

Promoting Self-Regulated Learning Skills in Undergraduate Students Using a Group-Based Training Programme

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ABSTRACT:

Considerable research has indicated that self-regulated learning is a strong predictor of academic achievement. This paper reports on a six session, group-based programme involving seventeen undergraduate students, including eight students who had not passed at least one previous examination. The aim of the programme was to introduce and help the students to acquire strategies to support their learning, for example, memory techniques, time management practices, and reflective thinking skills. Before commencing training, the types of learning strategies employed by the students were assessed. This data was used to inform the design of the sessions, most notably in terms of introducing strategies that the students were unfamiliar with. Results indicated an increase in the use of certain learning strategies following programme completion, specifically in help seeking and peer learning behaviours. As part of the follow-up to the initial sessions, the academic performance of the students will be monitored in the coming months.

1 Introduction

Making the transition to higher education can be potentially challenging for a number of reasons. Aside from the social, emotional, and financial challenges faced by students, there are various learning related challenges to be negotiated within each course, in particular, the expectation that students will assume a far greater responsibility in managing their own learning. While there are always students who aspire to perform well academically, it cannot be assumed that all of these students will automatically know how to set about working towards reaching their academic goals. An unfortunate consequence of this is that high levels of motivation to succeed and do well may soon deteriorate simply because a student is not equipped with the skills or knowledge needed to achieve his or her goals (Pressley, Yokol, van Meter, Van Etten & Freebern, 1997).

Over the past decade, concerns have been voiced that an increasing number of students may not be adequately prepared to cope with the academic demands associated with studying at this level (Drew, 2001; Tuckman & Kennedy, 2011; Wingate, 2007). Possible contributing factors to this lack of preparedness have been identified. For example, in Ireland, the structure of the state examinations completed by secondary school students (referred to as the Leaving Certificate) has come under scrutiny (see Hyland, 2011). At present, a points based system is employed, with the number of points obtained in the Leaving Certificate largely determining the course a student is offered. One of the primary concerns surrounding the current system is that it encourages students to adopt learning strategies that may not be particularly effective or conducive when it comes to facilitating learning in higher education (e.g., rote learning). As a result, the possibility is that some students entering university directly from secondary school may not have acquired the essential learning strategies and skills needed to cope with the demands of their new academic courses, especially the type of critical thinking skills that are often required.

Enhancing our understanding of ways to support students and devising methods to help them along their academic journey have become important topics for teachers and researchers to explore. Indeed, many institutions have designed and introduced workshops

to help students develop core study related skills. The current paper reports on one such programme that was piloted this past year with students from the National University of Ireland, Maynooth (NUI Maynooth). One of the aims of this programme was to provide an opportunity for students to learn about strategies that could be put into practice as aids to help them on their courses, in particular when studying by themselves. Thus, there was a focus on helping students to acquire skills related to self-regulated learning. More specifically, the programme was developed to support students potentially at risk of academic underachievement.

1.1 Becoming a self-regulated learner

Part of the transition from post-primary education to higher education entails a far greater emphasis on self-directed or self-regulated learning. Zimmerman (2008) describes self-regulated learning as 'proactive' learning. In this way, learning is conceptualised as an activity that students themselves undertake, as opposed to something that happens passively to students as a result of what they are taught.

Various definitions of self-regulated learning are offered within the literature (Virtanen & Nevgi, 2010). There is, however, general consensus that self-regulated learning is not a unitary skill. Instead, there are various processes that encapsulate self-regulated learning including cognitive, metacognitive, motivational and behavioural components (Boekaerts & Cascallar, 2006). From an educational psychology perspective, many of the existing models of self-regulated learning (e.g., Pintrich, 2000; Zimmerman, 1998) highlight the cognitive and metacognitive learning strategies implemented in self-regulated learning. Organising information (e.g., establishing categories) and elaborating on material (e.g., paraphrasing) are some examples of typical cognitive learning strategies. Activities such as monitoring performance (e.g., assessing comprehension when reading) and devising plans (e.g., establishing learning goals) can be characterised as metacognitive learning strategies. Metacognitive strategies have a further key role to play in helping to guide the selection and implementation of different cognitive strategies by learners (Glogger, Schwonke, Holzäpfel, Nückles & Renkl, 2012). For instance, recognising when a change in strategy may be necessary (e.g., using an acronym to help remember the order of stages of a theory rather than simply reading about the theory).

