Middle years students' use of self-regulating strategies in an online journaling environment

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ABSTRACT

This study investigated boys' capacity for self regulation in a Year 8 classroom at a regional secondary college in the state of Victoria, Australia. This was an exploratory descriptive study that sought to examine how the use of an online journal influenced students' capacity to adaptively react (Zimmerman, 2002) to self-determined knowledge about the effectiveness of their method of learning and set learning goals (Ames & Ames, 1989; Midgley, Kaplan, & Middleton, 2001). An online recording and online journaling space were developed by the researcher. The journal has been designed to be engaging for young adolescent male students as well as allowing students to set goals and reflect on how they can achieve those goals in an imaginative, non-threatening, and jargon-free environment. The study reported here aims to determine if through the use of this online journal students' capacity to extend their understanding of themselves as learners through the setting, monitoring and evaluating of personal learning goals can increase. These findings contribute to discussion about the important contemporary issue of students self regulation.

Keywords

Self regulation, Middle years, Student engagement, Online journaling

Introduction

Self regulation increases student motivation and engagement by enabling students to customize and take control of their own learning through conscious knowledge of effective strategies and choices (Zimmerman, 2002; Zimmerman, Bandura, & Martinez-Pons, 1992). It gives them opportunities to pursue preferences as well as strengths using an appropriate repertoire of tactics. This study attempts to improve student self regulation through the use of an online journaling website where the setting of goals is an important component. Goals can be seen as important factors in motivation and learning (Schunk, 2003), both of which are key components of self regulation.

There is now an extensive longstanding literature on student self regulation of learning, drawing on research from the 1980s and 1990s (Ames & Archer, 1988; Pintrich & De Groot, 1990; Schunk, 1990; Zimmerman & Pons, 1988). Self regulated learning is broadly defined by Boekaerts and Corno (2005) as the use of strategies to achieve academic growth and well-being goals. Pintrich and de Groot (1990, p. 38) made the compelling point that "student involvement in self regulated learning is closely tied to students' efficacy beliefs about their capability to perform classroom tasks and to their beliefs that these classroom tasks are interesting and worth learning". Pintrich and de Groot (1990) emphasize that students need to have both the 'will' and the 'skill' for learning gains to occur. Schunk (1990, p. 71) puts forward that "self regulated learning occurs when students activate and sustain cognitions and behaviors systematically oriented toward attainment of learning goals".

More recently, Dweck (2000; 2002) asserted that students may enable or constrain their capacity to self regulate learning because of beliefs they hold about their intelligence and the value of effort. She distinguished between students who view their intelligence as pre-determined, and who therefore view effort as superfluous, with students who believed that effort could lead to success. She considered that appropriate guidance and feedback by the teacher to students on the value of effort could have a positive effect on students' capacity to self regulate learning experiences.

An online recording and online journaling space was developed by the researcher (Campbell & Deed, 2007) and utilized in this study. The website is an Assistive eXtra Learning Environment (AXLE), which is a website that was initially designed to be engaging for boys in Grade 6 as well as functional in order to collect data relating to the study (Campbell & Deed, 2007, 2008; Deed & Campbell, 2007). However, in this context it will be used for Year 8 students. Unique aspects of the design included the use of images rather than text; capacity for each student to individualize their journal using images, colors and clothing for the AXLE avatar; a goal-setting and monitoring

cycle; screens to record the boys' affective, behavioral and cognitive engagement with specific tasks; and allowance for the students to upload work samples. Each student's journal was password protected. It was designed to be an interesting space for the young adolescent male students as well as allow the students to set goals and reflect on how they can achieve those goals in an imaginative, non-threatening and jargon-free environment.

Student participants were required to reflect on specific activities conducted in the classroom. Reflection can often be seen by students as an abstract idea that they perceived as irrelevant to their school life. The students were not explicitly told that they were reflecting, rather they were asked to report on their experiences by completing a series of questions. The online journal focused on the students' perceptions of their affective, behavioral, and cognitive engagement of their most recent classroom experience. It also provided an opportunity for the students to set goals and reflect on these goals weekly through the use of a question cycle that went for a period of four weeks prior to being repeated. It is acknowledged that this was a somewhat artificial goal-setting process. Rather than seeking to involve the boys in a process of goal related reflection, the process emphasized regularized thinking about how the boys' classroom behavior could be examined with reference to prior thoughts about possible improvements. In setting weekly questions it was hoped that the boys would start to see links between their goals and classroom behavior. This was thought to be a basis for further in-class work by the teacher.

