One Year On: Using a Learning Skills Programme to Support Learners At Risk of Academic Underachievement

Catherine Mahon and Úna Crowley
catherine.m.mahon, una.m.crowley{@nuim.ie}
Centre for Teaching and Learning
National University of Ireland Maynooth
Maynooth, Ireland

International Conference on Engaging Pedagogy 2013 (ICEP13) Institute of Technology (IT Sligo), Sligo, Ireland, Dec. 6, 2013
©ICEP13

Abstract

Making the transition to higher education requires learners to become increasingly responsible for regulating their own learning. However, not all learners will have developed, or indeed be aware of, the various strategies that can be utilised to aid learning and improve academic achievement. Over the past year, we have piloted a new learning skills programme designed to support learners who have underachieved academically since commencing higher education. One of the aims of this support programme was to help learners identify and practise effective strategies that could feasibly be incorporated into their own studies (e.g., elaboration and organisation techniques).

Following on from the paper presented at last year's conference detailing the programme methodology, in the current paper we report on the data collected, including a comparison of the pre- and post-programme academic performance and learning strategy use of the 40 participating learners. In the aftermath of the programme, alongside observing increases in the frequency with which particular learning strategies were used, a number of socio-emotional benefits were also noted (e.g., gains in feelings of inclusion and confidence).

Lastly, the prevalent themes to emerge from the programme evaluation are described, with reference to questionnaire data. Specifically, we focus on what aspects of the programme the learners found useful and the reasons underlying the perceived utility. Potential implications for similar learning skills support programmes are reflected upon from the perspective of learners completing the programme and teachers facilitating the programme.

Keywords

Learning support, academic achievement

©ICEP13

1. Introduction

Learning skills supports have, for several years now, become a mainstay of higher education, with a notable presence in many first year initiatives. Typically, such programmes focus on helping students to develop a range of study-related skills including repetition-based methods (e.g., mnemonic aids such as acronyms), cognitive strategies (e.g., studying with peers), metacognitive strategies (e.g., evaluating progress), and procedural-based strategies, such as using schedules to organise time more efficiently (Gurung, 2005). Debate persists as to how these types of supports are most effectively put into practice, with a number of researchers (e.g., Cottrell, 2001; Durkin & Main, 2002; Wingate, 2006) cautioning against the use of stand-alone programmes which adopt what has been termed a 'one-size-fits-all' approach to teaching study skills, rather than explicitly immersing and situating learning within a particular subject area or discipline (see also Hutchings, 2006).

Notwithstanding the challenges faced in identifying the optimal function and implementation of learning supports, it is important not to lose sight that for some students, taking part in these types of programmes, even the more generic ones, can be a crucial step in helping students to engage to an initial (and potentially increasing) degree in the academic sphere of the institution, and to provide a line of communication and interaction between themselves, their peers and educators. All of these things are arguably essential for each and every student, but may be especially important for students who are underachieving academically, and who may be consequently, less likely to engage with their studies (Lizzio & Wilson, 2013). While acknowledging that there are numerous factors, such as psychological, transitional, and financial factors, impacting upon academic success (Christie et al., 2004), finding ways to help students apply strategies that are conducive to their learning remains a focus for investigation in the area of academic achievement.

The current paper reports on some of the insights gleaned from the piloting of a learning skills programme targeted at students who were finding it difficult to cope with the academic demands of their chosen degree courses.

1.1. Supporting academic success

Academic success, or a lack of academic success, can influence the path that is taken through higher education. An inability to cope with academic demands is among the

©ICEP13

most recognised factors contributing to the decision to withdraw from higher education (Robbins et al., 2004). For those underachieving students who do continue with their studies, the quality of their student experience can be a cause for concern, particularly if their student experience is one underlined by feelings of anxiety and low self-belief (Schunk, 1991).

