The role-modelling of self-regulated learning strategies and skills through enrichment tutorials

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The article describes a tutor-led intervention based on self-regulated learning (SRL) principles carried out at a School of Accountancy in South Africa. Traditionally, lectures and tutorials in the School of Accountancy emphasise the academic content of the required courses. This approach tends to encourage students to become passive learners. In an effort to motivate students to take responsibility for their own learning, a pilot study was carried out to assess the impact of a tutorial system that would introduce students to SRL strategies and skills. This was done through the role-modelling of self-regulated behaviours by a specially selected tutor. A total of twenty one second year Management Accounting students took part in seven enrichment tutorials. The tutorials used the academic content of the course to demonstrate the cognitive, interpersonal and motivational attributes associated with SRL. Six months after the intervention, students reported being more confident in interacting with lecturers and peers. They were also implementing time management principles, and actively engaging with the material of their courses. The marks obtained in Management Accounting by the students in the pilot group were compared to that of their peers and were found to be significantly better in both the second year and third year of their degree. The intervention illustrates a way of transforming the educational experience of students by empowering them to be the main drivers of their own learning.

Introduction

Tertiary institutions are increasingly implementing student-centred approaches to teaching and learning in an effort to improve academic results and to prepare students to face their future careers with confidence (Cross, Shalem, Backhouse, & Adam, 2009; Leveson, 2004; Visser, McChlery, & Vreken, 2006). These approaches take a holistic view and focus on helping students to learn how to learn (Felder & Brent, 2009). One of the approaches that can be used to foster the holistic development of students is *self-regulated learning* (SRL) (Farrell, Alborz, Howes, & Pearson, 2010; Zimmerman, 2008). This paper evaluates a pilot study designed to transmit SRL skills and strategies to students enrolled in an introductory course in Management Accounting in a School of Accountancy in South Africa. The intervention comprised enrichment tutorials as opposed to standard support tutorials, in which only academic content is addressed. In the enrichment tutorials a tutor role-modelled how to apply the cognitive, interpersonal and motivational skills and strategies associated with SRL in the study of study Management Accounting. The tutorials were delivered by a tutor who was versed in the principles of SRL. This tutor was himself a repeat student who had failed the fourth year of his degree the previous year. However, at the time of the intervention he was one of the top students of his class. The turnaround in his performance was due to the implementation of SRL principles in his studies. He was therefore able to illustrate and communicate to the students how he transformed his approach to achieve success in his studies.

The research aimed to identify the factors that need to be taken into account when implementing interventions directed at introducing SRL in a university environment. It also tried to establish whether the intervention had a positive impact on the academic performance of the students who participated in it. Students provided written feedback during and immediately after the intervention. After six months, when the students were in the third year of their degrees, further feedback was obtained in the form of a group interview. The feedback of the students was content-analysed in terms of the cognitive, interpersonal and motivational dimensions of the SRL model. Regarding the cognitive dimension, students reported having become active readers as well as having better exam techniques. With regard to the interpersonal skills, students reported being more confident in interacting with lecturers and

taking an active role in tutorials. In terms of the motivational aspect, students reported better time management and planning, as well of having made use of mentors. The second and the third year marks in Management Accounting of those who that took part in the pilot study were compared to those of their peers using the Mann-Whitney U Test. This analysis demonstrated that the performance of the pilot group was significantly better than that of their peers for the two years. The article finishes by making a series of recommendations that may positively transform and enrich the learning experience of students, and allow them to become successful academic achievers and future leaders in their chosen careers.

Self-regulated learning

There has been extensive research carried out to identify the factors that affect the academic performance of students (Baard, Steenkamp, Frick, & Kidd, 2010; Du Plessis, Prinsloo, & Müller, 2005; Sadler & Erasmus, 2005; Sartorius & Sartorius, 2013; Stainbank, 2010). Whilst identifying the profile and the skills that successful students display is of great value, there is however a need to determine ways of helping students in the acquisition of these skills. The teaching of SRL strategies and skills is one of the ways in which students can be provided with explicit tools, that, if correctly applied, can help them to achieve good academic results (Ertmer & Newby, 1996; Robinson, 1993; Weinstein & van Mater Stone, 1993).

