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Developing academic literacy through self-regulated online learning

Emmaline Lear, Linda Li and Sue Prentice

University of Canberra, Canberra, Australia

Abstract

This study explores the self-regulated learning (SRL) experiences of international students in developing English language academic literacy essential for successful transition to university. The participants in this study were a small, diverse group of first year undergraduate students who sought academic support from the Academic Skills Centre at an Australian university. They were given the opportunity to independently access an online program, Study Skills Success, over the duration of one semester to develop their academic literacy in English. Data for this study were collected from a pre- and post-program questionnaire, interviews, a focus group discussion, and reflective online learning logs. These sources gathered information regarding the participants' motivation and attitudes, their online learning experiences and strategy use, and the perceived benefits of SRL online. The findings from this study have implications for supporting the transition of first year students to university by developing essential academic skills through independent online learning.

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Introduction

The first year of university is a crucial time for all students, as it requires the development of new ways of thinking, learning and communicating. Students can take a long time to adjust to life as a university student and a significant percentage drop out during the first year, making the first year a high-risk period and a crucial time for retention (Kift, 2005; Kift & Nelson, 2005). It is therefore important for all students to develop effective study skills and engage academically during their first year of study (Kift & Nelson, 2005; McIntyre, Todd, Huijser, & Tegan, 2012). This transition period is particularly difficult for international students from a non-English speaking background (NESB), and research on the academic adjustments of international students has revealed a number of challenges these students experience at Australian universities (Ballard & Clanchy, 1997; Cameron & Kirkman, 2010). For example, students need to make adjustments to a new language and culture, as well as to different teaching and learning pedagogies in a new academic environment (Wang & Li, 2008). Indeed, of foremost concern for international students is their development of academic skills and the English language, which should be supported from the outset, and throughout their studies.

With growing student diversity and international student participation in Australian education, universities have a growing responsibility to support student transition to university study, including international students. The Tertiary Education Quality and Standards Agency (TEQSA) iterates the importance of these responsibilities in the Higher Education Standards Framework (Threshold Standards), and highlights that “Successful transition into courses of study is achieved through orientation programs that are tailored to the needs of student cohorts and include specific consideration for international students adjusting to living and studying in

Australia” (TEQSA, 2015, p. 3). While there are effective orientation programs for entering students that assist with the transition to higher education (e.g. Baird & Boin, 2010; Gill, Sidoryn & Straschko, 2014; Nelson, Smith & Clarke, 2012), flexible and convenient online programs may be preferable for these non-traditional student cohorts (Kim, Kwon, & Cho, 2011). Though more research is needed on how to use innovative and flexible approaches to support the transition of international students to university study. In addition, to make effective use of technologies in supporting student learning, there is the need to enhance our understanding of the students’ online learning experiences, the difficulties the students encounter, the strategies, or approaches, they use and their learning outcomes. Despite the increasing popularity of online learning (Kahu, Stephens, Leach, & Zepke, 2013), it is important to investigate the ways in which students can make the best use of online programs by learning independently to develop academic literacy and English language essential for effective studies in the disciplines. With a deeper understanding of how students learn, we will be better equipped to make informed choices about which technologies to use and how to support students from the outset and integrate these effectively within the curriculum (Ellis & Goodyear, 2010; Fasso, 2013).

This paper will make a contribution to this need using self-regulated learning (SRL) as a basis for investigation of first year international students and their experience of using an online learning program to develop academic skills. The SRL project had three main aims: 1) to examine the SRL experiences of first year international students using a licensed online program *Study Skills Success* (Clarity English, n.d.); 2) to assess the value of using an online program to develop the English language and academic literacy of international students for effective participation in disciplinary studies; and 3) to explore effective

ways in which online tools can be used to support student learning.

Self-regulated learning

The social cognitive perspective of SRL provides a suitable framework to support international students' language difficulties and academic literacy skills development. SRL focuses on the independence of the individual learner. That is, SRL stresses the importance of learners assuming personal responsibility for the development of knowledge and skills and being active participants in the learning process to become masters of their own learning (Zimmerman & Schunk, 2001). In that way, SRL is an active and constructive process where learners develop the skills to "control their thoughts, feelings and actions in order to achieve academically" (Cassidy, 2011, p. 989). In less structured environments, other key aspects of the SRL process identified in the research include motivation, goal setting, SRL strategies, self-monitoring, and self-reflection (Kitsantas & Dabbagh, 2011; Zimmerman, 2002). But learners need the components of "self-awareness, self-motivation and behavioural skills to implement that knowledge appropriately" (Zimmerman, 2002, p. 66). In other words, learners who participate in an active SRL process - motivationally and behaviourally - enhance academic achievement (Zimmerman, 2002).