Within the literature, the relationship between academic success and self-efficacy is widely acknowledged (e.g., Choi, 2005). Broadly speaking, self-efficacy refers to the belief in one's own ability to achieve set goals (Caprara et al., 2011). Christie, Tett, Cree, Hounsell and McCune (2008) observed that students who did not perform well in their studies, for instance, by achieving low marks or marginal passes in assessments, reported lower confidence levels and reduced self-efficacy compared to those students characterised as high achievers. Of relevance here also are research findings (e.g., Ames & Archer, 1988; Williams & Clark, 2004) pointing to the link between the use of learning strategies and ability (both actual and estimated ability). Students who perform well academically tend to use a larger assortment of learning strategies with greater frequency than students who are underperforming (Schraw & Dennison, 1994; Yip, 2007). Hence, the relationship between the use of learning strategies, self-efficacy and academic achievement is complex. Finding ways to support these students who may be at risk of academic underachievement, to help them to manage their learning in an environment traditionally associated with independent, self-regulated learning, is an ever-present aim for educators (see Crisp et al., 2009).

1.2 Aims of the current programme

Beginning in 2012, as part of the Innovative Solutions to Acquire Learning to Learn (INSTALL)[1] project, we introduced a new short-term group-based learning skills programme for first and second year undergraduates at the National University of Ireland Maynooth (NUI Maynooth). There were two separate cycles of the programme with 17 students participating in October 2012 (two first year and 15 second year students), and a further 23 students taking part in the second cycle that commenced in February 2013 (three first year and 20 second year students). Of the 40 participants, 21 students had not passed at least one of their university examinations at

[1] Innovative Solutions to Acquire Learning to Learn (INSTALL) is a European project (Erasmus Multilateral Projects no 517750-LLP-1-IT-ERASMUS-ESIN) funded with support from the European Commission. This paper reflects only the views of the authors and the Commission cannot be held responsible for any use which may be made of the information contained therein.

©ICEP13

the initial attempt (repeat examinations were passed) and had been in contact with the Academic Advisory Office at NUI Maynooth during the period August 2012 to January 2013 because they were finding the academic demands of their degree programmes challenging. Upon further analysis of the profiles of the participants, it was noted that 15 of the students who had encountered difficulties in passing their university examinations had achieved over 420 points (from a total of 600 points) in their Leaving Certificate examinations (which are the official national examinations completed by all Irish second level students). It may be suggested that to obtain such points would have required a considerable amount of study, hard work, effort and commitment by the students. Christie et al. (2008) highlighted the potential dangers arising from unquestionably assuming that students who do find it challenging to pass assessments and manage their learning at university do so because of lower entry grades or a lack of academic ability or motivation to succeed. The 15 aforementioned participants in this research may be suggested to be an example of the type of student Christie et al. (2008) were striving to raise awareness of. That is, students who are motivated, who possess high academic ability, but for various reasons, are struggling now with learning at university (see also Honken & Ralston, 2013). There were also 19 self-selecting students. These were participants who independently responded to the recruitment materials as they hoped to further enhance their learning capabilities.

In this paper the preliminary findings to emerge from the research are outlined. Data analysis is ongoing at the present time. Details of the programme methodology can be found in Crowley et al. (2012). To recap, the main aims of the research were to: (i) monitor any changes in academic performance (as measured by examination marks) following completion of the programme; (ii) determine how useful the students found the new programme; (iii) explore the types of learning strategies the students were employing prior to, and after taking part in the sessions, as measured by completion of the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia & McKeachie, 1991).

2. Results

2.1 Was there a change in academic performance?

Before taking part in the programme, the average examination mark from the first year of undergraduate study was computed for each of the 35 second year students. A

©ICEP13

repeated measures *t*-test was conducted to explore if there was a change in the examination marks achieved in the second year of study following completion of the sessions. For the group as a whole, there was no difference in examination performance prior to completing the sessions (mean = 55.07, SD = 9.67) to after completing the sessions (mean = 55.84, SD = 12.09), $t(34) = -.49$, $p = .629$.

However, it was noted that there was variation in how many of the six sessions each participant had attended. Thus, we divided the second year participants into three groups as follows: (i) participants attending one or two sessions (three students); (ii) participants attending three or four sessions (15 students); (iii) participants attending five or six sessions (17 students). Figure 1 shows the average pre- and post-session examination marks for the three attendance groups. For students attending five or six sessions, there was a statistically significant increase in examination marks from pre-session (mean = 55.79, SD = 9.81) to post-session (mean = 61.90, SD = 9.6), $t(16) = -4.39$, $p < .001$. The difference in examination marks for students attending three or four sessions ([pre] mean = 56.55, SD = 8.86; [post] mean = 53.84, SD = 8.49), or one or two sessions ([pre] mean = 43.69, SD = 7.56; [post] mean = 31.54, SD = 3.66) did not reach statistical significance, $t(14) = 1.141$, $p = .273$ (three or four sessions); $t(2) = 3.096$, $p = .090$ (one or two sessions).

