.0 Introduction

Mary Immaculate College is an autonomous college, academically linked to the University of Limerick. It offers undergraduate degrees in the Arts, Education, Education and Psychology and Early Childhood Care and Education. Each academic year is divided into two semesters consisting of fifteen weeks each. Each semester is comprised of thirteen teaching weeks (Weeks 1-13) and two examination weeks (Weeks 14-15). Students are graded according to the Quality Credit Average (QCA) system, a weighted average which describes the quality of a student's performance across all modules taken. In this system, letter grades (such as A1, B2, etc.) correspond to a Quality Point Value scale from 4 to 0, 4 being the highest and 0 the lowest.

The Learner Support Unit (LSU) was founded in Mary Immaculate College (MIC) in 1997, with the initial aim of providing support to mature students taking an undergraduate degree course in the college. In the intervening seven years, with the assistance of continued and increased investment by the Higher Education Authority under the Targeted Initiative Scheme, the remit of the LSU has expanded considerably. Due to the realisation that many of the needs of mature students are generic to all students, the unit has now been expanded in order to cater for all undergraduates in MIC. The LSU is committed to increasing participation at third level among, though not exclusive to, groups such as mature students, Travellers and Refugees, while never losing sight of the fact that these groups require continued support once within the third level system. In the LSU, this support takes many forms such as courses in academic writing, weekly learner training seminars, subject specific peer tutoring and one-to-one tutoring.

1.1 Methodology

This paper presents the initial findings of a two-year investigation into the uptake of the service provided by the Learner Support Unit in MIC. The analysis throughout this paper refers to quantitative data collected by two academic support tutors over a period of two academic years 2002-2004. The data relates to the one-to-one tutoring sessions provided by the support tutors. Where possible, information such as student name, course, duration of consultation, preparation time, nature of consultation and difficulties encountered was recorded after every one-to-one session. This operational data is needed to ensure the successful day-to-day running of the LSU in order to provide a more effective and efficient tutoring service. It was also hoped that the data would provide the LSU with a basis for academic publications such as this one. Clearly, due to the quantitative nature of the analysis in this paper, a qualitative strand of research is necessary to complement the findings.

1.2 One-to-One Tutoring in the Learner Support Unit

The majority of the one-to-one tutoring within the LSU is conducted by two academic tutors. The day-to-day work of the academic tutor includes:

- Teaching the *Academic Writing* and *Introduction to Research* modules as part of *BA I Foundation Studies*¹.
- Providing one-to-one support to all students at an undergraduate level.
- Teaching the *Academic Writing* and *Language and Linguistics* components of MIC's *Foundation Certificate: Higher Education for Adult Learners*² programme and providing one-to-one follow-up support for these students.
- Researching, developing and piloting LSU learner training programmes for third-level access and support initiatives.
- Developing teaching materials for the LSU and contributing to the Unit's ongoing action research.

From these duties it is apparent that the learner support tutors operate proactively through work with individual students, through supplementary programmes and in mainstream teaching programmes. This ensures a broad base of student contact and enables the tutors to identify and positively target ‘at risk’ students.

1.3 Theoretical Background

Cognitive Approaches to Tutoring

At a university level, one-to-one tutoring is the most interactive form of learning especially when compared to the other methods of instruction at third level such as the lecture, the textbook or small group tutorials (for example, Brown and Alkins 1988 have shown that 86% of talking time in seminars and discussions in university is made up of tutor talk). It is now widely accepted that students gain greater understanding, are more motivated and work faster in one-to-one tutoring (Slavin 1987). Bloom (1984) maintains that the average student in a tutoring situation performs at a level ranging from 0.4 to 2.3 standard deviations above the average student in a traditional classroom setting. Chi et al. (2001: 472) contend that ‘one of the main instructional differences between teachers and tutors is that tutors have the opportunity to pursue a given topic or problem until the students have mastered it’.

According to Graesser, Person and Mogliano (1995), a typical tutoring frame consists of five broad steps:

- (1) Tutor asks an initiating question;
- (2) Student provides a preliminary answer;
- (3) Tutor gives feedback on whether the answer is correct or not;
- (4) Tutor scaffolds to improve or elaborate the student’s answer in a successive series of exchanges;
- (5) Tutor gauges student understanding of the answer.

