Student Preferences for Reflective Learning Journals in a Studio Environment: A Survey

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ABSTRACT

This research surveys students to investigate the use of reflective learning journals in a Studio environment. Over 220 students were approached in order to discover the current process used for creating journal entries, along with any constraints that prevented them from producing meaningful content. Students were then prompted to suggest an alternative method that may overcome these problems. The results indicated that the pitfalls of the current system severely hindered reflective processes. This led to the recommendation of a web-based application that addressed student concerns, along with any potential hazards that a revised approach may deliver. The features of the proposed system provide a stronger focus on reflective learning via the implementation of journal templates and raising awareness of retrospective thought processes.

INTRODUCTION

The Monash University Studio environment emphasises the process of reflective learning. To facilitate this process, students are required to keep journals that allow them to reflect upon their experiences. However, the procedures involved in completing journal entries are usually left to the discretion of teaching staff, which does not assist students in making consistently purposeful entries. Therefore they may not be experiencing the full range of benefits that reflective practices can deliver. The journaling process is also difficult for teaching staff, as there are no templates or standard practices to follow. This paper investigates the most suitable attributes for a reflective learning journal (RLJ) that will assist and enhance the retrospective process for students.

THE STUDIO LEARNING ENVIRONMENT

Studio is a form of learning where students work in groups on real projects. They learn group work, project and time management skills by applying them to relevant scenarios. Studio learning is an alternative to the common approach that is strongly focused on regurgitating facts and formulas. Studio was originally an artistic learning method, but it has since been adapted to Information Technology (IT) classes.

Tomayko (1991) found that the traditional approach to teaching in IT severely reduced the ability of a student to evaluate or reflect on their work as they needed to concentrate too heavily on performing it. This reduced a student's ability to develop skills as independent learners. He also claims that more emphasis should be placed upon evaluating the development process, overall product, and software maintenance skills. Having this capability is the foundation of professional software development.

Docherty et al (2001) agree with Tomayko, stating that Studio aims to promote and nurture creativity, reflection, articulation and reasoning. It also encourages the purposeful use of technology and working within groups. Such characteristics are valuable graduate attributes. Gonsalvez

and Atchison's (2000) studies further emphasise that a Studio learning environment allows students to develop and enhance such skills. It enables them to accumulate experience in applying their learning to a real business problem whilst applying reflective practices. Studio encourages students to learn by evaluating their work and skills, along with the contribution of their peers. This emphasis on reflective learning allows students to benefit from their mistakes and implement different strategies to improve their success in future projects and group work.

THE REFLECTIVE LEARNING PROCESS

The practice of reflection represents the modern school of teaching and learning. It focuses on making individuals more effective learners by forcing them to analyse the work they are doing, rather than just completing one task and moving on to the next. George (2002) and Ramakrishnan (2003) both agree that this practice teaches the individual to take responsibility for their learning so that they are more effective and adaptive to the situations they will encounter in their future careers.

Scanlan and Chernomas (1997) constructed a three-stage model that accurately represents the processes that must occur for reflective learning to take place. The first stage of reflection is awareness, which is usually stimulated by uncomfortable or positive thoughts or feelings about a learning situation or event. In the second stage, the individual critically analyses the situation. This stage should involve critical thinking, evaluation and self-examination along with a growing sense of self-awareness. The third and final stage involves the development of a new perspective based upon one's critical analysis, and the utilisation of any new knowledge that was garnered from the reflective stage. Evidence of this new perspective may include behavioural or cognitive changes. It is expected that such changes are adaptive, resulting in the student becoming more effective as an individual and as a group member. If the individual demonstrates that they have become more effective, then learning processes have occurred.

REFLECTIVE LEARNING JOURNALS

Gonsalvez and Atchison (2000), along with Tomayko (1991) note that Studio students are required to keep RLJs that are updated on at least a weekly basis. They are required to write their expectations at the beginning of the week and then reflect on what they have learnt. By the end of each week, they should compare what they have done to their original expectations. Instead of blindly following instructions, this journaling process forces students to think about what they are doing.