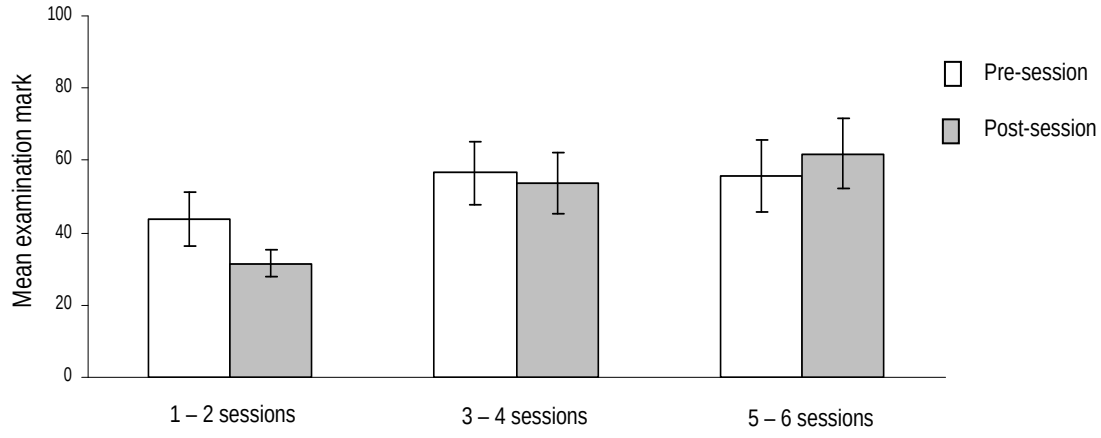

Figure 1 Mean pre- and post-session examination marks for students.

2.2 How useful did the students find the programme?

2.2.1 Quantitative analysis

Students were asked about the usefulness of the programme in relation to: (i) developing their learning to learn skills; (ii) their university career; (iii) their future life. As shown in Table 1, for each of these three items, the majority of students

©ICEP13

indicated that the programme was at least quite useful, with over half of the students choosing the very useful or extremely useful option for each of these three questions.

Table 1 Usefulness of programme (n = 40). Percentage of responses is shown in parentheses.

	Extremely useless	Very useless	Quite useless	Do not know	Quite useful	Very useful	Extremely useful
Usefulness in developing learning to learn skills.	0 (0)	0 (0)	0 (0)	0 (0)	9 (22.5)	19 (47.5)	12 (30)
Usefulness for my university career.	0 (0)	0 (0)	0 (0)	0 (0)	5 (12.5)	26 (65)	9 (22.5)
Usefulness for my future life.	0 (0)	0 (0)	0 (0)	6 (15)	12 (30)	17 (42.5)	5 (12.5)

2.2.2 Qualitative analysis

Written responses to a number of open-ended questions asking about the perceived benefits of the programme were also analysed. Among the themes noted for some students was that the sessions had resulted in changes in their perception of how learning strategies could be used for learning at university level. As one student commented:

> I used visual diagrams when I was revising for my Biology Leaving Certificate at school and they really helped me but I never thought I could use these types of diagrams for my college subjects. After we tried using visual diagrams [in the sessions] I suddenly remembered that I had used them before and I started using them again then for History and I have really found them useful. I don't think I would have ever thought of using visual diagrams for a subject like History.

Many students also made reference to social and emotional issues. One of the recurrent themes was the opportunities afforded by the programme to talk openly with peers about learning and the tasks associated with being a university student. As stated by one participant: "it gave me the opportunity to meet other students and to discuss issues without feeling I was stating the obvious. I really feel more confident in tackling these issues because I'm not alone in this". Another student wrote: "during the group discussions we talked about things that I was having difficulties with at the time and I did feel better about myself after even just by listening."