(version presented here adapted by Chi et al. 2001: 472-473)

The first three steps represent the typical dialogue path of any classroom interaction. They correspond to the classical IRF (Initiation – Response – Feedback) model developed by Sinclair and Coulthard (1975). However, in one-to-one tutoring two

additional steps are taken. The most crucial of these is the first additional step - one of *scaffolding*. The term scaffolding was coined by Bruner (Wood, Bruner and Ross 1976) to specify the type of assistance that makes it possible for learners to function at higher levels of their zones of proximal development. The zone of proximal development (ZPD) is the Vygotskian concept that defines development as the space between the child/learner's level of independent performance and the child/learner's level of maximally assisted performance (Vygotsky 1978; Bodrova and Leong 1996). In other words, the zone is one of potential representing the distance between where the child/learner is developmentally and where s/he can be with the assistance of an adult, normally a teacher. Meyer (1993) uses the term scaffolding to describe how an expert can facilitate the learner's transition from assisted to independent learning. Although scaffolding and the ZPD refer primarily to an adult-child interaction, the context of tutoring is analogous to this because of the fact that tutoring practices often entail a more knowledgeable person tutoring a less knowledgeable tutee (Chi 1996). For the tutor, scaffolds consist of support and guidance in the form of hints (Hume et al. 1996), maintaining goal orientation, highlighting critical task features, developing the task, actual execution of parts of the skill (Rogoff 1990) or providing physical props such as cue cards (Scardamalia et al. 1984) (see also Chi 1996 and Chi et al. 2001 for further exploration of these scaffolding actions). Scaffolds enable the student to internalise the reasons behind the task and to develop an autonomous stance in relation to it (Cotterall and Cohen 2003: 160). Chi (1996: 6) claims that 'scaffolding involves co-operative execution by the expert and the novice in a way that allows the novice to take an increasingly larger burden in performing the skill'. Smagorinsky and Fly (1993: 169) stress that teachers who participate with students as an inquisitor and prompter rather than a model are more likely to enable the students to perform independently. The LSU, while recognising that each student has a unique relationship with the tutor, is committed to creating an effective learning environment in a one-to-one setting thus enabling each student to progress effectively through their ZPD.

Humanistic Approaches to Tutoring

Crosling and Webb (2002: 180) point out that the existence of support programmes in higher education is seemingly at odds with the independence and self-reliance that is assumed as inherent in third level students. The objective of learning support staff is,

therefore, to empower the student, enabling him/her to work both independently and reliably. In order to do this, learner support tutors need to build rapport and trust with their students in order to encourage and develop their confidence and motivation. Tutors need to be empathetic in their approach and realise that the students need to be valued, regardless of their situation (ibid: 5). The work of Carl Rogers (1959, 1962) centres on the notion of self-concept, or your opinion of yourself, and emphasises the importance of *unconditional positive regard*. This allows people to work towards their potential unencumbered by what others think of them (Carlson et al. 2000: 499). His approach grew from his own experience of one-to-one professional encounters. He saw himself as a facilitator and allowed the client, not the therapist, to direct the course of the conversation.

Transferring these principles to education, Rogers claims that the relationship between student and tutor needs to be a collaborative one and argues that the facilitation of learning depends as much on the *relationship* that exists between facilitator and learner as on the skills or training of the facilitator. In order that this relationship be established, a significant aspect of the learner support tutor's role involves communication. Rogers' principals of supportive communication have a particular resonance here:

- Speak from one's own perspective so as to leave room for other people's views.
- Be welcoming so as to actually invite other people's views.
- Acknowledge – and preferably show comprehension – before differing so as to positively include other people's views.