Self-regulatory behaviour, however, needs to be developed over time (Biemiller, Shany, Inglis, & Meichenbaum, 1998). Biemiller et al. (1998) suggest a three stage developmental process whereby, before reaching a level of mastery or internalisation, learners progress from being regulated by others; that is, they progress from being dependent on instruction and guidance from a teacher to being able to perform the task with limited guidance. Zimmerman (2000) also proposed a three stage cyclic process for academic learning. The first phase is the forethought phase which requires students to identify goals and self-

beliefs in relation to the intended task. In the performance, or second phase, students endeavour to successfully achieve their goals using selected strategies and monitor their performance. During the self-reflection phase, or the third phase, students self-evaluate and assess future action in relation to the first phase of the model. Kitsantas and Dabbagh (2011) add that students engage in a cyclic feedback loop until they achieve their goals.

Zimmerman's theoretical framework (2000) is used in this study to investigate SRL as this model of self-regulation can also be applied to the online environment. Kitsantas & Dabbagh (2011), for example, demonstrate use of the framework to direct student learning toward a desired outcome. By using social media to support SRL in personal learning environments and in the first phase, the students wrote an online journal or blog which allowed them to set learning goals and plan for course assignments and tasks. In the process of achieving these goals, and with the comment feature activated, the instructor and peers provided reflective feedback to support and promote the SRL activities reported by the students. This example shows that online education can be used as an interactive and communicative process whereby students share ideas and co-construct knowledge (Lai, 2011). In fact, the social nature of the online environment may allow the learner to more easily progress through the three stage process of SRL and become more confident in developing, sharing and testing self-regulatory habits with others (Kitsantas & Dabbagh, 2011).

Self-directed learning

The sharing of SRL strategies may also enable academically capable participants to become more self-directed and self-initiate processes that also do not rely or involve others. Self-directed learning (SDL) is a concept that emerged in adult education during the 1970s and 1980s. According to Saks and Leijen

(2014), SDL is a process where not only individuals are competent, willing and able to prepare, execute, complete and manage their own learning activities but also individuals define the learning task. In contrast, a teacher may also guide this process through the practice of self-development and achievement in SRL (Loyens, Magda, & Rikers, 2008). In other words, a self-directed learner is able to self-regulate, but a self-regulated learner may not self-direct (Saks & Leijen, 2014). The independent nature of SDL reflects a skill that is increasingly considered important in e-learning (Saks & Leijen, 2014) as learning online is more than a means to access information.

Online learning also has the potential to enhance the intellectual quality of learning environments and outcomes significantly (Garrison, 2009). Online learning provides a flexible space by bridging the time-place gap that traditional learning creates, allowing greater access and flexibilities for students. E-learning programs can assist this process if they incorporate effective pedagogy, including personalised learning paths that integrate interactive nonlinear access to information to self-directed learning in online communication environments (Liaw & Huang, 2013). In this regard, SDL is a key factor to be considered in the online program design process and can be embedded into the design of content, learning tasks and activities. In this way, learners may be encouraged to be self-directed and to take responsibility for their learning, and allowed to assume greater control of monitoring and managing learning (Reinders, 2010). That is, by self-directing their own learning online, students can develop their own learning and monitor and manage the cognitive and contextual aspects of their learning. By adopting a SDL perspective that incorporates an SRL framework to understand online learning, researchers may explain why and how learners spend time, talent and energy to improve performance, retention and mastery of, in this case, academic literacy skills.