According to Lewandowski (2003), reflective journals are utilised in assisting both the educator and student in understanding the pupil's cognitive processes. Understanding these procedures helps the educator provide the student with more effective personal feedback. Reflective journals also help students resume working by providing them with a

summary of where they finished. He also claims using journals for software development allows educators to understand how students solve problems. Students should note and discuss the tasks they participate in, the time taken, any remaining problems, and the processes involved in attempting to solve these problems.

Lewandowski (2003) also compiled a list of the information educators learn from reflective journals and how he believed the information should be used. This includes information that gives educators the opportunity to propose new time management strategies as well as alternative ways of approaching the project. Positive behaviour should be reinforced to encourage continued success. Educators discover how students describe the intricacies of a given problem, what causes them, and how they attempt to overcome such pitfalls. This information is helpful because they are able to see how students have implemented any approaches suggested in class. It also provides a good insight into the strengths and weaknesses of each student. Educators also learn how individual students emotionally respond to successes and failures within a project. This information is also valuable as they may be able to offer strategies to help students handle frustration. Conversely, students who are enjoying their project can be encouraged to explore further.

Reimann (2001) offers a different, yet equally valid point, suggesting that in a classroom environment, weaker or less prepared students withdraw from discussion for fear of asking an "inappropriate" question. This also applies to introverted students, who may be particularly bright, but make a conscious choice to avoid engaging in conversation. Reflective journals allow these students to digest material away from the classroom, so they can form meaningful questions or interpretations. Students are usually required to answer queries posed to them by educators, but do not suggest questions of their own. Reflective journals exist to fulfil this need as well as improve student learning, thinking and motivation.

Reflective journals do not always need to be completed on paper like traditional diaries. Riser and Gotterbarn (1998) discuss the benefits of utilising an online journaling system. Online journals are defined as a web-based system that allows students to describe the processes involved in completing tasks, whilst allowing educators to provide prompt feedback. This approach is beneficial for students as they can conveniently maintain their journals, whilst allowing educators to review and assess them on a regular basis. Educators can provide feedback that will be received and implemented faster by students.

Riser and Gotterbarn (1998) also claim that online journals can alleviate many traditional problems associated with journaling assignments. Such pitfalls include a lack of reflection, logistical issues with reviewing journals, legibility of entries and reviewer feedback, and students not completing journals on time. Frequent reviews, which are necessary to provide regular, timely and relevant feedback, increase the time that the journal is not in the student's possession. Without regular reviews, the student is less likely to keep making timely entries. The use of an online journal alleviates this problem. Online journals also allow for a range of journal entry templates to be designed for different entry types, such as end-of-week summaries or specific task-related entries. These templates assist students in discussing relevant points, rather than focusing upon irrelevant topics.

INVESTIGATING THE ISSUE
Data was obtained by surveying students who currently participate in Monash University's second and third year Multimedia Studio units. These participants were selected for their direct experience and involvement in the Studio environment, along with their familiarity with submitting reflective journals. The survey contained a series of questions that enabled students to identify the current process used for creating journal entries, highlight any significant flaws with the journaling process, and suggest a favoured approach. They were also asked to consider any potential pitfalls that their preferred method may have, so that these could be avoided in any revision to the journaling process. Two hundred and twenty one surveys were distributed amongst students.

Eighty responses were received, which translates to a thirty-six percent response rate.

CURRENT PROCESS USED FOR CREATING RLJ ENTRIES
Figure 1 clearly shows that the majority of students (sixty-eight percent) identified that entries in reflective journals are currently completed on paper. Twenty eight percent indicated that they used an electronic tool, whilst four percent said they utilise the Web to submit journal entries. Despite a variety of options being available, it appears that the majority of students currently submit their journal entires on paper.

CONSTRAINTS OF THE CURRENT JOURNALLING PROCESS
Students identified the lack of a journal template as the most significant pitfall of the current journaling process. They indicated that there is no standard format on which they can base their entries upon.

Many students also indicated that it can be inconvenient to submit a journal in person considering the document exists in electronic form. They felt that instant submission via the Internet would make the process more convenient. A significant number of students indicated that late adjustments to the journal are difficult, as they must modify their electronic version and then reprint it. Having to transport hard copies also makes them easier to lose or damage.

A large number of respondents also felt that if staff were more vigilant in the management of journal entries, then students would be more focused upon completing them correctly and on time. For example, many students felt that staff should scrutinise their journal entries more often.