Self Reflection

Students who use the AXLE online journal are able to self reflect in their own online space in their own time. Zimmerman (2002) states there are two main processes in self reflection. The first one is self evaluation and it "refers to comparisons of self observed performances against some standard, such as ones prior performance" (Zimmerman, 2002, p. 68), someone else's performance or even an absolute standard. The second phase "involves feelings of self satisfaction and positive affect regarding one's performance" (Zimmerman, 2002, p. 68). Zimmerman goes on to state that motivation is enhanced with increased self satisfaction. This study hopes to provide motivation, and in time self regulation to the student participants. In short, in this study, self reflection means thinking about one's own behavior and then being able to modify it accordingly.

Student Engagement

In Australia, there is national and international interest in re-engaging boys in education (Department of Education Science and Training, 2003). Interventions such as new pedagogies, middle years innovations, and curriculum policy redesign (e.g. Victorian Essential Learning Standards) all provide an environment where students are exposed to alternative approaches designed to engage learners.

Lack of engagement is particularly evident with students from lower socio-economic groups. Lokan et al. (2001), for example, argued that recent curriculum reforms have failed to address the obvious disadvantage of these students, and have not resulted in significant gains in engagement, especially in the middle years of schooling. McGaw (2004) claimed that Australia is performing worse than other developed countries in this regard and categorized Australia as high in quality but low in equity. In other words, while the overall student achievement of students is high, wide differences are evident between high and low achieving students. This lack of success seems evident even in schools taking significant action to address the relevance of the content, substance and type of set tasks, the validity of assessment and reporting regimes, and attempts to engage students through adapting inclusive pedagogies and new methods of student grouping.

Various factors may contribute to this lack of participation in schooling and learning. It is possible that these students lack confidence or motivation, are deficient in skills, or give up easily, do not see the relevance of schooling, are unaware of their difficulties, or feel they can succeed at school without effort.

This project is of particular significance as it addresses a need to provide teachers with efficient interventions to enable students to imagine and reconceptualise their learning behaviors. AXLE provides one such intervention as it may allow students to reconceptualise their learning behaviors through the use of not only the journal section, but also through the use of goal setting.

When students log into AXLE they are able to complete a journal. Part of the journal allows students to complete a section that is based on indicators for educational disengagement. These indicators for educational disengagement have been based on the work of Fredricks, Blumenfeld, and Paris (2004) who mapped the multiple definitions of the concept of engagement. The indicators used were: behavioral (following rules, adhering to school 'norms' and involvement in learning); emotional (motivation for learning, sense of belonging) and cognitive (sense of control over learning; use of learning strategies; adoption of a strategic approach to learning).

Student Goal Setting

One of the main foci of this research is the use of the goal setting section on the AXLE website. Schunk (1990) suggests that a goal is something that an individual is actually and consciously attempting to accomplish, while goal setting is where a goal is created and then modified if necessary. Students using the AXLE website will be setting a goal and attempting to accomplish it for it to be thought of as achieved. Goal setting is crucial to success and as schools spend very little time teaching students to focus it really should be introduced (Rader, 2005). Goal setting processes are integral to having effective student learning (Gillespie, 2002), perhaps through the increased persistence of a person who has set a goal (Locke & Latham, 2002). It has been suggested by Ames (1992) that students should be oriented towards mastery goals where the focus is on effort, not ability. Once children are able to have positive thoughts about themselves and their abilities they can be taught how to set both realistic and achievable goals (Szente, 2007). It is also important for students' goals to be realistic and attainable, though, they also need to be challenging (Schunk, 1990). Students perhaps do not necessarily see the relevance of their subjects and setting their own goals makes school appear more relevant.

A study by Page-Voth and Graham (1999) suggests that goal setting has been successful when used in regards to the writing process for middle years students. Their study suggests that improved writing performance can be linked to goal setting. Schunk (2003), suggests that students make a commitment to obtain a goal and then they are likely to compare their performance against the goals. This means that students need to remember their goal while performing the task. However, if a student develops a goal that takes a while to achieve they may lose track of that goal. The AXLE website assists in students being reinforced throughout the life of the goal so that they may be more likely to achieve it. Schunk (2003) elaborates that teachers may need to develop students' goal setting skills by using direct instruction.

Methodology

A case study approach was used for this research, focusing on one school site. The data collected has the advantage of being strong in reality, and allowing attention to focus on the contextually unique features (Cohen, Manion, & Morrison, 2000). Twenty Year 8 boys from this one regional high school participated in this study. The data collection period for this study was in the final school term in 2008. Due to time constraints it was not possible to interview all of the students, so eleven students were interviewed twice, once at the beginning of the study and once at the end of the ten week data collection period. The interviews were electronically recorded and transcribed. The data was then coded and analyzed for emerging themes. The limitations of this method were that explanations and possibilities can only be considered from the perspective of the classroom from the targeted students. The students were also given a student questionnaire to complete; however, due to timetabling issues only eight of the students completed it.

