

E'ntries All the Way Using Online Reflective Journal Writing As Innovative Tool to Enhance Student Understanding and Performance in Ethics Courses for Information Age

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Abstract— This paper looks into the possible use of reflective journal writing assessments for teaching ethics for information age course to students from business and computing backgrounds in order to increase deeper learning and enhance subject performance. Although reflective journal writing has not been used previously as a learning tool to teach ethics, this paper compares the results from a sample population of more than 300 students across four semesters to a comparison group from previous semesters taught by the same instructor. Results highlight significant impact of using reflective journal writing on students' understanding of ethics concepts through recorded increase in grades and reduction in fail rates.

Keywords: Reflective writing, journal writing, teaching ethics, e-ethics, enhancing performance

I. INTRODUCTION

The process of teaching and learning has been evolving over the decades. With the advent of information communication technology (ICT), the process has further evolved to incorporate various ICTs. The way teachers perceive teaching and the way students perceive learning has also evolved. No longer do teachers and students simply expect to impart knowledge and accept knowledge respectively. Both expect involvement of the students in the learning process. Both expect more formative assessments that enhance critical thinking, synthesizing information and ultimately improving course performance. Both expect more innovative strategies of achieving these.

One such strategy that has gained popularity is journaling that allows for guided critical reflection (Conway, et al., 2012; Churchill, et al., 2011). Reflection has been defined as a process of thinking and exploring an issue of concern (Boyd & Fales, 1983) while journaling has been defined as a process of connecting theory to practice and developing ability to reflect on that practice (Lowe, Prout, & Murcia, 2013). However, most studies have described the strength of using reflective journaling in the context of teacher training (Lowe, Prout, & Murcia, 2013) (McLeod-Sordjan, 2014). In particular, body of research on reflective journaling highlights the impact of using reflective journaling to improve student course performance (Cisero, 2006), or in teaching English and language classes (Fulwiler, 1987) or

even in practice settings with nursing students and health care education (Heinrich, 1992; Lukinsky, 1990). Although research suggests that reflective journaling strengthens students' perceptions about course content and aids critical thinking (Instructure, 2015), few, if any, studies have researched the impact of using reflective journaling to aid in

teaching IT ethics courses to higher education students, enhancing students' course performance and critical thinking.

This paper explores the effectiveness of using reflective journaling in teaching students ethics in an information age to a group of undergraduate students.

II. REFLECTIVE JOURNAL WRITING (RJW)

Reflective writing has been defined as "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (Dewey, 1933, p.9).

Although no exact definition of journal writing exists in the literature, journaling has been described as any writing that students undertake that challenges them to think and critically review their knowledge and compare it with their personal experiences (Walker, 2006).

Reflective journaling has been described as means to channel the inner communications of the writer that helps to connect the person's beliefs, feelings and eventually actions, thus developing their knowledge and understanding of the subject or course (Instructure, 2015).

III. RJW IN THE HIGHER EDUCATION

RJW has been widely promoted among educators, mostly among service providing professions such as teaching and nursing (Lowe, Prout, & Murcia, 2013; Churchill, et al., 2011; Conway, et al., 2012). Advocates of the technique for teaching have highlighted the importance of using RJW for beginning teachers to understand theories learned (Contch, 2006; Schon, The Reflective Practitioner, 1983; Schon, Educating the Reflective Practitioner, 1987) for students' clinical courses to enhance their reflection, critical thinking and ultimately bridging the gap between classroom and clinical knowledge (Walker, 2006).

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Studies have highlighted the potential benefits of using RJW (Cisero, 2006). Watkins suggested that RJW allows students to track the progress in their learning (Watkins, 2007), while Contich's study demonstrated how RJW helped students highlight areas of skills and concepts they needed to strengthen (Contich, 2006). Further studies highlighted how RJW had the potential to actually increase self-awareness, record personal thoughts and invoke insights among students (Kessler & Lund, 2004; Hiemstra, 2001). RJW has been accepted as a tool that traces awareness development among students (Cisero, 2006). MacFarlane refers to RJW as learning logs and has stated that "[b]y maintaining a learning log over a period of time, students can record their experiences and reflections, thereby 'self-tracking' personal growth and cognitive development. Learning logs enable students to clearly identify the way in which their thinking has developed and become more sophisticated. Learners can benefit further by reflecting on the forces which shape decisions and draw lessons for future action" (MacFarlane, 2001, p.385).