Cognitive psychologists such as Schunk and Zimmerman (1998) propose that students must learn how to assess the suitability of their approaches to learning. This is called meta-cognition, and involves planning, implementing and assessing the outcome of learning activities. If students are able to stand back and reflect on their own approaches to learning they will be able to adjust to the demands of their degrees, and this should in turn lead to higher graduation rates.

SRL is displayed by students who are confident that they will master the material they are studying. These students are aware of their strengths and weaknesses, they actively influence the external environment in which they operate and they know how to access resources that will help them with their learning process (Zimmerman, 1989; Zimmerman & Pons, 1986). SRL implies strong self-motivation and personal drive. Without self-motivation, students remain passive, or simply reactive to the demands placed on them by lecturers (Zimmerman, 2002). Self-motivation is in turn affected by the belief that the task at hand is achievable through one's own efforts. If students perceive learning goals to be unrealistic, this leads to demotivation and a reduction in the effort to achieve learning goals. Self-motivation also implies that students are able to set goals and monitor their progress towards these goals. Self-motivated learners do not wait for lecturers to set the learning agenda, they are able to determine learning outcomes and set out to achieve them with confidence (Pintrich, 2004). In learning environments where the lecturer is the main driver of the learning process and students are recipients rather than initiators of the learning process, it is not possible to foster SRL (Boekaerts, 1997).

Garrison (1997) stipulates that for learners to engage constructively in the learning process they need to make use of internal and external feedback mechanisms. These mechanisms allow learners to plan learning tasks and assess whether their learning goals are being achieved. He also advocates the importance of taking a collaborative constructive approach to learning. This approach places responsibility for learning on the learner, but at the same time encourages them to use social interactions to test and confirm the validity of the knowledge that they are acquiring (Vygotsky, 1978). Tutorials are ideal settings to foster collaborative learning environments in which learners can interact with their peers to assess their current level of knowledge, interrogate their learning strategies, and determine plans of action to be carried out on their own through self-assessment after the tutorials (Silén & Uhlin, 2008). For collaborative learning to take place in a tutorial environment the tutor must be able to guide the learning process by providing opportunities for and stimulating the inquiring process of the students (Chi, Siler, Jeong, Yamauchi, & Hausmann, 2001; Mezirow, 1985).

Knowledge and awareness of SRL skills and strategies are not sufficient for students to become self-regulated learners (Gynnild, Holstad, & Myrhaug, 2008). One of the most efficient ways to introduce

students to SRL is through the role-modelling and demonstration of cognitive, interpersonal and motivational skills by someone who is proficient in their use and who is able to transmit this knowledge. This approach makes explicit the strategies to be used and shows the skills that are involved in using these strategies (Zimmerman, 2008). SRL is therefore a tool that has the potential to transform the learning process of students and give them the tools that they need to succeed.

Description of the intervention

The intervention was structured so that the cognitive, interpersonal and motivational aspects of SRL could be addressed in a systematic way. A conscious effort was also made to address the Personal Attributes identified by the South African Institute of Chartered Accountants (SAICA) in its Training Programme Implementation Guide for the Conceptual Framework (SAICA, 2012). These Personal Attributes are characteristics that all prospective entrants into the accounting profession are expected to display. SAICA expects tertiary institutions to incorporate the teaching of these Personal Attributes in the curriculum of accountancy degrees. The areas addressed by the intervention are shown in Table 1.