(adapted by Zimmer and Alexander 2000: internet)

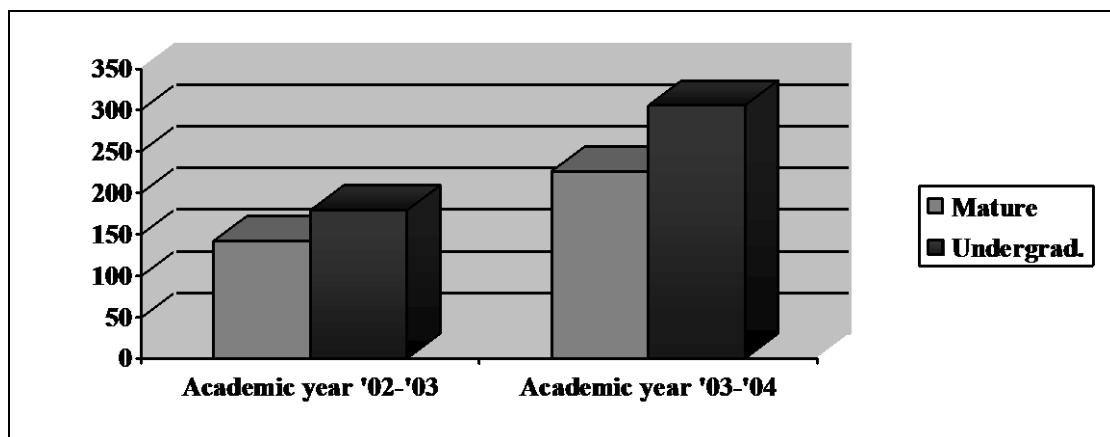
It is also essential that the relationship between learner and tutor is an equal one. The emergence of educational theorists such as Paolo Freire has helped greatly in tempering traditional didactic teaching approaches. He believes that in the teacher-student relationship 'there are neither ignoramuses nor perfect sages; there are only men who are attempting together to learn more than they now know' (Freire 1972: 63). The philosophical underpinnings of any LSU should be firmly rooted around these humanistic premises of equality, rapport and trust.

2.0 Who uses the LSU?: A Profile of the Learners

2.1 Mature Students and Undergraduates³

As has been mentioned previously, the LSU in MIC has recently been made available to all undergraduate students. Since this broadening of the unit's terms of reference, a sharp increase in the number of students using it has been noted. In addition to this, the diversity of backgrounds among students using the service has broadened and this has also had a significant impact on the day-to-day operation of the unit. The analysis presented in this paper hopes to bring into sharp relief the differences between the support needs of students availing of the service, both mature and undergraduate. Issues concerning the degree programmes available in MIC will also be referred to where necessary. In Figure 1 below, the number of visits to the LSU for one-to-one tutoring by both mature and undergraduate students is compared across two academic years:

Fig. 1: Comparison of all mature and undergraduate visits to the LSU for one-to-one tutoring across two academic years 2002-2004.



As can be seen, undergraduate students visit the unit for one-to-one tutoring more frequently than mature students – 485 visits for undergraduates compared with 368 for mature students. Undergraduate visits in '03-'04 show a 41.5% rise in demand for one-to-one tuition from the previous year, while the mature student visits reflect an increase of 37% and it is interesting to explore the reasons behind this. The main point of contact between the LSU and the students is in the academic writing class.

However, the unit has also developed a comprehensive website, advertises throughout the college using flyers, and has taken initiatives like placing study tips in the student newspaper. The upsurge of mature and undergraduate one-to-one tutoring sessions, reflected in the percentages here, indicates that these initiatives are now coming to fruition.

Mature students represent approximately 13% of the student body in MIC. As regards mature student visits to the LSU, when this ratio of mature students to undergraduates is taken into account, it becomes apparent that mature students in fact use the LSU significantly more than the undergraduates. Take for example the one-to-one tutoring numbers for the second semester '02-'03 shown in Table 1 here:

Table 1: Number of visits to the LSU for one-to-one tutoring in the second semester of the academic year 2002-2003.