However, few, if any, studies have looked at possible benefits of using RJW to teach ethics, in particular, electronic ethics (e-ethics) to students from majors other than nursing and/or teacher training. Hiemstra has also argued that in fact RJW as a teaching tool in higher education remains underused and understudied (Hiemstra, 2001), a sentiment that has been supported by Schon (Schon, *The Reflective Practitioner*, 1983; Schon, *Educating the Reflective Practitioner*, 1987).

IV. E-ETHICS

Ethics has been defined as a system of moral principles that help people decide what is good for individuals and the society (BBC, 2014). Computer ethics, also known as cyber ethics, electronic ethics or e-ethics describes the traditional ethical values when they are applied to new medium and refers to responsible behaviour when using information communication technology (ICT) (Cybercitizenship.org, 2015).

Higher education institutes have been including chapters, workshops, seminars and even subjects into their curricula in order to raise student awareness of the special ethical issues related to computer/ICT use such as privacy, security, intellectual property rights and so on for more than a decade (Moor, 2006). Hinman suggested that in fact students were more receptive towards learning and understanding ethical concepts when they were allowed to take ownership of their own learning (Hinman, 2005).

Most educators and researchers have suggested various tools and methods to teach ethics or e-ethics that range from using debates (Hanna, et al., 2014), honour codes (Kidwell, 2001), multi-faceted approaches that include presentations, group work and role plays (Brondani & Rossoff, 2010), problem-based learning (Markowitz, Dupre, Holt, Chen, & Wishnowski, 2008) to a mix of all or some of these techniques (Swain & Gilmore, 2001; Handelsman & Anderson, 2011). What is even more interesting to note is that most of the studies refer to nursing, dental or other clinical studies or teacher trainings (Brondani & Rossoff, 2010) (Hanna, et al., 2014) (Markowitz, Dupre, Holt, Chen, & Wishnowski, 2008).

However, few, if any, studies have focused on using RJW as a tool to teach e-ethics to students from disciplines other than clinical or teacher training.

V. RESEARCH OBJECTIVE

Based on the brief review of existing literature, it is argued that although RJW is accepted as a teaching technique, particular while teaching ethics to enhance student learning, increase critical thinking, understand ethical concepts, relay concepts to practical life and increase student performance; studies have not been conducted to cover using the technique to teach e-ethics, except for clinical studies or teacher training.

As part of a pilot study, this paper aims to:

- Implement RJW as an innovative teaching tool to teach e-ethics
- Use the technique on undergraduate students as a means to enhance student learning

VI. METHOD AND DESIGN

The pilot study was conducted at an off-shore campus of a western university, situated in Dubai, UAE. It is also accredited by the Ministry of Higher Education (MOE) in United Arab Emirates (UAE) where it is located and adheres to standards set both by mother-campus and MOE in terms of subject learning objectives, content and assessment of subjects.

As part of its degree program for Management Information Systems, one of the subjects taught to students is Ethics in Information Technology that aims to teach students about the professional ethics of using ICT and the personal ethics of using ICT. This subject is also compulsory for Commerce students and an elective for Business students. This subject covers the body of ideas and commonly held principles that broadly apply to ethical behavior in the information technology environment, and includes the following learning objectives:

- Identify the privacy, legal and security issues related to the introduction of information and communication technologies,
- Explain solutions to security and privacy problems arising from the introduction of technology,
- Evaluate the impact of information technologies through the application of ethical frameworks, and
- Explain the role of professional ethics codes of conduct.
- Demonstrate understanding of the need for social computing, and ethics in cyber space

6.1. Implementing Journaling

To conduct this research, a rare study by Cisero (Cisero, 2006) tested the effectiveness of using RJW to improve course performance and described the process which is widely accepted in doing so by comparing final composite grades (Cisero, 2006). This study's method and procedure are based on Cisero's methodology.