Methodology

Both quantitative and qualitative data were collected in this study. The data of this study consisted of learner usage statistics of *Study Skills Success* (Clarity English, n.d.), a pre- and a post-program questionnaire, reflective online learning logs (ROLLs), a focus group discussion and individual interviews. The procedure for this study included the following steps. Following the model articulated by Zimmerman (2000), students chose an online unit to study. Each *Study Skills Success* (Clarity English) unit begins with a video introduction simulating a classroom situation where a teacher explains a challenge that learners will face. Based on the unit content, students set their own goals using ROLLs. The unit then takes the learners through a series of teaching points and interactive activities, helping them to develop the skills and strategies needed to meet this challenge. Next, the students are asked to complete open exercises to demonstrate learning and competence; finally, they reflect on the achievement of their stated ROLL goals and record their responses.

Participants

The participants in this study were a small group of 20 first year undergraduate students who sought academic support from an academic skills centre at a multi-campus university in Australia's capital region in Semester 2, 2014. They all attended Grammar and Writing workshops and were interested in improving their English language and academic literacy. The majority of the participants were aged 20 to 29 years, but there were also mature aged students from 30 to 50+ years involved in the study. These students came from diverse cultural and linguistic backgrounds, including Aboriginal English, Bahasa Indonesia, Chinese, Dzongkha, Garwan, Hindi, Korean, Macedonian, Marathi, Pilipino, Telingu, and Vietnamese. The students were also enrolled in a range of disciplines, including

Arts & Design; Business, Government & Law; Health; and Education, Science, Technology and Mathematics. The students participated in this study on a voluntary basis and were given the opportunity to independently access a licensed online program *Study Skills Success* as part of a free trial for one semester.

Data instruments

The online learning program

The program used in this project is *Study Skills Success* (Clarity English, n.d.), a licensed interactive online program designed by Clarity Language Consultants Ltd, which specialises in the design and development of educational language software (see www.clarityenglish.com). *Study Skills Success* provides a valuable introduction to the academic skills required of university study. The program consists of 10 units covering essential academic literacy skills, strategies and resources. The program, for example, targets the development of academic reading, research, writing, oral and visual communication, as well as developing students' ability to improve grammar, broaden their vocabulary and enhance their independent learning capacity. *Study Skills Success* is a highly interactive program providing activities with self-monitoring in addition to extension activities and links to sites of general academic interest.

The students' use of the online program was monitored and summarised by a built-in function of *Study Skills Success*. Such breakdown statistics provided a general picture of how the group of students used this online program and details about how much time the students spent on the entire program, on each unit, and in each month during the six-month period. Because the free trial obtained from Clarity did not include individual learner tracking functions, the statistics available pertained to the group as a whole rather than individual students. This was a limitation in the

data analysis as we could not determine individual usage and needed to generalise usage results to the whole population.

Pre- and post-program questionnaire

Participants completed a questionnaire at the beginning of the program. This questionnaire gathered information about the students' motivation, attitudes, and online learning experiences. In particular, students identified their specific learning goals for the development of important academic skills in one semester. They also reported on the strategies they would use to improve their own familiarity with the academic skills essential for writing. Another questionnaire was completed at the end of the program; this provided information about students' online learning experiences using *Study Skills Success*. This questionnaire focused on what students gained from using this online program in response to their learning goals, the strategies they used and the challenges they encountered.

Reflective online learning logs

ROLLs were provided to all twenty participants to record their learning on a regular basis. In essence, the ROLL was a tool which facilitated ongoing goal setting, self-motivation, monitoring and reflection that mirrored the three stage cyclic process proposed by Zimmerman (2000) and the action learning framework adopted by Lear (2012). In other words, this online learning template provided students with the opportunity to identify their specific learning goals for each unit, to summarise the SRL activities undertaken and to record the time spent on each unit. In addition, open space was provided for students to write freely to reflect on their learning experience with a particular unit of *Study Skills Success* and propose future action in relation to their original proposed goals.