<u>Mature Students</u>		<u>Undergraduates</u>	
Number of students visiting the LSU for one-to-one tutoring	41	Number of students visiting the LSU for one-to-one tutoring	86
Total number of visits	72	Total number of visits	112
Average number of visits per student	1.75	Average number of visits per student	1.3

Here it can be seen that 127 students visited the LSU in this semester, approximately two-thirds of whom were undergraduates. However, when the number of visits per student is considered, it is apparent that each mature student visits the unit on average 1.75 times a semester whereas an undergraduate visits 1.3 times. There are many possible reasons for the discrepancy in these numbers. The fact that a mature student will visit the unit more frequently than an undergraduate may suggest that mature students are in need of more support. However, it may also suggest that a more mature outlook allows these students to recognise their need for support more than the less mature students in that they are more aware of their individual strengths and weaknesses. What is apparent is that more qualitative research is necessary in this

area in order to determine the exact reasons behind the higher number of mature student visits.

Although the number of undergraduate visits is more than twice that of matures, there is a notable difference between the preparation time (the time spent preparing for a one-to-one visit) and consultation time (the time spent with the student on a one-to-one basis).

Table 2: Length of preparation and consultation time for one-to-one tutoring in the LSU in the second semester of the academic year 2002-2003.

<u>Mature Students</u>		<u>Undergraduates</u>	
Tutor preparation time	24.5hrs.	Tutor preparation time	28.75hrs.
Total consultation time	48.3 hrs.	Total consultation time	50hrs.
Average preparation time per student	20 mins.	Average preparation time per student	15 mins.
Average consultation time per student	40 mins.	Average consultation time per student	26 mins.

On average, every mature student essay requires an average of twenty minutes preparation time on the part of the tutor and forty minutes one-to-one tutoring time with the student. This is in comparison to fifteen minutes preparation time and twenty-six minutes consultation time for each undergraduate student. This demonstrates that on average a tutor devotes twenty minutes more to a mature student. This seems to corroborate that, at an academic level, the needs of undergraduate and mature students are different. However, this statement must again be tempered by the gap that exists in qualitative research in this area.

In the construction of a profile of the students who avail of one-to-one tutoring in the LSU, the consultation figures for the academic year '03-'04 also provide some interesting insights:

Table 3: Breakdown of visits to the LSU for one-to-one tutoring by mature and undergraduate students in the academic year 2003-2004.

<u>First Semester</u>		<u>Second Semester</u>	
Number of visits	260	Number of visits	272
Breakdown of visits		Breakdown of visits	
Mature	147	Mature	79
Undergraduate	113	Undergraduate	193

This table shows that in the first semester, mature students visited the unit almost twice as often as they did in the second semester. This indicates that mature students seem to require more support at the beginning of an academic year. This is due in part to a new cohort of first year mature students, however, not all mature students attending one-to-one tutoring sessions in this first semester are first year students and this could point towards the stresses experienced in returning to university culture after a long summer break. In contrast, the undergraduates used the unit 1.7 times more frequently in semester two than in semester one. The reasons behind this are more fully explored in Table 4:

Table 4: Breakdown of visits to the LSU for one-to-one tutoring by B.A. and B.Ed. students in the academic year 2003-2004.

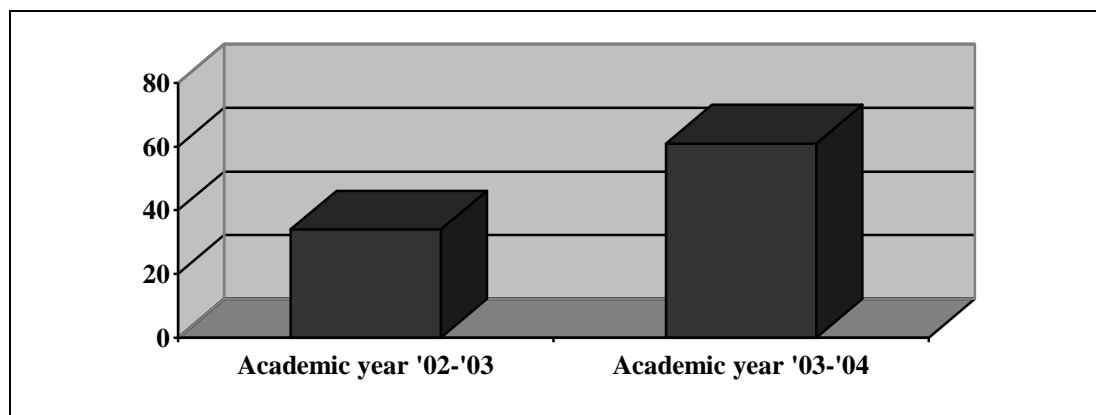
<u>Semester One</u>		<u>Semester Two</u>	
Number of visits	260	Number of visits	272
Breakdown of visits		Breakdown of visits	
B.A.	159	B.A.	90
B.Ed.	101	B.Ed.	182