Table 1: Structure and topics covered in the enrichment tutorials

Enrichment tutorial sessions	Skills and strategies addressed	SAICA personal attributes
Introduction	How to master meta-cognition	Is a life-long learner
Cognitive and technical focus	Relating theory to practice: effective reading skills	Identifies problems, conducts research, evaluates evidence and makes appropriate decisions
Cognitive and technical focus	Exam technique: context, analysis and academic argument	Communicates effectively in written format
Interpersonal and communication focus	Active learning: personal, peer and group work	Asks appropriate and probing questions to obtain required information
Interpersonal and communication focus	Seeking help: who to consult; when?	Communicates effectively in verbal format
Motivation focus	Personal responsibility: timetables and study environment	Takes responsibility for own development
Motivation focus	Use of mentors and self-awareness	Responds and adapts to change

The intervention consisted of seven enrichment tutorials. In the first tutorial, the underlying principles of SRL were explained and related to the critical issue of becoming a self-regulated learner. The next two tutorials dealt with cognitive approaches to learning. These sessions were organised around developing effective reading skills and exam techniques. Interpersonal and communication skills were explored in two of the tutorials. SRL stipulates that when students are able to drive the learning process they are more motivated to learn (Zimmerman, 2002). Active learning was encouraged by structuring the tutorial so that each student would try to answer unseen material first; they would then discuss it in pairs, and finally the tutor would facilitate a group discussion with the whole class. This approach allowed students to express their understanding of the issues discussed and it also allowed them to learn from each other. The tutor acted as a facilitator of the learning process by encouraging students to construct meaning as a group, and by guiding the discussion so that all relevant issues were addressed by the time the tutorial had finished (Felder & Brent, 2009; Vygotsky, 1978). The last two tutorials dealt with motivation and self-awareness. A key message that was put across to the students was that they should take full responsibility for their own learning. This entails a great deal of self-management and discipline (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). Students were encouraged to draw timetables for each week of the year, clearly identifying the time devoted to study for each subject. They were also made aware of good study habits. Special emphasis was placed on

helping the students to create their own support networks so that they could draw inspiration and support from mentors, peers and friends.

Data and method

The intervention took place in the second semester of 2012 and comprised students enrolled in the second year of their Bachelor of Accounting Science degree. The students who took part in the enrichment tutorials were the twenty one students who had been awarded a Thuthuka Bursary Fund. The Thuthuka Bursary Fund was established in 2005 by SAICA to increase the number of black accountants entering the accounting profession. The students awarded the bursary come from rural areas or "townships" and have studied in government schools. As most of these students come from economically challenged homes, the bursary covers the tuition fees as well as the living expenses of the students. In addition to being economically disadvantaged, these students are generally educationally disadvantaged as it is widely accepted that the great majority of the government schools in South Africa do not provide students with the necessary skills to tackle their university degrees with confidence (Jansen, 2011; Lam, Ardington, & Leibbrandt, 2011). This is corroborated by the fact that at present only 15% of all the students who are enrolled at tertiary institutions complete their degrees (DHET, 2013). The students selected for the pilot study are therefore representative of the overall student body currently enrolled at South African universities.

The course chosen for the intervention was Management Accounting as it is a subject that students encounter for the first time in the second year of their degree. Because students have to grapple with new concepts and techniques, the initial learning curve for them is therefore higher in this course than in their other second year course. This was deemed particularly important for the intervention as it was expected that students would need to adapt their study approach to deal with the challenges posed by the new course.

To assess the suitability of the enrichment tutorials in fostering SRL, a mixed methods methodology was chosen due to the nature of the social construct being studied (Creswell & Plano-Clark, 2011). This involved collecting and content analysing qualitative data, and conducting statistical tests on the marks obtained by the students. The qualitative data collected included written feedback and audio-recorded interviews. Students provided written feedback after three sessions as well as at the end of the intervention by answering open ended questions about what the tutor should stop doing, continue doing, and start doing. A semi-structured group interview was also carried out six months after the intervention took place to assess whether the students were applying the techniques and strategies that had been covered. The tutor was also interviewed separately after the intervention. All the interviews were audio-recorded and transcribed. The data was then content analysed in order to identify the underlying themes arising from the pilot study (Miles & Huberman, 1994).

With regard to the quantitative analysis, a series of Mann-Whitney U Tests were carried out using SPSS to assess whether the students who took part in the intervention obtained better academic results than their peers. The Mann-Whitney U Test was chosen as the distributions of the course marks were not normally distributed. The performance of the students in their second year assessments was analysed, as well as the performance of the students in their third year June exam, which was six months after the end of the intervention. The total number of students enrolled in the second year was 406, and the number of students in the third year was 467.