Focus group discussion

After completing the online learning program *Study Skills Success* (Clarity English, n.d.), six students volunteered to participate in a focus group discussion and provide additional details of their motivation and attitudes towards online learning, their online learning goals and their strategies used to achieve these goals. Focus group research involves a planned discussion using both open- and closed-ended questions with a selected group of individuals to gain information about their views and experiences of a topic (Stewart & Shamdasani, 2015). Focus group interviewing is particularly suited for obtaining several perspectives about the same topic and usually conducted with a small group to generate rich and valid discussion but not so large that some participants are left out. The students who participated in the focus group discussion in this study volunteered on the basis that they were available at the nominated session time. Topics of focus included the importance of developing skills for critical thinking, reading, academic writing and effective communication. The focus group discussion was recorded, transcribed independently by a research assistant and checked by the researchers to

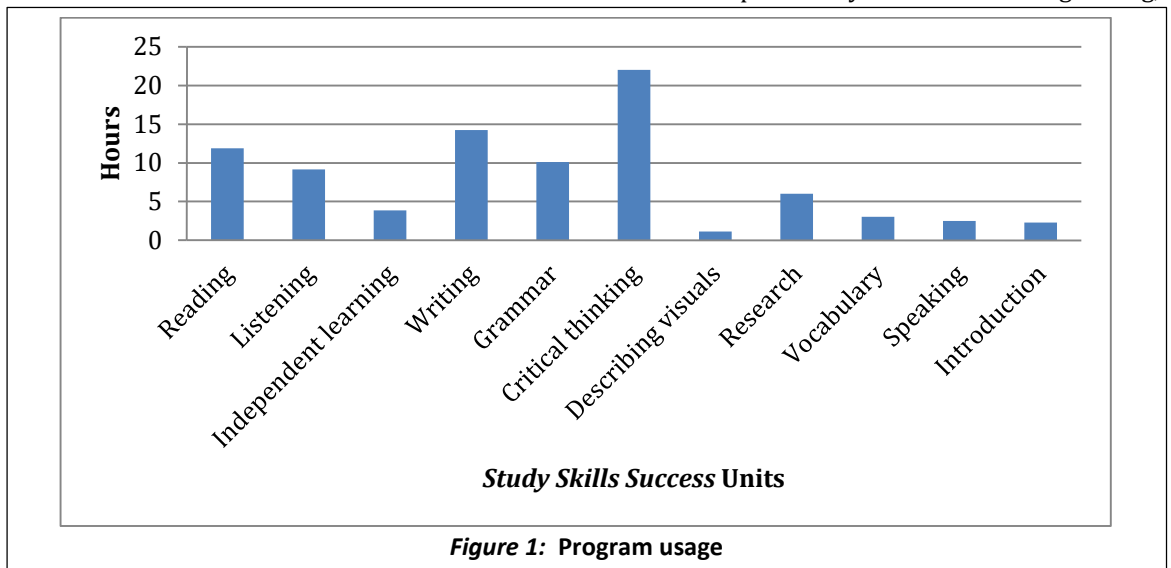
ensure the accuracy of the transcription. The limitation of this research method lies in the ability to generalise findings to a whole population, mainly because of the small number of participants and the likelihood that the participants may not be a representative sample.

Semi-structured interviews

Five students from the focus group discussion also volunteered to participate in a 10-minute semi-structured interview to provide in-depth information and clarify outstanding issues arising from the questionnaires and their group responses. In particular, students discussed their online learning experiences, and the benefits and challenges of *Study Skills Success* and online learning in greater depth.

Data analysis

Qualitative data collected from this study was examined using thematic content analysis (Lichtman, 2013), which consisted of a generic approach to coding, including attribute and descriptive coding as well as coding for patterns. Further analysis included sifting, sorting, and identifying key concepts from raw data. Deeper analysis involved organising,



categorising, interpreting and naming concepts (Lichtman, 2013). This study received ethics approval and was grounded in ethical practice and research principles, including recruitment of participants, participation, data collection procedures, anonymity and data storage.

Results

Self-selecting units for study

Results for the usage of *Study Skills Success* showed that the students studied all ten units of the online program. The students chose the units they wanted to study and how much time they would spend on this online program. However, as illustrated in Figure 1, some units were more popular than others. The units Critical Thinking (22 hours), Writing (14 hours), and Reading (12 hours) were the most used while the units Describing Visuals (1 hour), Speaking (2 hours), and Vocabulary (3 hours) were less well used.