The school involved in the study uses a teacher advisory system, where the students meet with the teachers (and parents) twice a term. During each teacher advisory session the students can set up to three goals with the assistance of the teacher. The goals are then discussed again at the next meeting to see if they were achieved. As part of the online recording space there is a separate goal section, which allows the students to record one of these goals. The students then have the opportunity to go through a question cycle relating to their goal each week, thus allowing the students to reflect on their goal. Self regulation of the students learning is promoted through the use of this system.

This research hinges around the fact that the students will log into an online journaling website. This website was developed using an avatar, which became known as AXLE. The website was designed to be interactive and engaging for the students with AXLE 'talking' and introducing the website navigation to the students when they initially

logged on. AXLE 'explains' to the students they can change his clothes by clicking on some arrows and they can choose a different background at any time they wish. Each time the students log in they can change AXLE's clothes, hairstyle and what he is holding, which includes a skateboard, guitar, basketball and football. This is designed to be fun and engaging for the students. On the left hand side of the AXLE screen the students have several choices they can make. These include creating a journal, looking at previous entries, entering the goal setting section, or the fun stuff (only available after Week 4), dressing AXLE or changing the background screen. This AXLE screen is shown in detail in Figure 1.
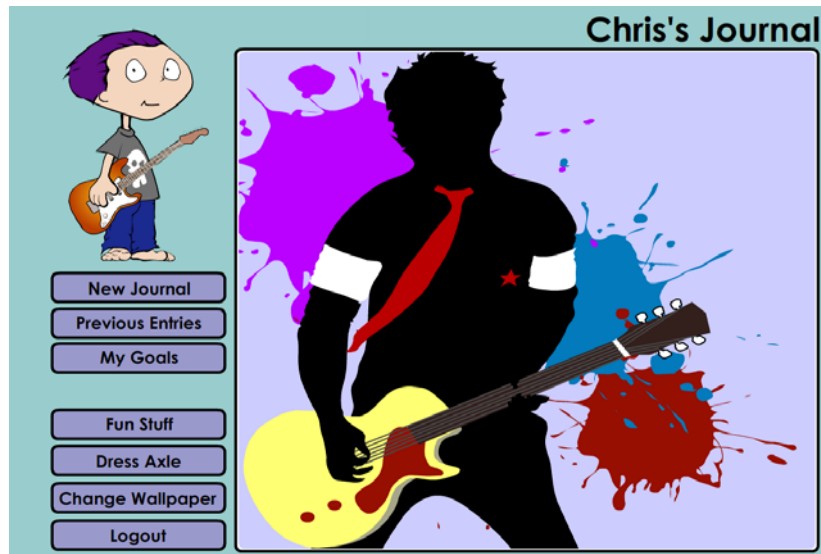

Figure 1. Students can set their own background and dress AXLE in the online journal

When the students click on the 'New Journal' button they can check one to five on a series of statements pertaining to their behavioral and cognitive engagement. There is also a screen to measure student's affective engagement where the students can check a face to describe how they are feeling. When the face is checked it is highlighted by a circle around the image. As many faces can be checked as the student wishes.

As described by Campbell and Deed (2007, 2008), the students were also able to change the background image. These backgrounds included a plain white area, football field, guitar guy, space, circus tent, a dragon, and basketball hoops. These backgrounds were designed after discussion with the boys regarding their local interests. They were meant to be engaging for boys, while the white background was for any students not wanting a 'busy' area.

The AXLE online journaling website requires password access by the students and researchers to enter. Another further restricted website allowed the researchers to access each student's journal entry and to view the work sample they can upload if they choose. This can be in the form of an online text reflection, a .jpg file or .wav audio file. Interestingly, the audio file option has never used by students. This is perhaps because the boys are not given access to the extra equipment needed to make the file. All uploaded files, along with the coded journal entries were then saved on a server for access by the researchers. This allows easy access by the researchers to the student data so that the students can then be interviewed with regard to their work sample and journal reflection. Students are informed the researchers have access to their journals when first introduced to the AXLE website.