Results and discussion

In the following sections the intervention is analysed in terms of its cognitive, interpersonal and motivational components. The feedback received highlights the challenges that students found in trying to adopt new approaches to learning, as well as the benefits that they experienced once they started applying SRL strategies. The results from the statistical analysis are also presented.

Cognitive and technical strategies

The students found the advice they received regarding preparing for lectures particularly helpful. Most of them acknowledged that they did not pre-read prior to their lecturers. The problem they encountered was that of determining what was important. Comments were along the lines of:

> I get bored with reading things I don't understand, I prefer to post-read after lectures.

The tutor emphasised the importance of getting familiar with the key concepts that would be covered in the lectures as a way of becoming a self-regulated learner (Zimmerman & Kitsantas, 2002). During the course of the discussion, it became clear that students had never been shown how to make effective use of their textbooks. To close this gap the tutor role-modelled how he used the textbook in his personal study. He would read sections of the textbook and would then explain how the key concepts that were being explained related to the material covered in the lectures and in the tutorials.

In the feedback received from the students, one of them suggested that the tutor should continue:

> Reading some concepts that are necessary for us to know from the book and explain them to us.

In contrast, another student was critical of this approach. This student wrote that the tutor should stop:

> Telling us how things or answers are found, rather do the workings on the board.

This student exemplifies the attitude of a passive learner who does not want to personally engage with the material (Felder & Brent, 2009). From a tutor's point of view it is much easier to provide answers by showing the steps in the calculations, rather than having to explain the reasons behind the steps. However, in order to help students become self-regulated learners they need to be challenged to go deeper into their understanding of the subject matter (Topping, 1996).

The importance of reading skills was also emphasised when discussing exam technique. The problem here was that students were not giving sufficient attention to the scenarios when attempting the questions. This made it difficult for them to extract relevant information. The tendency was:

> To focus on the numbers and not pay attention to the text because I thought that Management Accounting was about numbers. I realised that I had to link the numbers to the information in the scenario.

In a study by Drennan and Rohde (2002), it was found that students who do not have a strong command of the English language have considerable difficulty in applying concepts to new situations. In order to help students realise the importance of reading and understanding scenarios, the tutor showed students how he read questions by going through examples with them. Active reading was also emphasised as a way of saving time during exams and tests. Students were encouraged to summarise paragraphs, cross out irrelevant information, and to highlight only what was relevant. Overall, students were satisfied that this approach was paying dividends by the time they gave their written feedback:

> My planning is better and has resulted in me using my time better in exams.

Interpersonal and communication strategies

In order to develop active learning principles students were given unseen questions in the tutorials. They worked through them individually first. After attempting the questions they discussed them in pairs and afterwards as a group. Most of the students found this approach beneficial, but two of them were critical of the peer and the group interaction. The students who disliked this approach questioned the benefit of discussing something with someone whose understanding they possibly doubted or mistrusted. This was exemplified by the following comment:

> I found it irritating working with other people. We both may be wrong at the same time, then you may be learning the wrong thing.

A reason for this reaction may be the desire to be told what to do rather than to have to work things out for themselves, which is precisely what active learning tries to encourage. In conducting tutorials which foster interaction between participants, tutors must be aware that some students will be quite critical of the process. To overcome this problem the tutor must have a clear goal in mind when conducting the discussion, so that the students are guided to the right conclusions. The discussions must have a purpose, and students must leave the tutorial having understood the outcome of the discussion (Silén & Uhlin, 2008).

During the group discussions the tutor encouraged students to participate by calling on all of them individually so that they all had a chance to contribute to the learning process. This however led to a negative comment from one of the participants:

> The tutor should stop pointing at people; we will raise our hands if we have answers.

This attitude shows resistance to be drawn into the group learning process and can also be construed as a defence mechanism because, as one of the students said:

> You are kind of scared of what other people are going to think.