Perceptions of online learning using Study Skills Success

In this case, the student experience of online learning changed over the semester. Students experienced a change in their learning ability in relation to academic skills, their level of

confidence, and a change in their attitude to online learning. At the beginning of the semester, the students' perceptions of themselves as online learners ranged from *very* to *somewhat experienced* as shown in Figure 2. The majority of learners, (42%) however, perceived themselves to be either *somewhat experienced* or *inexperienced* with online learning. When asked to use one word to describe how they felt about online learning at the beginning of the study, they used words such as "hopeless", "illiterate", and "first time trying" which reflected their inexperience, whilst also using expressions such as "independent", "easy", "interesting", "a must-learn" and "exciting" which reflected a generally positive view of online learning.

This view changed over the semester, however, as the participants grew in their experience of online learning, in using the program and developing their academic literacy. At the end of the semester, the majority of the students perceived themselves to be *experienced* (42%) or *somewhat experienced* (33%) with online learning. The students were more inclined to describe online learning as "convenient", "important", "effective", "helpful but time-consuming", "fun and flexible". The participants also observed that the program included "a wide range of helpful information" that

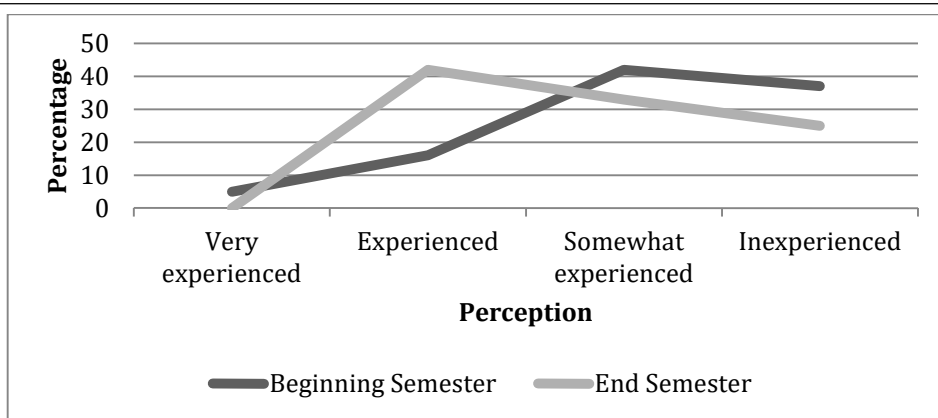


Figure 2: Student perceptions as online learners

motivated them to study. The students commented that “it is a resource that everyone should know about”. Results from the interviews also showed that the participants would recommend the program because “the level was just right” and that “it targeted information needed to complete the [assignment] task” and they could “then apply it to the discipline”. One participant commented on the flexibility of online learning:

It made it possible to learn online and I liked the games or the way they challenged me. I didn't care if I was wrong when answering questions because I could go back and think about my answers and correct them.

Self-regulated online learning skills

Learners realised the value of and committed themselves to learning online. This, in turn, positively influenced student engagement and learning outcomes. One factor which was a major contributor to the students' success in improving their academic literacy skills through the use of the online program *Study Skills Success* was the extent to which the students developed their existing range of learning strategies, and added and prioritised other strategies. The questionnaires showed that, to achieve their learning goals, students had relied on strategies such as self-motivation and positive thinking, and developed additional strategies such as information-seeking and obtaining feedback. Interestingly, by the end of the semester, the students found time-management, study plans, memorisation, goal-setting, evaluation and help-seeking activities less important than at the beginning of the program. From the correlating results from the ROLLS and the focus group discussion, it seems that the variety of activities embedded within the program was motivating and easy to understand. Following Zimmerman's SRL framework exemplified in the ROLLS, the students had set clear weekly goals to develop specified skills and monitored their progress in

achieving these skills. However, when they reached the end of the unit it was clear that further practice was needed to master the skills and attain the confidence needed to be able to successfully transfer the skills to their academic assignments. On reflection, the students noticed improvements in their time-management skills as well as improvements in their academic literacy. This included improvements in reading and writing skills, English language skills, note taking skills, and research and referencing skills. Planning and organisational skills were also enhanced. For example, one student who felt that she was better able to plan and organise her studies made the following observation:

This is the first time to study in Australia using English in an academic style so I don't know how to organise my academic studies, writing and reading. Based on the tips or resources [from *Study Skills Success*], I planned and organised my learning. The tips were very good and helped me to organise my study.