Several students were unclear about the purpose of RLJ's. Furthermore, some respondents were more aggressive in their feedback, suggesting that they were a useless, time consuming exercise that had no specific purpose. A small amount indicated they were not learning anything from reflecting on their experiences.

PREFERRED METHOD FOR SUBMITTING RLJ ENTRIES
Figure 2 shows that most students believe that a web-based solution would improve the RLJ process. Thirty-four percent favoured an electronic tool, whilst twenty percent considered the current paper-based approach to be the most suitable. Five percent of students preferred an alternative solution. These suggestions were either 'blogs', which are web-based publications consisting of periodic entries (Downing et al, 2003), or submitting journal entries on CD-ROM.

Students may prefer a web-based system as they regularly utilise such technology for researching or completing coursework. They may prefer

Figure 1. Current method used for submitting reflective learning journals

Current Method for Submitting RLJs
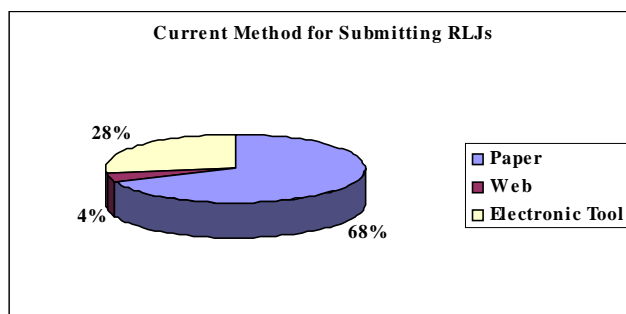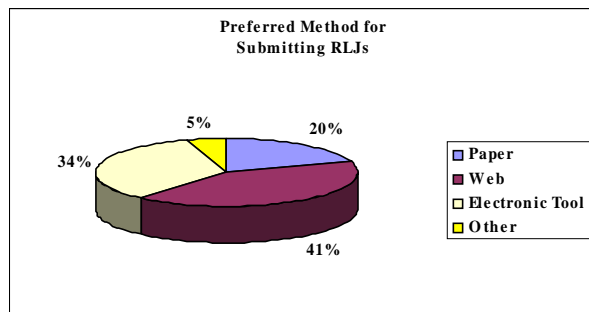
28%
4%
68%
Paper
Web
Electronic Tool

Figure 2. Students preferred method for submitting reflective learning journals

Internet-based technologies as they might use electronic mail, instant messaging and other network services on a regular basis. With only one-fifth of respondents preferring a paper-based approach, it clearly indicates that students are not satisfied with the current process. Students may also want to avoid writing entries by hand, as it can be time-consuming and often difficult to read.

POTENTIAL CONSTRAINTS OF PROPOSED SOLUTIONS

The majority of participants preferred a web-based process. The constraints of such an approach must also be considered in order to propose a feasible solution.

The most frequent concern expressed by students was potential file format or cross platform issues. This suggests that participants are worried that a web-based application could utilise file formats that may not be available to all users. They are also concerned that it may not be compatible with all browser software deployed on various operating systems.

Students also indicated that a web-based solution would require regular access to the Internet. Some feel they might be disadvantaged, as they do not have constant Internet connectivity at home.

A small amount of students also identified some common problems associated with web-based applications. Some suggested that their entries may not be secure, and that such a system could be easy to sabotage. Participants also felt that access to web servers may be unreliable, particularly during periods of intense use.

 Some participants were similarly apprehensive, as they believed that a web-based solution might make it difficult to display the progression of their work visually. Large files consisting of images, visual aids and other electronic media may be impractical to submit via the web.

RECOMMENDATIONS FOR AN ENHANCED JOURNALLING PROCESS

The survey results have established that most students are not happy with the current system used for creating reflective journal entries. They believe that a web-based approach would improve the paper-based process used by the majority of students. However, such an application should be designed so that the potential constraints identified with using a web-based system can be avoided.

The lack of a standard format was the most common complaint amongst students. To eliminate this problem, a template for creating purposeful entries should be introduced. This template should keep students focused by requesting relevant information and asking thought-provoking questions. Journal entries might become increasingly fragmented, but they will be more concise and relevant. The introduction of such a template should force the students to think in a retrospective manner, therefore increasing reflective learning processes and the overall benefit in maintaining a journal.