It is evident that students of the B.Ed. degrees availed of the one-to-one tutoring service more than twice as often as the B.A. students in the second semester. The essay deadlines for the degree in education in MIC tend to be concentrated in the second semester thereby greatly increasing the amount of support needed by education students.

2.2 Foundation Certificate Students

The *Foundation Certificate: Higher Education for Adult Learners* course offered in MIC is another area where the academic support tutors offer one-to-one tutoring sessions to students. Students on the Foundation Certificate are required to be twenty-two years or over on the first of January of year of application for the course. This ensures that, should they chose to progress to full-time university education, they are afforded mature student status. This course is now entering its third year and the number of visits for the first two years of the course is provided in Figure 2:

Fig. 2: Number of one-to-one tutoring visits for Foundation Certificate course for the two academic years 2002-2003 and 2003-2004.

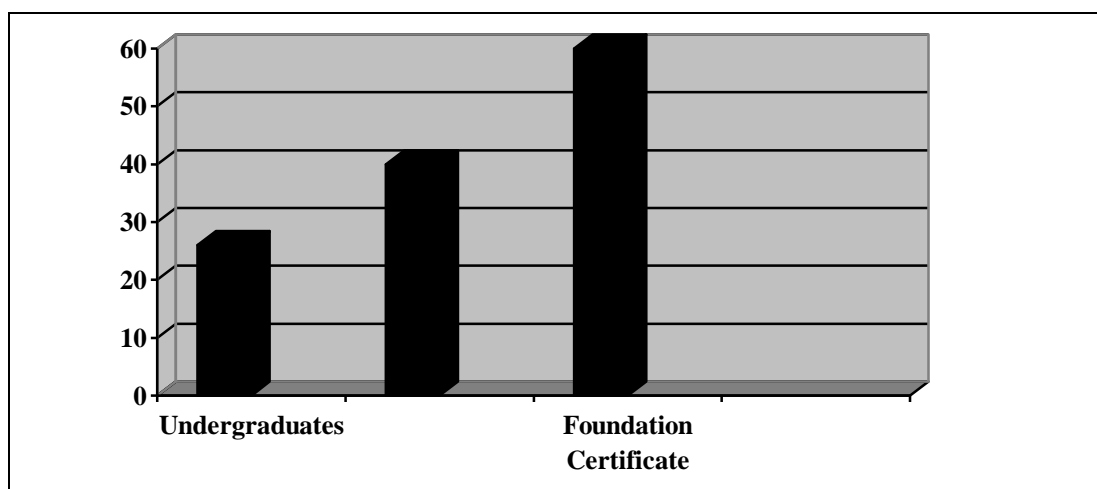


As can be seen, the number of student visits for one-to-one tutoring increased from 34 visits in 2002-2003 to 61 visits in 2003-2004. This represents a 44% rise in uptake of one-to-one tutoring on this course despite the fact that student numbers have remained constant over the two years. There exists a range of possible explanations for this. In the pilot year of the course, it was noted that students who participated in one-to-one sessions achieved significantly higher grades than those who did not. This was brought to the attention of the students the following year and consultations have risen

accordingly. It may also be possible to hypothesise that the second year more successfully targeted disadvantaged and non-traditional students thereby increasing the amount of support needed.

Figure 3 shows the difference between the average consultation times (the time spent (the time spent with the student on a one-to-one basis) for undergraduate students, mature students and Foundation Certificate students.

Figure 3: Average consultation time for one-to-one tutoring in the LSU across three cohorts – undergraduates, mature students and Foundation Certificate students (second semester 2002-2003).