Development of academic language and literacy skills

Generally, the students were highly self-motivated to use the program *Study Skills Success* although for different reasons. For example, one student who was inspired to improve her English skills expressed the reasons for her self-motivation in using *Study Skills Success* as follows: “My English skills were inadequate and I wanted to improve myself. On my own it was too hard so some of the modules were helpful”. Results from the focus group discussion also revealed that after using the program for six months, students had a better understanding of and improved ability in academic literacy. Importantly, the results also suggest that students had developed essential skills in critical thinking, reading, writing, research and grammar. In other words, students had learned to think about what was important in their studies and improved their

approaches to assignments. As one student confirmed:

The exercises were a good repetition of things. I learnt about research and note-taking in lectures, tutorials and ASC workshops in the last 4 weeks. [The online program] helped me to fill some gaps I had and made some aspects clearer to me.

Responses from the ROLs, the focus group discussion and the interviews also confirmed the students' view of the importance of critical thinking at university. In line with Moore (2015), to critique a text students must have relevant and sufficient content knowledge. They also need literacy and language skills to be able to respond to not only the structure but also the content of the text. Academic literacy and language proficiency are linked to the ability of the students to understand (receptive) and use (expressive) language in an academic context. Such skills are essential for the execution of critical thinking. The students developed essential critical thinking skills through *Study Skills Success* in terms of understanding the argument, evaluating evidence, recognising persuasion techniques and avoiding plagiarism, all of which are components of the Critical Thinking unit. As one student explained during the interview:

I knew that I had achieved in terms of my results. I improved in critical thinking. When I arrived everyone was speaking about critical thinking and I wasn't sure what that was. I remember when I did an assignment I researched the different arguments on the topic and then found that I actually arrived at my own conclusion. Then, when I submitted it the tutor was very impressed. So, it was really, you know, when I look back on it, it was a result of Study Skills. I was very pleased.

Reading was another important skill that became a focus topic in the interview and the ROLs. Reading was considered a foundation skill needed to improve academic writing. One student reflected on her use of the Reading unit

and commented on how it helped her to learn to improve the ability to read academic texts:

Reading stood out, and research. It allowed me to focus more on completing the assignments because for reading, you don't want to read everything. Like for reading, it allowed me to target how I should answer the question and to retrieve the relevant information that I needed. I was able to apply those skills to my university studies...It is good, it saves time, it's flexible but it requires a lot of discipline.

Discussion

The students in this study were motivated to improve their academic skills in English through SRL using *Study Skills Success* (Clarity English, n.d.). What they chose to spend most time on studying with the online program reflected what they perceived to be important skills to develop for successful tertiary study. Their focus on critical thinking (22 hours), writing (14 hours) and reading (12 hours) encompasses core aspects of academic literacy. As the most studied unit, critical thinking is considered a core skill needed to succeed in university study. As Kutieleh and Egege (2004) state, "critical thinking and related areas such as problem-solving skills, argumentation and text analysis skills feature prominently in any university list of graduate attributes" (p. 3). Critical thinking is needed for both analysis and reflection, enabling students to improve decision-making and problem-solving skills.

Importantly, the concept of critical thinking is one that many students from Asian cultural backgrounds find difficult to grasp (Kutieleh & Egege, 2004). In agreement with the literature, one reason for this may be that language proficiency is needed in critical reading (Paul, 2004), for critical reasoning (Bauer, Homes, & Warren, 2006), and to express opinions and argue about topics in an academic context (Grosser & Nel, 2013). Critical thinking, among other things, requires developed academic language and literacy skills. However, results

from this study showed that students realised the importance of developing critical thinking skills and came to understand the pivotal role critical thinking plays in their university study. It is encouraging to note that these particular students not only recognised critical thinking as a crucial skill in academic writing, but also improved their own skills in this area. In particular, students self-reported improvements in understanding the argument, evaluating evidence, recognising persuasion techniques and avoiding plagiarism. While we cannot generalise beyond the sample, this improvement could be attributed to the problem-based learning approach of the online program, including a series of teaching points and interactive activities, helping learners to develop the skills and strategies they need to meet this challenge. The program also includes use of authentic and audio-visual materials, the systematic and methodical presentation of content, integration of feedback mechanisms, repetition of like tasks and model answers that reinforce the learning of academic skills. As students are expected to adopt a critical approach to their study at the tertiary level, the development of core critical thinking skills at the first year of university study is crucial to successful transition and participation in disciplinary studies. Likewise, the development of core skills in reading, writing and research helps first year students develop fundamental academic literacy, laying a solid foundation for their disciplinary studies.