Previous research has shown a link between the use of self-regulated learning strategies and academic achievement. Students who score highly on measures of self-regulated learning are more likely to achieve higher marks in examinations and assessments (Gettinger & Seibert, 2002; Kitsantas, Winsler & Huie, 2008; Kornell & Metcalfe, 2006). Despite the importance attached to self-regulated learning, for some students there can be a mismatch between the expectation of self-regulated learning and the actual skills that students have previously acquired that will enable them to function as self-regulated learners (Snowman & Biehler, 2006). Potentially, if the acquisition of skills contributing to learning is compromised in some way, this can have adverse implications for academic achievement, most notably, progression. Although the factors contributing to student retention are complex and multifaceted (Christie, Munro & Fisher, 2004), research has indicated that learners who are underprepared for the academic demands associated with higher education may be at risk of non-progression (Wingate, 2007).

Fortunately, studies have demonstrated that many of the skills underlying self-regulated learning can be acquired through training, modelling or intervention type programmes (e.g., Hattie, Biggs, & Purdie, 1996; Hofer & Yu, 2003; Tuckman & Kennedy, 2011). The content of these programmes can vary greatly. Some programmes tend to focus on helping learners to develop very broad learning related skills that can be applied irrespective of the subject that is being studied (e.g., how to read and comprehend a textbook chapter). Yet as noted by Weinstein, Meyer, Husman, McKeachie and King (2011) that is not to say that other explicit, subject-specific learning strategies should be overlooked. Every discipline will value certain unique skills (e.g., devising and testing hypotheses in science subjects) and learners also need to develop these skills to help them succeed on their chosen course. Aside from the

content of these learning skills programmes, the timing of when such supports are introduced is also critical. As with many interventions, the benefits to learners may be enhanced when early access to these programmes is available (Richardson, Abraham & Bond, 2012). Given that rates of withdrawal from university are typically highest in the first year of study (Wingate, 2007) interventions specifically targeted at students beginning their undergraduate academic careers may be helpful.

1.2 The current research

Balancing curriculum demands within structured degree courses can mean that there is not always sufficient time for teachers to help students learn the skills needed to become self-regulated learners. Our aim in the current research was to pilot a supplementary short-term learning skills programme that would provide an opportunity for students to learn and practise some of the cognitive and metacognitive learning strategies associated with self-regulated learning. The programme was aimed at students in their first or second year of study, in particular, students who may be underachieving academically. That is, students who may not have passed one of their degree modules at the initial attempt, or students who believe that they should be achieving higher than their present academic performance. An additional aim of the programme was to further understand the types of learning strategies that the students were using prior to the start of the training. In other words, for this particular group of students, we sought to explore to what extent the students did or did not engage already in self-regulatory learning behaviours. To this end, the Motivated Learning Strategies Questionnaire (MLSQ; Pintrich, Smith, Garcia & McKeachie, 1991) was administered to obtain an estimate of how likely it was for the participants to employ certain learning strategies (e.g., when reading for my course, I make up questions to help focus my reading). Collecting this information enabled us to pinpoint more precisely some of the areas that the students might benefit from guidance in, especially in terms of raising awareness of potentially effective strategies that may have been unknown or infrequently used by the students (e.g., linking new material to previously acquired information). We were also interested in investigating whether there were any changes in the participating students' use of learning strategies following completion of the programme.

Students at NUI Maynooth study at least three different subjects in their first year at university, with many students continuing to study two subjects in the remaining two years of their degree. Thus, in terms of the initial content of the pilot programme, we opted to focus on helping the students to develop general learning strategies that would be relevant across a range of subjects, as opposed to concentrating on more domain-specific strategies. Although learning about explicit learning strategies (e.g., memory techniques, note taking skills etc.) is important, acquiring these strategies alone is not sufficient. Effective independent learning also involves reflection (Amalathas, 2010; Masui & De Corta, 2005). Several of the models of self-regulated learning make reference to the role of reflection (e.g., Pintrich, 2000; Zimmerman, 1998). While there are many definitions of reflection available (see Moon, 2004), in the context of this paper, we focus on the element of reflection that entails learners thinking about their own learning experiences in order to understand more about how they themselves learn and how they can improve their own learning in the future. Recently, a new training protocol referred to as the Narrative Mediation Path has been developed by Freda, Esposito, Martino and Monteagudo (2012) to facilitate the emergence of reflective thinking skills in students at risk of academic underachievement. Over the next two years, as part of the INSTALL¹ European research project, the Narrative Mediation Path is being tested and evaluated in four countries, including Ireland. Given that reflection is