As part of the online recording space there was a separate section where the students involved in the study could record a goal. This was a further development from research in previous years (See Campbell & Deed, 2007, 2008; Deed & Campbell, 2007) as it was determined that a goal setting section for AXLE would further develop students ability for self reflection, as is reflected in the available literature (Gillespie, 2002; Page-Voth & Graham, 1999; Schunk, 2003). The students set three goals as part of their meeting with their teacher advisor. They were then given the opportunity of recording one of their goals within the AXLE environment. The goal setting section goes through a series of question relating to their goal, with one question being asked each week, thus allowing the students to reflect on their goal. This is shown in Table 1, and as can be seen the questions are general in their nature so as to

allow the students to reflect on their individual goal, i.e. the questions are relevant to all students, regardless of their goal. If students log into AXLE a second time they are given a different question which also helps them to reflect on their goal. The students are also given the second question for subsequent visits for the remainder of the week, although students generally only log in once or twice. After a goal is entered into AXLE a first time, the goal is displayed on the screen in the goal setting section of AXLE for the students to see (and remember) each time they complete the question cycle. In this study, each question cycle was for four weeks with the cycle being repeated once during the school term.

Table 1. The goal setting section of AXLE has a question cycle

Condition	Week 1	Weeks 2/3	Week 4
Time	What will help you to achieve this learning goal?	How are you trying to achieve your learning goal?	How do you know if you have achieved your learning goal?
Frequency 2 or more visits per week	Why is it important to achieve this learning goal?	How will you know when you have achieved your learning goal?	What other learning goal could you set?

The students were informed by the teacher advisor that the learning goal had to be expressed as a learning behaviour. Students were experienced in setting goals through the teacher advisor program at the school and so were fairly advanced in their goal setting ability. This meant they were generally able to set relevant and achievable goals.

Results

There are three main themes which have been expanded on below. These were identified through the use of coding of the interviews. The themes are:
- AXLE was valued by the students for reflecting, and frequency of use for setting goals.
- AXLE was valued by the students for assisting with personal control and with future goal setting.
- Students felt that by using AXLE they were able to express private feelings safely.

Reflecting and frequency of use for goal setting

One of the themes that emerged from the results is the value of AXLE as a tool by the students for being a reflection tool, as well as a space for recording set goals. The students were able to use AXLE to set goals with one goal being set and then worked towards for four weeks. To assist in the students achieving this goal they were able to go to the goal space and answer a question each week pertaining to the goal setting question cycle (detailed above).

One student particularly appreciated AXLE's facility for setting and closely monitoring goals. He liked that when he set goals he can look back over them to make sure he is completing the goal. Another student used AXLE primarily as a tool for thinking back over his day at school.

Another student felt that AXLE helped him to achieve his goal of 'asking more questions'. This student stated AXLE "reminded me so then I just started to ask some questions for some things I didn't get". He had set this goal prior to having access to the AXLE program and was unable to achieve it. Through using AXLE he not only achieved the goal, but went on to set another goal which was "to get more involved in discussions". This student set the goal without any prompting from his teachers and was busy working towards achieving the goal. This suggests a great deal of self motivation and advanced goal setting skills.

When one student was asked if AXLE had helped him with his goal setting he replied:
> I thought it has cos [sic] it asked me a few questions to get me going and like really think about it instead of just yeah I'll do this soon and keep on putting it off.

This also suggests that AXLE has helped this student monitor and achieve his goals.

One student set a goal to improve his reading. In an interview at the end of the school term, this student told the interviewer that he did a bit of reading on the holidays when he had more free time and made this comment about his reading inside of school:

> **Student**: You can do a little bit of reading in English when you have some time to do it.
> *Interviewer: and have you noticed any changes in your ability to read or understand?*
> **Student**: Yeah as you read you sound more, even the punctuation and everything, you get examples of that throughout the book.
> *Interviewer: Excellent, sounds like you're becoming more confident and comfortable with words on pages.*
> **Student**: Yeah
> *Interviewer: Does AXLE help, or not help?*
> **Student**: Yeah it helps cos each week you come back and have a look over your goal and it reminds you to keep up with my [sic] reading.

This suggests this student is reading more and thus improving his reading. It also suggests that the AXLE website is assisting him to achieve his goal of improving his reading, though doing more of it. Students were able to focus on their goal of how to achieve it through the use of the question cycle provided in AXLE.

One student felt that AXLE assisted him to achieve his goal. He stated:
> Well I know in class and stuff you tend to lose focus with all the people talking. I find it hard to concentrate but with the goal setting, and stuff, you really sort of try and think of like you have your goal and you have like little branches coming off with little goals to help.

Although only eight students completed the questionnaire at the end of the school term, these students were positive in the way AXLE assists them with achieving their goals. The students were asked if they thought revisiting their goal in AXLE was important. Seven of the eight students thought that it was with the student who said that it wasn't recording that he could already remember it. From the seven positive responses comments included "so it reminds you of what you need to do to reach your goal" and "because I know I need to complete it", while another student recorded it was important to revisit AXLE "because you could think of ways to reach the goal". These responses are all supporting the interview data that suggests that the AXLE online journaling website assists students to reflect on their goal, be reminded of it and ultimately achieve their goal.