When discussing these comments with the tutor, he fully identified with them as he himself had been at the receiving end of a very negative comment from a lecturer during a tutorial in his first year. As a result of this he had withdrawn and avoided any further interactions in the tutorials for that year.

The tutor also highlighted the importance of consulting with lecturers. For many students, having to consult is seen as a sign of weakness, and the general perception is that if the lecturer gets to know you, he or she will end up penalising you. During the group interview students mentioned that when it came to consultations, most of them never consulted with lecturers. They opted to consult with their peers first, and then with tutors. This demonstrates that at present there is a lack of trust of lecturers, and that many students prefer to work on their own rather than to consult, even if this takes longer and they may not fully get to grasp key concepts. This reality should inform the way lecturers interact with students so that they do not inadvertently create barriers, but consciously reach out to them (Hay, 2008).

Despite some resistance to participate, the overall perception was that the tutor should:

> Continue engaging the whole class in answering questions.

One student found it very useful because when working with others:

> You see how they see things. Maybe you missed something, and you can then improve on how you approach questions.

Working in pairs also helped them to engage later in the group discussions:

> You get confidence to speak in public after you speak to your colleague. He can back you up.

For other students, the main benefit they got from the group interaction was that they remembered concepts more easily:

> I am a verbal person, hearing someone talking directly to me helped me to understand and I never forgot.

These views fit within the social constructivist approach to learning, and highlight how peer interactions can greatly facilitate the learning process (Rogoff, 1990).

Motivational strategies

The tutor role-modelled to the students how he used mentors to keep him focussed on his studies. He encouraged them to create networks of people whom they could rely upon for support when they faced difficulties in their studies or in their personal lives. One of the students mentioned that, before exams, as a result of that advice:

> I call someone who believes in me, an older friend of mine. That person picks up your strengths and makes you believe in yourself.

With regard to the use of timetables there was a change in focus as students moved from second to third year. In their second year, most of them did not see the value of constructing timetables, or when they did make them, they did not follow them. Some comments from the students were:

> I couldn't follow my study plan, so I gave up on having study plans. Well, I couldn't implement it. I tried.

The students reported becoming frustrated when they did not meet their study goals and as a result saw their timetables as burdensome. The tutor pointed out to them that the timetables were not set in stone and that they should learn how to adapt them to meet their own needs. For some students this was the catalyst that encouraged them to start using timetables more effectively:

> I think that the timetable makes you feel bad for not doing something, so as soon as you have flexitime in your timetable you don't feel as bad. So it started working for me after that.

This student learned that if a task had to be delayed or replaced by another one it did not mean that she had let herself down. Students were able to discuss extensively with the tutor their own personal challenges and this served as a good opportunity for them to understand the importance of managing time effectively.

By the end of the first term of their third year all of the students acknowledged following timetables. Some used their timetables more as to-do lists, while others planned each day of the week in great detail. Students realised that the volume of work in their third year was such that unless they had a timetable, they would start falling behind quite quickly:

> This year was more of a shock actually. The volume of work, the time pressure. Things have changed because I have matured a bit. How I use my free time, how I approach my studies. You have to focus on what you are doing and don't let your mind wonder, and just make sure you get the job done.

As can be seen, the use of timetables is now enabling these students to cope better in their third year, even though initially they found it difficult to appreciate the value of such a system.

Academic performance

The academic performance of the twenty one Thuthuka students was compared to that of their peers using the Mann-Whitney U Test. The null hypothesis that was tested was that there was no significant difference in the marks obtained by the Thuthuka students and that of their peers in tests and exams. The assessments that were analysed were the second year test and final exam and the third year June Exam.

The results of the Mann-Whitney U Tests were as follows:

2^{nd} Year Test (p=0.006)
2^{nd} Year Exam (p=0.013)
3^{rd} Year Exam (p=0.019)

The results indicate that the Thuthuka students performed significantly better than their peers in the second year test (α=0.01), and in their second year and third year exams (α=0.05). The average results obtained by the students in the various assessments are shown in Figure 1. As can be seen, the Thuthuka students obtained higher average marks than their peers in all the assessments.