¹ INSTALL, *Innovative Solutions to Acquire Learning to Learn*, is a European funded project (Erasmus Multilateral Projects no. 517750-LLP-1-IT-ERASMUS-ESIN). Partners involved are the University of Naples, Italy; University of Seville, Spain; National School of Political and Administrative Studies, Romania; and National University of Ireland, Maynooth. 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.

fundamental to learning, aspects of the Narrative Mediation Path were incorporated into the current programme to encourage students to reflect on the types of changes that might be needed to improve their learning (as described in Section 2.2.2 below). One of the advantages of the Narrative Mediation Path is that it is a group-based method, thereby enabling individuals to reflect on their own and their peers' experiences.

2 Method

2.1 Participants

Seventeen NUI Maynooth undergraduate students (15 females, 2 males) in their first or second year of study volunteered to take part in the first round of the programme. The median age of the participants was 19 years (range, 18 to 22 years). These students represented a range of departments from within the university including: Chemistry; English; French; Geography; Law; Music; Psychology; and Social Studies. In terms of their previous academic performance, eight participants had not passed at least one examination at the initial attempt (although the examination was passed at a subsequent attempt). Through collaboration with the Academic Advisory Office at NUI Maynooth, these eight students were invited to take part in the programme as they had previously expressed concerns relating to their ability to study efficiently. The remaining ten students were self-reporting participants who independently responded to the recruitment materials displayed across the university campus to raise awareness of the upcoming programme.

Ethical approval for this programme was sought and obtained from the University Ethics Committee. In addition, all students provided written consent to take part in the programme.

2.2 Procedure

There were three phases in this programme as follows: (i) pre-training measures; (ii) group sessions; (iii) post-training evaluation and tracking academic performance.

2.2.1 Phase one – Pre-training measures

Prior to the start of the sessions, all 17 students completed the learning strategies subtest of the MSLQ (Pintrich et al., 1991). Although there is also a separate section on the MSLQ to assess motivation, for the purposes of the current programme we only administered the learning strategies subtest. Within this subtest there are five scales indexing use of cognitive and metacognitive strategies (e.g., rehearsal, elaboration, organisation, critical thinking, metacognitive self-regulation); plus four scales assessing resource management strategies, which include time and study environment, effort regulation, peer learning and help seeking. In total, there are 50 items to respond to. A Likert scale is used to signal responses, with participants circling a number ranging from 1 (not at all true of me) to 7 (very true of me). Sample items found on the MSLQ include statements such as "I make lists of important terms for this course and memorise the lists", and "when I study for this course, I set goals for myself in order to direct my activities in each study period".

Following the initial one-to-one meeting with participants to brief them as to the structure of the programme, we also spoke to the students individually using informal interviews to ascertain details on what aspects of learning at university they were enjoying and what learning activities they were finding somewhat challenging. Additionally, participants wrote about their academic experiences in response to a series of open-ended questions (e.g., "what are the main factors that you feel have influenced your university performance?") When reviewing the interview records and written responses, common themes to emerge related to concerns about time management, retaining information and coping with the course work-load (e.g., feeling overwhelmed by the amount of reading required). Throughout the sessions, we ensured that we made reference to these concerns, discussed them further

with the students as a group, and where possible, presented actual strategies that could potentially be used to address some of these issues (e.g., devising schedules to plan study activities).

2.2.2 Phase two – Group sessions

Students commenced attending the sessions in October 2012 which was the first semester of the current academic year. As shown in Table 2.1, the programme was comprised of six sessions. Each session lasted for approximately one hour and students came to one session every week. Based on their timetable availability, students were randomly assigned to one of three groups. There were two groups composed of five students and one group of seven students. Groups remained unchanged for the sessions as we felt that such consistency was important to encourage group cohesion. All sessions were facilitated by the first author of this paper.

Table 2.1 Overview of the programme sessions.