©ICEP13

2.2.3 Areas for improvement

There were two main areas for improvement identified. Firstly, students mentioned that they would like further follow-up sessions after the initial run of six sessions had ended. Secondly, many of the comments detailed how students would like to learn more subject-specific learning strategies. For example, one student wrote "include suggestions for how to study for a science course". Another student remarked "would like more information given on how to structure an answer for arts subjects (e.g., essay style answers)".

2.3 Comparing pre- and post-programme use of learning strategies

A series of paired *t*-tests were undertaken to explore if there were differences in the pre- and post-programme scores for the learning strategies scales of the MSLQ. At the time of writing, the data has been analysed for the first cycle of participants. The results from these comparisons are reported in Table 2. There were statistically significant increases in scores following completion of the sessions for four of the nine scales; elaboration, organisation, peer learning and help seeking, but not for rehearsal, critical thinking, metacognitive self-regulation, time and study environment, or effort.

In addition, the self-report data indicated that 92% of the participants agreed that they had tried to use some of the strategies from the sessions in their own studies, while 88% of the participants agreed that they had made changes to the way in which they studied since starting the programme.

Table 2 Change in MSLQ scores pre- and post-sessions.

Learning Strategies Scale	Pre-session: Mean (*SD*)	Post-session: Mean (*SD*)	*t*(16)
Rehearsal	4.22 (1.29)	4.52 (0.86)	1.04
Elaboration	4.60 (1.11)	5.31 (0.79)	3.14**
Organisation	4.27 (1.31)	5.27 (1.07)	3.15**
Critical thinking	3.69 (1.28)	4.37 (0.91)	2.11
Metacognitive self-regulation	3.79 (0.82)	4.11 (0.87)	1.88
Time and study environment	4.46 (0.93)	4.69 (0.79)	1.33
Effort regulation	4.87 (0.89)	5.13 (1.14)	1.37
Peer learning	2.94 (0.72)	3.75 (1.37)	2.38*
Help seeking	3.69 (1.01)	4.52 (1.43)	3.79**

Notes. * $p < .05$, ** $p < .01$

©ICEP13

3. Discussion

Over the past year, a new learning skills programme designed to support students who had previously underachieved academically was piloted. Although 25 of the participating students did increase their mean examination mark from their first year of study to their second year, the increases generally were small. Hence, the difference between the pre- and post-session examination performance did not reach statistical significance. Upon closer inspection it was observed that programme attendance could be relevant. The 17 students who attended at least five of the six sessions did show statistically significant gains in their second year examination performance. Notably, at the start of the programme, 10 of these 17 participants were identified as academically underachieving. However, the research design and the lack of a control group precludes us from attributing these gains to participation in the current programme. It is additionally important to acknowledge that the students who attended fewer sessions (and who did not show statistically significant gains) did have lower first year average marks to begin with. Thus, further investigation of the relationship between programme attendance and pre- and post-session academic achievement is currently underway through use of a regression analysis. There are also various other variables (e.g., student characteristics) which may warrant consideration here. One possibility is that students attending a greater number of the sessions could have been more motivated to do well academically. Motivation has been shown to exert a considerable impact on academic performance (e.g., Allen et al., 2008; Green et al., 2006). In future research phases, measures of potential contributing factors such as motivation will be obtained to shed light on why the sessions appeared to help certain students more so than others. As part of the ongoing evaluation of the programme, it will be essential to determine the reasons which may have inclined or prevented participants attending the sessions and to explore what we can do as teachers to encourage students to attend these types of programmes.

While not all of the participating students demonstrated gains in their academic performance, the majority of the students did indicate feeling more confident about their studies. Such a boost in confidence may be suggested to be particularly important for students who may in the past, have experienced the disappointment associated with low marks or failing an examination. In many cases,

©ICEP13

the feelings of increased confidence were attributed to interacting with other students during the sessions; students who could relate to each others' experiences. Extensive literature has documented the key role of group-based learning supports for students who may be at risk of academic underachievement, given that the more students interact with their peers and academic staff members, the more likely students are to persist with their studies (e.g., Christie et al., 2008; Tinto, 1997). Small group interactions may be particularly beneficial in promoting a sense of belonging for students (Kember et al., 2001), and this seemed to be the case here as none of the groups in the pilot programme exceeded 10 students.