Assistance with personal control and with future goal setting

The second theme to emerge from the results is that AXLE was valued as being able to assist the students with personal control as well as with goal setting in the future. This is particularly suggested by one student who reflected to the interviewers that AXLE puts things into perspective which allows him some personal control over his class situation. He commented:
> I think it kinda [sic] puts some stuff into perspective, like whether today I've wasted too much time and not listened to the teachers rather than like arr [sic] and then some days you look at it and oh look I've done this and done this.

This student went on to say that when he doesn't use AXLE he doesn't think about his school work, but contrastingly when using AXLE he thinks about it for the rest of the day which impacts on how he works at school. Another student also suggested similarly when he stated "I think that that helps cos [sic] if you're thinking about that and you might think about it later in the day and then you might put in a bigger effort".

One student reported that someone was annoying him in class and he used AXLE as a vehicle for letting his feelings out. He commented "instead of just yelling at everyone and being mean [sic] I could just say that I was angry", meaning he could write this down in the AXLE journal section.

Express private feelings safely

A third and important theme is that students felt that AXLE allowed them to express their private feelings safely. This was suggested by one student who commented that he did not have enough sleep one day and it was a day he was missing his brother. He said that by using AXLE it helped him to reflect on his day and his week as well as record his feelings in private. He felt that it helped to get it out without anyone else knowing about it.

Although access to AXLE was through a password protected website the students were given an individual password and one student felt that as other students knew this code then perhaps they should be able to go in and change the password if they wish. The student said that that although he felt AXLE was secure and students did not go into each other's accounts he thought it would be better to be able to personalize the password.

Overall, AXLE did provide a vehicle for the Year 8 boys to express their feelings in a private setting.

In the questionnaire that was completed by eight students they were asked if AXLE did help with their learning. All students responded positively to this question. Student's comments included "yes, because it helps us focus on how we were at school" and "yes, it really helped with reminding me of my goal". Another student recorded the comment "yes I found it quite helpful. It let me express myself" and yet another student recorded "yes, it helped me reach my goals adding to my learning". These are very positive responses by the Year 8 boys and suggest they have thought about how AXLE is assisting them in school, with their goal setting and ultimately their learning.

Limitations

The main limitation of this study is that the data collected was only from the students' perspective. Although an effort was made to interview two teachers, the interviews were not a success as the teachers did not feel they could comment on AXLE or if the students had achieved their goals. This is despite the teachers seeing the AXLE website several times, including when it was introduced to the students and even from a distance when the students were logged in each week.

Future Directions

Although the implementation of AXLE was not without its challenges this year, it will be beneficial for this research to continue over time, which more in-depth data gathered from a variety of cohorts. It would be interesting to investigate if the boys' skills of understanding their goal setting abilities are transferable to other goals. Perhaps, over a period of time with consistent use of the AXLE program they will be able to identify the key things they need to do to be more informed and productive as a learner.

Another use of AXLE in the future may be to focus on a small number of students who are disengaged in the classroom. By using AXLE they may develop not only some self regulatory skills, but be engaged and motivated enough to use these skills in the while at school. It is expected that this will occur at a different school in 2009.

Students particularly valued their privacy in using AXLE. Perhaps for some, this means that home access should be promoted so that the boys may use AXLE in a secure place. Another way of promoting their privacy may be to allow AXLE to be used by the boys in a private place in the school. This may mean a computer is placed in a secure location and the students allowed out of class to go on the AXLE website at certain times of the day.

Conclusions

From the preliminary results described above, AXLE is able to provide students with improved goal setting ability and the motivation to achieve their goals. This appears to have lead to some self regulation in this regard. By using AXLE it has provided the students with opportunities to express private feelings. This is perhaps an important step forward with the emotional health of the boys and an unintended outcome of the study.

Although in this study AXLE was given minimal importance by the class teachers and not promoted in any way, a previous study found AXLE provided an important learning space within the classroom (Campbell & Deed, 2008). It is hoped that when schools implement a program such as AXLE that it will be given the time that is needed to ensure its use succeeds. It should be noted that even with some adversity in using AXLE in the school, it was certainly deemed successful by the students who were given weekly or fortnightly access to it. It should be noted that despite some challenges to its implementation at the school, AXLE was certainly deemed successful by the students who were given weekly or fortnightly access to it. By all accounts these students are setting goals and working towards achieving them and self regulating more at school.

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