Session	Focus of session	Narrative stimuli used (where appropriate)
Learning to learn	What are the components of learning? For example, attention, memory, motivation, evaluating progress etc.	Proverbs and mottos (e.g., two heads are better than one, if at first you don't succeed...) to discuss potential learning strategies.
Memory	Ways of encoding, organising, and elaborating on information, practising mnemonics (memory techniques).	
Study strategies	Note taking, what to do when reading texts, question generating, summarising and paraphrasing, peer learning (e.g., use of study groups).	Journal writing (reflecting on why some learning strategies are more effective than others).
Time management	Preparing timetables, scheduling learning activities, addressing procrastination.	Vignettes of various university scenarios (e.g., examinations, attending lectures, writing essays), planning time to accommodate these activities.
Goal setting	Forming goals, planning, implementation (putting into action), monitoring and reviewing progress.	Drama and role play (what do you hope to achieve? How could you go about trying to accomplish this?)
Motivation	How do goals influence motivation? Ways to maintain interest in learning, using rewards, looking at self-beliefs.	

Due to the overall short length of the programme, we opted to present one key topic in each session. For example, memory was the focus of one session. However, reference was continually made back to previously covered topics. For instance, when demonstrating strategies to use when reading, the information presented on how memory works was discussed again. Likewise, when exploring motivation, reference was made to the material covered on setting goals. Across the sessions, students attempted a variety of activities as individuals, in pairs, or as a whole group. Typically, many of the strategies were discussed and modelled firstly by the session facilitator, after which the students themselves practised the strategies.

To encourage reflection, we employed a selection of the narrative stimuli prepared by Freda et al. (2012). Specifically, we chose to incorporate the metaphors, vignettes, journal writing and role play tasks, used in the Narrative Mediation Path training protocol developed by these researchers. Examples of the types of narrative based tasks can be seen in Table 2.1.

One of the advantages of the narrative stimuli such as the vignettes is that the stimuli depict everyday events that all of the students can readily identify with. As such, the narrative stimuli often functioned as a vehicle to initiate discussions which all of the group members could contribute to. Furthermore, the small group setting in which students had become familiar and comfortable with one another presented an ideal opportunity to discuss these issues in an open and unbiased environment.

2.2.3 Phase three – Post-training evaluation and tracking academic performance

Given that this was a pilot programme, it was imperative to obtain feedback from the students as to areas where the programme could be improved. A questionnaire containing a number of statements to which participants indicated their level of agreement was completed. Statements were constructed to probe for any changes in the use of learning strategies (e.g., “since starting the programme I have actually tried to use some of the strategies that were shown in the sessions”) and to indicate to what extent the students found the programme useful (e.g., “usefulness of the programme for my university career/future life”). Several open-ended questions were also included on the questionnaire, for example, “what did you like/not like about the programme?” Finally, the participants also completed the MSLQ following the end of the sessions.

At the time of writing this paper, the examination period for students at NUI Maynooth is about to begin. As the examination results are released in the coming months, we will be gathering further data on the examination performance of the participating students.

3 Results

3.1 Motivated Strategies for Learning Questionnaire

3.1.1 Influence of the pre-training data on session content

High scores on the MSLQ (i.e., scores greater than 4) indicate that participants engage in these strategies regularly. Low scores (i.e., scores less than 4) suggest that the strategies are employed less frequently, or not at all. From the initial pre-training MSLQ scores, it was observed that very few of the students employed peer learning strategies (mean = 2.94). For example, given the question, “when studying for this course I often try to explain the material to a classmate or friend”, 11 of the 17 students reported that this was not true of them at all. Likewise, variation was evident in the use of help seeking behaviours. While nine students reported frequently asking other students to explain unfamiliar concepts to them, conversely, only four of the students scored above 4 in response to the question “I ask the instructor to clarify concepts I don’t understand well”. Based on these initial observations, during the sessions, particular care was taken to highlight the benefits of help seeking and peer learning activities such as going to lecturer consultation times to seek clarification, or forming study groups to discuss challenging topics with other students.

3.1.2 Comparing pre-and post-training MSLQ scores

A series of paired *t*-tests were undertaken to explore if there were differences in the pre-and post-training scores for each of the scales included in the learning strategies subtest of the MSLQ. The results of these comparisons are reported in Table 3.1. From Table 3.1 it can be seen that 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.

Table 3.1 Change in MSLQ scores pre-and post-training.