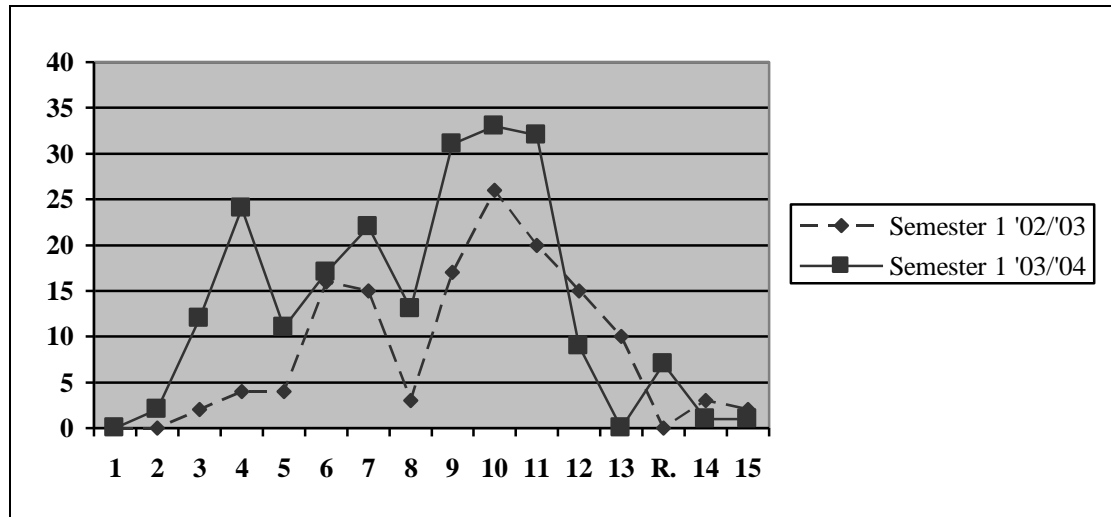
The average Foundation Certificate student requires more than twice the consultation time of an average undergraduate – sixty minutes as opposed to twenty six minutes. Similarly, a Foundation Certificate student requires an extra twenty minutes in comparison to a mature student. Anecdotally speaking, the academic needs of Foundation Certificate students are different to those of an undergraduate or mature student. In an academic context, they require more work in areas such as sentence structure and overall essay structure. Pastorally, very often they are thinking of returning to university and a segment of the consultation time can be expended on discussing the pros and cons of returning to full-time education.

2.3 When do the students use it?

Essay deadlines within MIC have a noteworthy effect on the analysis presented in Section 2.1. These deadlines obviously have an impact on students, however, they

also place an increased and concentrated demand on the LSU. Figure 4 shows the number of one-to-one consultations per week across two first semesters in MIC:

Fig. 4: Number of one-to-one tutoring visits per week across two first semesters (academic years '02-'03 and '03-'04).



In Figure 4, the vertical axis of the graph shows the number of visits, whereas the numbers on the horizontal axis represent Week 1, Week 2, Week 3, etc (R. on the horizontal axis represents Reading Week). The graph clearly shows that in the first semester, the peak weeks are Weeks 4, 7 and 10, with 10 being the busiest peaking at 26 one-to-one tutoring sessions in semester one '02-'03 and 33 in semester one '03-'04. The students typically have to submit more than one assignment in each of these weeks and this puts increased demand on both the students and the LSU. This is especially true in first year where a B.A. student has to take four subjects in addition to Foundation Studies. Brosnan, O'Keeffe and Binchy (2003) have previously identified a mismatch in MIC between students as 'receivers' and lecturers as 'givers' of academic assignments. A wider range of deadlines is available to lecturers such as Weeks 5, 8 and 12 but these are, as of now, under-utilised. It may be possible as the LSU becomes further mainstreamed that suggestions concerning the regularisation of workloads could be made at a college level.

2.3 What specific needs can be identified?

The support tutors keep a record of the difficulties encountered by each student in a one-to-one tutoring session. From the records it is evident that the main academic

issues that pertain to students appear to fall into four main categories – *style*, *structure*, *referencing (both in-text and bibliographic)* and *computer skills*. Table 5 outlines these four areas and gives a more detailed breakdown of the composition of each.

Table 5: Areas of difficulty experienced by students.