Many students also indicated that it is can be inconvenient to submit a journal in person when the document already exists in a digital format. They felt that instantaneous submission via the Internet would make the process more efficient and convenient. A web-based solution could make submission of journal entries a quick and easy process. Students could access the system, complete or edit their weekly entry, and submit it as soon as it is complete. It could also ensure that journals are not misplaced or damaged by students or educators.

A number of respondents believed they would be more focused upon completing entries correctly and punctually if staff were more vigilant in their supervision of journals. To remedy this problem, reminders could be sent by electronic mail to students that have not completed their weekly entry. A web-based system could easily implement this feature, whilst a paper-based approach would struggle to do so. Weekly completion of entries could increase reflective processes, as opposed to completing them in the distant future when significant details about an experience are lost.

The results indicated that several students were unclear about the purpose of RLJs. Scanlan and Chernomas (1997) note that the first stage of reflective learning is awareness. Therefore, many students are not beginning this retrospective process. It is recommended that during an initial Studio class, students are asked to access a web-based system and spend at least half an hour reviewing the purpose of reflective learning and maintaining a journal. This information should be readily available for future reading if required. Outlining the purpose and process of RLJs should dramatically increase awareness of what the exercise is aiming to achieve.

System security concerns can be addressed by utilising Secure Sockets Layer (SSL) technology, along with an authentication process. This is a cryptographic protocol that provides secure communications on the Internet (Downing et al., 2003). The authentication process may deploy a username/password system, and optionally use digital certificates. The implementation of these features would ease concerns about the safety of student thoughts in an online environment.

A number of students were also sceptical about the reliability of servers during periods of intense use. It is recommended that a secondary server is always active and available for use should software or hardware failures occur. The secondary server must be kept current so that if the primary system fails, no data is lost.

Some students were concerned that a transition to web-based journals would not allow them to submit graphics, animation or other visual proof demonstrating the progression of their work. Therefore, it is suggested that the ability to upload files should be integrated into the web-based RLJ system. Students could have the option to upload files into a web-based system if they feel it would more accurately demonstrate the progression of their work. This feature could operate similarly to an attachment in electronic mail. Attachments should be limited in size to ensure that the system can continue to run efficiently. This feature should minimise and file format concerns that were identified by student. However, attachments should be considered an optional feature, and not the primary focus of a journal entry. To avoid problems with browser software, it is recommended that significant focus be placed upon testing the application in a variety of environments to ensure full compatibility.

The implementation of a web-based RLJ system could allow educators to provide faster feedback to students. This feedback could then be returned to students as soon as the instructor has completed their assessment. Submitting journals in a hard copy format suggests that students will have to wait for some period of time before they receive any feedback. Furthermore, they cannot update their journals while they are in the possession of the assessor.

CONCLUSION

The research has established that the majority of students involved in Monash University's Multimedia Studio units currently use a journaling system that requires entries be completed on paper. Students identified

a number of constraints associated with this approach, some of which appear to limit their capacity to adopt reflective learning processes. Such issues included the lack of any template, inconvenience of the current process, and a failure to understand the aims of RLJs.

The survey results led to the recommendation of a web-based application that addresses all the constraints of the current system. Students also identified some potential disadvantages of utilising such an approach, but a well-designed system would sufficiently address these problems. Implementation of journal templates and raising awareness of reflective thinking are key features of this revised process. These suggested changes could provide a stronger focus on reflective learning processes. It would also help to promote the fundamental reasons for maintaining a reflective journal in the Studio environment.

This research could be explored further by interviewing students from other universities that have undertaken Studio learning. This could establish if alternative approaches are used, or if similar pitfalls with reflective journals exist on a wider basis. Staff that had been involved with Studio units could also be surveyed to ascertain if their opinions reflect or differ to those given by students. Additionally, a prototype system could be built so that both students and teaching staff could test and comment upon the practical effectiveness of such an approach. This feedback could also determine if the constraints of the previous system have been adequately resolved, or if new problems have surfaced. The evaluation of such a system could provide constructive criticism that could potentially lead to the creation of a superior learning tool.

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