Learning Strategies Scale	Pre-training: Mean (SD)	Post-training: 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. * $p < .05$, ** $p < .01$

3.2 Evaluation of programme

3.2.1 Impact and usefulness of sessions

As shown in Table 3.2, all of the students agreed or strongly agreed that they had attempted to use some of the strategies demonstrated in the sessions when studying themselves. Similarly, apart from two students who responded that they neither agreed nor disagreed, the remaining 15 students agreed or strongly agreed that they had made changes to their study practices following completion of the sessions.

Table 3.2 Self-reported changes in learning strategies (n = 17). Percentage of responses is shown in parentheses.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
This programme has given me ideas for different things that I might think about trying out when studying.	0 (0)	0 (0)	0 (0)	6 (35)	11 (65)
Since starting this programme I have actually tried to use some of the strategies that were shown in the sessions.	0 (0)	0 (0)	0 (0)	11 (65)	6 (35)
Since starting this programme I have made changes to the way that I study.	0 (0)	0 (0)	2 (12)	9 (53)	6 (35)

Table 3.3 Usefulness of training (n = 17). Percentage of responses is shown in parentheses.

	Extremely useless	Very useless	Quite useless	Do not know	Quite useful	Very useful	Extremely useful
Usefulness of programme in developing learning to learn skills	0 (0)	0 (0)	0 (0)	0 (0)	4 (24)	7 (41)	6 (35)
Usefulness of programme for my university career	0 (0)	0 (0)	0 (0)	0 (0)	5 (29)	3 (18)	9 (53)
Usefulness of programme for my future life	0 (0)	0 (0)	0 (0)	2 (12)	5 (29)	2 (12)	8 (47)

Students were also 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 3.3, for each of these three items, the majority of students 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.

3.2.2 Suggestions for improvement

From the initial feedback received, a number of points for consideration were raised. Firstly, students mentioned that they would like further follow-up sessions during the second semester. 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)”.

4 Discussion

Beginning in October 2012, we piloted a new programme that aimed to help students build their repertoire of strategies and skills that could be used to support their learning and studying, and in particular, to help them acquire skills to manage their own learning. Slightly under half of the students who participated in the programme had previously been unsuccessful in passing one of their course examinations.

Administering the MSLQ and talking to the students prior to the start of the programme helped us to identify areas to focus on in the sessions. Given that several participants obtained low scores on the help seeking scale of the MSLQ, a deliberate effort was made to talk about potential help seeking strategies during the sessions. It transpired that quite a large number of the students were unaware of the support services currently offered at the university, for example, supports such as the Academic Writing Centre. Within the sessions this opened up an opportunity to establish a group goal for each group member to attempt to go along to the next drop-in session at the Academic Writing Centre. To the current day, many of the students who took part in the programme still continue to visit this support service. Additionally, several students decided to arrange study groups after we talked in the sessions about the benefits associated with learning alongside other students.

Overall, rather than reiterating practices that the students reported engaging in already, we tried to promote strategies that the students appeared not to be adopting, especially those strategies shown by previous research to be effective for learning (e.g., using questions, see Campbell & Meyer, 2009). The initial data helped us to tailor the sessions more specifically to meet the learning needs of the participating students. Furthermore, when comparing the pre-and post-training MSLQ data, there was an increase in the frequency with which students reported using learning strategies associated with peer learning and help seeking. As mentioned above, strategies relating to these areas were emphasised in the sessions. The decision to focus on general learning strategies rather than subject-specific learning strategies resulted mainly because all of the participants studied different disciplines. Notably though, many of the students requested greater inclusion of such subject-specific strategies. Research has highlighted the importance of helping students to acquire a combination of generic and domain-specific learning strategies that can be used 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 try to incorporate more subject-specific learning strategies.

Although the programme is exploratory and small in scale at this stage, the lack of a control group is a recognised limitation. However, we hope to be able to further test the efficacy of the programme with a greater number of students and incorporate a control group. Similarly, the disadvantages associated with self-report measures are clearly identifiable. Questions remain as to how accurate the self-report data that we collected is. Certainly, it is possible that the students may have been reluctant to respond honestly on the questionnaires that

they were not using some of the strategies, particularly if they felt that they should be using these strategies. In addition, it is difficult to determine whether the length of the training is sufficient enough to yield any real gains in the academic performance of the participants, or indeed, any long-term changes in their study behaviours. Aside from the post-training questionnaire data, the students did discuss their attempts to employ some of the strategies and techniques introduced in the sessions into their own studies. It would be useful to have further quantitative measures of this, not only in the immediate aftermath of the programme, but also over a longer period of time. This is something that we hope to address when looking at the follow-up stages to the programme.