This ability to direct their own learning independently using SRL strategies highlights that these students were already quite experienced and self-directed learners. Students are often not taught to use effective strategies for learning or encouraged to reflect on or self-assess their work. As Zimmerman (2002) emphasises, few are encouraged to establish goals or are provided with adequate guidance about choosing appropriate methods for learning. The novice, on the one hand, may rely on feedback and may fail to set goals and monitor their own learning, attributing failure

to fate. The expert, on the other hand, will manage the learning process and adapt to individual learning tasks by setting goals and self-selecting strategies to attain those goals. They will identify weaknesses and strengths of their own skills, strategies and methods of learning through a monitoring and evaluation process and redefine goals and self-regulate as necessary. This is true too for the online environment.

To maximise the benefits and manage the various challenges of online learning, the students in this study developed a range of strategies. Self-regulating strategies such as self-motivation, positive thinking, information-seeking and feedback combined, facilitated the learning processes as well as the achievement of learning goals (Wagner & Perels, 2012). Learning strategies affect the learners' selection, organisation and integration of new information, thus increasing efficiency in learning and preparing learners for more independent learning (Kiliç-Çakmak, 2010). In the SRL process, self-motivation is crucial as the individual learner's determination to take on responsibility and control of their own learning is linked to their learning achievements (Sharma, Dick, Chin, & Land, 2007). From the present study, it is apparent that the online learning program facilitated the students' use of learning strategies in the SRL process. Structuring the learning process can model effective strategies and can increase confidence for students to monitor their study behaviour and engage in SRL (Sierens, Vansteenkiste, Goossens, Soenens, & Dochy, 2009). In this study, the ROLLs were used to guide an action learning process and provide the participants with constructive feedback on their learning. This is supported by recent research on the use of an action learning approach through a variety of strategies to promote the learning process and enhance learning (Lear, 2013).

While results from this study cannot be generalised, the findings of the study agree that learning and motivational strategies are important for the development of SRL skills, even when developing academic skills. This is consistent with the findings of Kiliç-Çakmak (2010) who states that when students are able to engage in independent learning to develop essential skills for university study, they will be able to access the information they need, manage the learning process and transfer learned skills to alternative settings. However, in the absence of an instructor, learners must take greater responsibility for learning and control of their academic progress (Artino, 2008). To manage this process, and in line with Zimmerman (2000), students were encouraged to set specific learning goals, an important initial step in the SRL process. Self-efficacy increases as students experience successful goal attainment (Pintrich, 2000). As a result, goal commitment was enhanced and self-regulation of cognitive and motivational resources was engaged to facilitate further success. However, further research on this very process of setting goals may facilitate the development of strategy use, and learning or mastery of skills, the concomitant result of which can be transferal of these skills to other domains.

Conclusion

The first year of tertiary education is a critical time for retention and for establishing sound patterns of study and academic engagement. Successful transition in the first year improves retention, participation, completion and graduate standards. Given the diversity in the preparedness for university by students, it is important that any intervention provides students with the essential support structures and networks during the first year, particularly the high-risk first semester. Knowing how to manage one's own learning has become increasingly important to develop skills that are necessary to promote comprehension,

retention, and transfer of learning. The flexibility and accessibility of online learning provides an alternative approach for learning support. In addition, the online learning environment offers a space for students to engage in ongoing independent learning from the outset, and throughout their studies. Online programs can also provide flexible learning support for international students to develop academic skills in English. International students, however, need ongoing support and feedback to enhance motivation and success while developing both technical and academic literacy. Therefore, it is important to further investigate the ways in which students can use technology-supported learning communities, communicate and share ideas, and develop knowledge with their peers to achieve set goals. Making the best use of the online environment is important in the development of the English language academic literacy essential for effective studies in the disciplines. Factors such as motivation, goal-setting and planning, which are key factors contributing to the success of online learning, can also facilitate the use of effective learning strategies and support an active and engaging learning process conducive to successful study at the university.

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