In the current research, the groups featured a mix of self-selecting students and students who were academically underachieving. The involvement of self-selecting students in learning skills initiatives is sometimes represented in quite a negative way because in many cases these students are already highly successful academically (see Wingate, 2006). Yet we found that the group compositions were a key factor in the success of the programme. Although the programme was never intentionally represented as a remedial intervention, nonetheless, some students may hold less than positive impressions of these types of initiatives (e.g., Durkin & Main, 2002; Reddy et al. 2008). Having a mix of students from different academic backgrounds coming together to share their learning experiences (both disappointments and successes) really helped to create an open, inclusive, positive environment of *learners*. Commonalities were often discovered through discussion and the comments of students who had previously underachieved academically revealed that they felt less anxious about their studies after undertaking the sessions partly because they had heard other students talking about similar experiences to themselves.

4. Conclusions and Future Work

Despite the range of learning strategies available, it cannot be assumed that all students necessarily are aware of *what* these strategies are and *when* these strategies can be used most effectively. Acquiring strategies is only one half of the equation; the application of such strategies is equally as important (Hadwin & Winne, 2012). During the programme it transpired that several of the students seemed to hold views that because they had used a particular learning strategy in secondary school that the strategy could not be utilised at university. That students might not employ a strategy (even one that had proved to be effective for them previously) because of associations

©ICEP13

to learning at second level was something that had not occurred to us. To further our understanding of why students do or do not use particular learning strategies, it may be necessary to explore in greater detail the perceptions that students have about learning strategies. For example, to what extent do students associate learning strategies with particular learning contexts or even subjects?

When deciding what strategies to incorporate into the sessions we were guided by research evidence pointing to the effectiveness of the strategies. Yet there were some strategies (most memorably mind maps) that only a very small number of our students indicated they liked. Consistent with previous research (e.g., Cao & Nietfeld, 2007; Karpicke et al., 2009) we observed a mismatch between the strategies reported in the literature as being effective and the strategies that students actually mentioned using. From a teaching perspective, we discovered it was important not to underestimate the impact of affective factors on strategy use. Although in the current research it was not possible to probe why students liked or disliked certain strategies, further investigation into this area may prove useful.

The current research is not without limitations. Self-report measures featured heavily and it remains to be seen how accurately participants responded to these measures. For the pilot, the decision was made to focus on general, rather than subject-specific learning strategies, mainly because the participants studied different disciplines. Somewhat unsurprisingly, many students did request greater inclusion of subject-specific strategies. Research has highlighted the importance of helping students to acquire a combination of generic and domain-specific learning strategies to aid learning in their chosen course (see Weinstein et al., 2011, for review). When revising the current programme we will explore how we can best incorporate more subject-specific learning strategies through talking to educators from particular subject areas to gain greater insight into the types of core skills associated with that subject and the approaches that can be taken to help students develop these skills.

Taken together, the results from this pilot suggest that one of the potential advantages for students who do take part in learning skills programmes is that something that begins with the aim of explicitly supporting and enhancing academic performance can have unexpected benefits on other domains that influence, and are influenced by, academic performance, such as a sense of belonging, confidence and motivation.

©ICEP13

5. References

Allen, J., Robbins, S. B., Casillas, A., & Oh, S. (2008). Third-year college retention and transfer: Effects of academic performance, motivation and social connectedness. *Research in Higher Education, 49*(7), 647-664.

Cao, L. & Nietfeld, J. L. (2007). College students' metacognitive awareness of difficulties in learning the class content does not automatically lead to the adjustment of study strategies. *Australian Journal of Educational and Developmental Psychology, 7*, 31-46.

Caprara, G. V., Vecchione, M., Alessandri, G., Gerbino, M., & Barbaranelli, C. (2011). The contribution of personality traits and self-efficacy beliefs to academic achievement: A longitudinal study. *British Journal of Educational Psychology, 81*, 78-96.

Choi, N. (2005). Self efficacy and self concept as predictors of college students' academic performance. *Psychology in the Schools, 42*, 197-205.