References

Amalathas, E (2010) *Learning to learn in further education: A literature review of effective practice in England and abroad*, CFBT: London

Boekaerts, M & Cascallar, E (2006) How far have we moved toward the integration of theory and practice in self-regulation? *Educational Psychology Review*, 18, pp 199-210

Campbell, J & Mayer, R E (2009) Questioning as an instrumental method: Does it affect learning from lectures? *Applied Cognitive Psychology*, 23, pp 747-759

Christie, H, Munro, M & Fisher, T (2004) Leaving university early: Exploring the differences between continuing and non-continuing students. *Studies in Higher Education*, vol 29, no 5, pp 617-636

Drew, S (2001) Student perceptions of what helps them learn and develop in higher education. *Teaching in Higher Education*, 6, pp 309-331

Freda, M, Esposito, G, Martino, M L & Monteagudo J (2012) *Narrative learning for disadvantaged students: A model for intervention in higher education*. Paper presented at the ESREA Conference, Odense, Denmark

Gettinger, M & Seibert, K (2002) Contributions of study skills to academic competence. *The School Psychology Review*, 31, pp 350-365

Glogger, I, Schwonke, R, Holzäpfel, L, Nückles, M & Renkl, A (2012) Learning strategies assessed by journal writing: Prediction of learning outcomes by quantity, quality and combinations of learning strategies. *Journal of Educational Psychology*, vol 104, no 2, pp 454-468

Hattie, J, Biggs, J & Purdie, N (1996) Effects of learning skills interventions on student learning: A meta-analysis. *Review of Educational Research*, 66, pp 99-136

Hofer, B K & Yu, S L (2003) Teaching self-regulated learning through a "learning to learn" course. *Teaching of Psychology*, 30, pp 30-33

Hyland, A (2011) *Entry to higher education in Ireland in the 21st century*, available at: www.hea.ie/files/files/file/News/1335_HEA_Conference_01.pdf (last accessed 01 May 2013)

Kitsantas, A, Winsler, A & Huie, F (2008) Self-regulation and ability predictors of academic success during college: A predictive validity study. *Journal of Advanced Academics*, 20, pp 42-68

Kornell, N & Metcalfe, J (2006) Study efficacy and the region of proximal learning framework.

Journal of Experimental Psychology: Learning, Memory and Cognition, 32, pp 609-622

Masui, C & De Corta, E (2005) Learning to reflect and to attribute constructively as basic components of self-regulated learning. *British Journal of Educational Psychology*, 75, pp 351-372

Moon, J (2004) *A handbook of reflective and experiential learning: Theory and practice*. London: Routledge.

Pintrich, P R (2000) The role of goal orientation in self-regulated learning. In M Boekaerts, P Pintrich & M Zeidner (Eds.), *Handbook of self-regulation*, pp 451-502, San Diego: Academic Press

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

Pressley, M, Yokol, L, van Meter, P, Van Etten, S & Freebern, G (1997) Some of the reasons why preparing for exams is so hard: What can be done to make it easier? *Educational Psychology Review*, vol 9, no 1, pp 1-38

Richardson, M, Abraham, C & Bond, R (2012) Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138, pp 353-387

Snowman, J & Biehler, R (2006) *Psychology Applied to Teaching*, Boston: Houghton Mifflin

Tuckman, B W & Kennedy, G J (2011) Teaching learning strategies to increase success of first-term college students. *The Journal of Experimental Education*, 79, pp 478-504

Virtanen, P & Nevgi, A (2010) Disciplinary and gender differences among higher education students in self-regulated learning strategies. *Educational Psychology: An International Journal of Experimental Educational Psychology*, vol 30, no 3, pp 323-347

Wingate, U (2007) A framework for transition: Supporting 'learning to learn' in higher education. *Higher Education Quarterly*, 61, pp 391-405

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: Wadsworth, Cengage Learning

Zimmerman, B J (1998) Developing self-fulfilling cycles of academic self-regulation: An analysis of exemplary instructional models. In D H Schunk & B J Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice*, pp 1-19, New York: Guildford Press

Zimmerman, B J (2008) Investigating self-regulation and motivation: Historical background, methodological developments and future prospects. *American Educational Research*, vol 45, no 1, pp 166-183