<u>Area</u>	<u>Examples of problems encountered</u>
Style	<p><i>General academic style: repetition, illogical sentences, redundancy, academic register.</i></p> <p><i>Punctuation: use of the apostrophe and comma, academic connectors and discourse markers.</i></p> <p><i>Spelling problems.</i></p>
Structure	<p><i>Basic sentence structure: both simple and complex sentences.</i></p> <p><i>Paragraphing: thesis statements and topic sentences.</i></p> <p><i>Academic essay structure: writing an introduction and conclusion.</i></p> <p><i>Structure of a research project.</i></p>
Referencing (in-text and bibliographic)	<p><i>Referencing within the essay.</i></p> <p><i>Writing a bibliography.</i></p>
Computer Skills	<p><i>Word™ for academic purposes: indenting quotations, using the spell check, inserting footnotes, page numbers, drawing tables.</i></p>

Based on information collected over semester one of the academic year '03-'04, it is apparent that in-text and bibliographic referencing of citations and quotations produces the most difficulties for students. In 58% of the 260 one-to-one tutoring sessions in this semester, referencing was discussed between tutor and student. This was followed by structure (42%), style (41%) and computer related issues (13%). Referencing has proven to be a difficult issue with students due to its non-standardisation within MIC. Different faculties in the university tend to use different referencing systems resulting in confusion on the students' part; the History faculty,

for example, require the Footnoting System whereas the Harvard System is standard in the faculty of Education. In addition, the proliferation of use of the Internet at third level has created a research tool with yet more implications for referencing. It should also be recognised that many students have pastoral needs and tutors must be prepared to address these and refer students for further counselling where necessary. The increased number of non-traditional students also means that areas such as learning disabilities and adult literacy may, in the future, become part of the tutor's remit.

3.0 Conclusion: Lessons from the Learner (Support Unit)

Overall, this paper emphasises that, due to factors such as the multifarious nature of academic writing tasks at third level, there exists a demand for an increased level of academic support in Ireland. The pressures that third level places on students, such as clustered submission deadlines, are generally different to those encountered in students' previous educational experience. Accordingly, learner support should be made available to such an extent that it becomes both a recognised and accepted part of student life. From the quantitative data presented, it is evident that mature students visit the Unit more frequently than undergraduate students. It was also shown that mature students require more consultation time on the tutor's part. However, the analysis demonstrated that a tutor is required to dedicate the most time to students at a foundation level. Importantly, the paper identified a need for more qualitative research in order to determine in more detail the reasons behind these findings. Finally, it was observed that students in MIC primarily experience difficulties in academic writing fields such as referencing of citations and quotations and structure, however, these are by no means the only barriers students are required to overcome in the course of their studies.

Academic support programmes have existed in the U.S for almost a century and in the U.K since the 1940's. Therefore, Ireland lags far behind in this area, especially regarding research. In relation to future studies of learner support, it would be interesting to see how the support needs of non-university students, for example in institutes of technology, compare to those in universities. Similarly, students of science or engineering, due to the difference in subjects studied and the nature of assessment, are likely to encounter different academic issues to those pursuing arts

programmes. Case studies tracking individual students' progress within an LSU would also prove very instructive. Finally, there exists the opportunity to examine the work of the tutors themselves by analysing the language used in one-to-one tutoring sessions. Projects like these would ensure that learning from learner support is indeed a two-way process ensuring that tutor and student work in harmony with one another.

Endnotes

¹ *Foundation studies* is a compulsory programme offered to first year B.A. students in MIC. It includes introductory modules in Academic Writing, Information Technology, Anthropology, Psychology and an Introduction to Research module. The LSU delivers both the Academic Writing and the Introduction to Research components.

² The *Foundation Certificate: Higher Education for Adult Learners* is a part-time evening programme in MIC designed to promote mature student entry to degree level courses.

³ The LSU caters for all undergraduate students in MIC. For the purposes of this paper, the term *undergraduate* is used to refer to third level students who have progressed directly from Leaving Certificate and are under twenty-three years of age upon commencement of the degree programme. *Mature student* is used to refer to those undergraduates of twenty-three years or over within MIC.