Christie, H., Munro, M., & Fisher, T. (2004). Leaving university early: Exploring the differences between continuing and non-continuing students. *Studies in Higher Education, 29*(5), 617-636.

Christie, H., Tett, L., Cree, V. E., Hounsell, J., & McCune, V. (2008). A real rollercoaster of confidence and emotions: Learning to be a university student. *Studies in Higher Education, 33*, 567-581.

Cottrell, S. (2001). *Teaching study skills and supporting learning*. Basingstoke: Palgrave Macmillan.

Crisp, G., Palmer, E., Turnbull, D., Nettelbeck, T., Ward, L., LeCouteur, A., Sarris, A., Strelan, P., & Schneider, L. A. (2009). First year students expectations: Results from a university-wide student survey. *Journal of University Teaching and Learning Practice, 6*(1), 1-18.

Crowley, U., Mahon, C., & Strain, E. (2012). Progression and non-completion in undergraduate students: Moving from academic disengagement to academic engagement. Available at http://icep.ie/wp-content/uploads/2013/02/icep12_submission_16.pdf

Durkin, K., & Main, A. (2002). Discipline-based study skills support for first-year undergraduate students. *Active Learning in Higher Education, 3*(1), 24-39.

Green, J., Nelson, G., Martin, A. J., & Marsh, H. (2006). The causal ordering of self concept and academic motivation and its effect on academic achievement. *International Education Journal, 7*(4), 534-546.

Gurung, R. A. R. (2005). How do students really study (and does it matter?) *Teaching of Psychology, 32*, 239-241.

©ICEP13

Hadwin, A. F., & Winne, P. H. (2012). Promoting learning in undergraduate students. In J. R. Kirby & M. J. Lawson (Eds.), *Enhancing the quality of learning: Dispositions, instruction and learning processes* (pp. 178-201). New York: Cambridge University Press.

Honken, N. B., & Ralston, P. A. S. (2013). High achieving high school students and not so high achieving college students: A look at lack of self-control, academic ability and performance in college. *Journal of Advanced Academics, 24*(2), 108-124.

Hutchings, C. (2006). Reaching students: Lessons from a writing centre. *Higher Education Research and Development, 54*(2), 247-261.

Karpicke, J. D., Butler, A. C., Roediger, H. L. III. (2009). Metacognitive strategies in student learning: Do students practice retrieval when they study on their own? *Memory, 17,* 471-479.

Kember, D., Lee, K., & Li, N. (2001). Cultivating a sense of belonging in part-time students. *International Journal of Lifelong Education, 20,* 326-341.

Lizzio, A., & Wilson, K. (2013). Early intervention to support the academic recovery of first-year students at risk of non-continuation. *Innovations in Education and Teaching International, 50*(2), 109-120.

Pintrich, P. R., Smith, D. A. T., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ).* Ann Arbor: University of Michigan.

Reddy, P., Greasley, A., Parson, V., Talcott, J., Harrington, K., & Elander, J. (2008). Becoming a psychology undergraduate: Integrating study skills and integrating students. *Psychology Learning and Teaching, 7*(2), 38-41.

Robbins, S. B., Lauver, K., Huy, L., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skills factors predict college outcomes. A meta-analysis. *Psychological Bulletin, 130,* 261-288.

Schraw, G., & Denison. R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology, 19*(4), 460-475.

Schunk, D. H. (1991). Self efficacy and academic motivation. *Educational Psychology, 26,* 207-231.

Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *Journal of Higher Education, 68*(6), 599-623.

Weinstein, C. E., Meyer, D. K., Husman, J., McKeachie, W. J., & King, C. A. (2011). Teaching students how to become more strategic and self-regulated learners. In M. Svinicki & W. J. McKeachie (Eds.), *McKeachie's Teaching Tips: Strategies, Research and Theory for College and University Teachers,* pp 292-307, Belmont:

©ICEP13

Wadsworth, Cengage Learning.

Wingate, U. (2006). Doing away with study skills. *Teaching in Higher Education, 11*(4), 457-469.

Yip, M. C. W. (2007). Differences in learning and study strategies between high and low achieving university students: A Hong Kong study. *Educational Psychology, 27*(5), 597-606.

©ICEP13