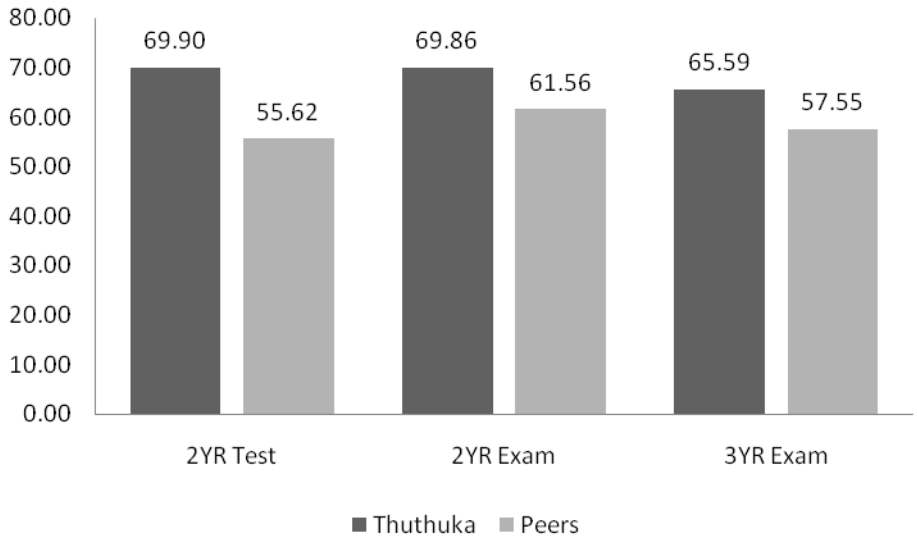

Figure 1: Average marks in tests and exams

It is not possible to attribute the performance of the Thuthuka students solely to the fact that they have attended the enrichment tutorials, but the fact that they have consistently outperformed their peers after taking part in the intervention means that they are better able than their peers to cope with the demands of this particular subject. Two comments from the students confirm this view:

> Management Accounting has been made easier for me and it is not a drag anymore.

And also:

> The tutorials have given me more clarity in what I need to do in order to do well.

Conclusion

The aim of the research was to evaluate a pilot study designed to foster SRL through role-modelling. This was done by measuring the impact of the intervention in terms of behaviours adopted by the students and the academic results that they obtained compared to their peers. Students found the enrichment tutorials beneficial as they were made aware of a series of strategies and skills to enable them to pursue their studies more confidently. However, it was also noted that some students were reluctant to make the necessary changes in behaviour that SRL requires. Tutors and lectures must be aware of this potential resistance to change as they design and implement learning activities in which students are encouraged to take responsibility for their own learning. Assessing learning needs, determining what learning strategies to use and implementing those strategies, that is, being meta-cognitive, can be daunting for students, especially if they are new to SRL. This transition can be made easier with the help of tutors who can explain to students the benefits of SRL and also role-model for them how to become self-regulated learners.

The enrichment tutorials provided not only the principles of SRL, but also provided students with a safe environment in which to implement them. The tutor was instrumental in creating this safe environment and in managing the learning process of the students through role-modelling. This approach to tutorials is transformative as it goes beyond the traditional approach of focusing solely on content. It is more demanding to implement as it requires highly focussed tutors that are able to stand back and allow students to interrogate problems by themselves and in groups, thus building their own

knowledge. The ultimate goal of this process is to increase the role of students in the management of their own learning. If this point is reached then students will achieve the goal of becoming successful life-long learners.

The intervention highlights ways of being innovative in the design and delivery of academic content while trying to engage students in taking responsibility for their own learning. This approach should empower learners in becoming academic achievers and successful professionals. Further research needs to be carried out to validate the findings of this pilot study and to determine effective ways of training tutors to become role-models in SRL behaviours. Once this is done it may be possible to make SRL principles accessible to larger numbers of students and thus prepare them to face their studies and their future careers with confidence.

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