References

Bloom, B., 1984. 'The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring'. *Educational Researcher*, 13, 4-16.

Bodrova, E. and D. J. Leong, 1996. *Tools of the Mind: The Vygotskian Approach to Early Childhood Education*, Engelwood Cliffs: Prentice Hall.

Brosnan, G., A. O'Keeffe and J. Binchy, 2003. Feeding Back Feedback – A Cyclical Model for Learner Support. In: R. Tormey (ed.), *Teaching Social Justice*, Limerick: Centre for Educational Disadvantage Research, 191-201.

Brown, G. and M. Alkins, 1988. *Effective Teaching in Higher Education*, London: Methuen.

- Carlson, N., W. Buskist and G. N. Martin, 2000. *Psychology: The Science of Behaviour*, Harlow: Pearson.
- Chi, M., 1996. 'Constructing Self-Explanations and Scaffolded Explanations in Tutoring'. *Applied Cognitive Psychology*, 10, <http://www.pitt.edu/~chi/papers/selfex96.PDF> (date accessed 06-01-2005).
- Chi, M., S. Siler, H. Jeong, T. Yamauchi and R. Hausmann, 2001. 'Learning from Human Tutoring'. *Cognitive Science*, 25, 471-533.
- Cotterall, S. and R. Cohen, 2003. 'Scaffolding for Second language Writers: Producing an Academic Essay'. *ELT Journal*, 57(2), 158-166.
- Crosling, G. and G. Webb, 2002. *Supporting Student Learning: Case Studies, Experience and Practice from Higher Education*, London: Krogen Page.
- Freire, P., 1972. *Pedagogy of the Oppressed*, London: Penguin.
- Graesser, A., N. Person and J. Magliano, 1995. 'Collaborative Dialogue Patterns in Naturalistic One-to-One Tutoring'. *Applied Cognitive Psychology*, 9, 495-522.
- Hume, G., J. Michael, A. Rovick and M. Evens, 1996. 'Hinting as a Tactic in One-to-One Tutoring'. *Journal of the Learning Sciences*, 5(1), 23-47.
- Meyer, D., 1993. What is Scaffolded Instruction? Definitions, Distinguishing Features and Misnomers. In: D. Leu and C. Kinzer (eds.), *Examining Central Issues in Literacy Research, Theory and Practice*, Chicago: The National Reading Conference, 41-53.
- Rogers, C., 1959. A Theory of Therapy, Personality and Interpersonal Relationship, as Developed in the Client-Centred Framework. In: S. Koch (ed.), *Formulations of the Person and the Social Context*, New York: McGraw-Hill, 184-256.
- Rogers, C., 1962. 'The Interpersonal Relationship: The Core of Guidance'. *Harvard Educational Review*, 32, Autumn, 416-429.

- Rogoff, B., 1990. *Apprenticeship in Thinking: Cognitive Development in Social Context*. Oxford: Oxford University Press.
- Scardamalia, M., C. Bereiter and R. Sternbach, 1984. 'Teachability of Reflective Processes in Written Composition'. *Cognitive Science*, 8, 173-190.
- Sinclair, J. and M. Coulthard, 1975. *Towards an Analysis of Discourse*, Oxford: Oxford University Press.
- Slavin, R., 1987. 'Making Chapter 1 make a Difference'. *Phi, Delta, Kappan*, 69(2), 110-119.
- Smagorinsky, P., and P. Fly, 1993. 'The Social Environment of the Classroom: A Vygotskian Perspective on Small Group Process'. *Communication Education*, 42, 159-171.
- Vygotsky, L. S., 1978. *Mind and Society: The Development of Higher Mental Processes*, Cambridge, MA: Harvard University Press.
- Wood, D., J. C. Bruner and G. Ross, 1976. 'The Role of Tutoring in Problem Solving'. *Journal of Child Psychology and Psychiatry*, 17, 89-100.
- Zimmer, B. and G. Alexander, 2000. *Using Carl Rogers' Communication Principles to Facilitate Mutually Supported Learning On-line*, <http://otis.scotcit.ac.uk>, (date accessed 27-07-2004).