The participants for this study chosen were enrolled for the subject Professional Practice and Ethics taught by the instructor.

6.2. Participants

The instructor had been teaching the subject since 2009 Autumn. In Spring 2014, the instructor began implementing reflecting journaling assignment as part of the requirements to complete the course. From 2014 Spring till 2015 Spring ($N = 336$) are considered as the sample population and students from previous semesters, i.e. Autumn 2009 – Autumn 2013 ($N = 1180$) are considered as comparison group (Cisero, 2006).

As degree requirements ensured that this subject was compulsory for all students registered for Commerce and Information Management Systems, it is assumed that both the groups were comparable (Cisero, 2006).

6.3. Assessment set up and structure

The course content and format (lectures, tutorials, assignments, mode of delivery) over the time period for the two groups were similar and the objectives and learning outcomes remained the same. The only major difference was that reflective journaling assessment was introduced to the subject for the sample population.

RJW was setup using an existing learning management system (LMS) used by the university with the following format:

- Type of assessment: Individual
- Method: Students need to log onto LMS via student system, click on Ethics Personal Journal and then post the entry. There will be a total of seven entries (one for each concept covered in class)

For the instructions and structure of the assessment, Harvard Graduate School of Education's Project Zero Visible Thinking Routine model (PZ-VTR) was used (Education, 2009). The PZ-PTR model basically asks three questions but has been proven to be effective in moving student experience from descriptive to analytical, being simplistic - so easy to understand and apply to journaling, and focusing on formalizing inner thoughts of students based on student experience and with an outer focus on the social conditions in the scenarios and concepts are set (Lowe, Prout, & Murcia, 2013). The three questions are (Education, 2009):

- What do you see?

In this step, students are expected to make observations

- What do you think about?

Then the students are expected to critique their beliefs and values – thinking about what is going on

- What does it make you wonder?

Finally, students are expected to provide reasons to support their interpretation

6.4. Procedure

The instructor carried out the following steps for the students to help them in participating in the RJW:

1. In Week 2 of lectures, the instructor explained reflective writing and illustrated the explanation with a video.

2. Then the instructor introduced the 'See, Think, Wonder' model (Education, 2009) and explained how it works and what is expected of students after each lecture session

3. At every lecture, students were reminded to place an entry into the online journal and revisit their previous entries to change or improve their entries based on their class and group discussion experience which would all be considered for the final assessment of the entries at the end of the semester.

4. At the end of the last lecture session, the instructor visited the LMS journaling section to analyse the responses posted by the students and grade them out of 10 marks, taking into account the entries' extent of authentic reflection (3 marks), format (3 marks) and clarity (3 marks) and 1 mark for the total number of entries.

5. The instructor included one question in the final exam expecting students to produce reflective thinking to solve ethical dilemmas based on concepts covered in lecture and through RJW.

6. The instructor used the total composite grade of the students as the dependent variable that included the internal assessments and the final exam grade.

VII. RESULTS AND ANALYSIS

The mean composite for the subject for the sample population was $M = 69.8$, with a standard deviation $SD = 17.8$ and for the comparison group $M = 63$ and $SD = 17.1$. Although the difference may seem small, 63 is considered a Pass grade while 69.8 approximates to 70 which is a Credit, showing a difference of one grade.

Composite marks were translated into letter grades (Figure 1 shows the graphical results). The graph shows that when comparing the letter grades between the sample population and the comparison group, the total number of students achieving higher than 65 marks (letter grade C and above) increased. According to the graph colours, the purple bar and the light blue bars reduced from Spring 2014 in comparison to the previous semesters, whereas the red and green bars (representing Distinction and Credit increased (See Figure 2). Overall, results show that on an average, students attaining Distinctions and Credits increased from about 47% to 69% whereas the students attaining Pass/Fail reduced from 30% to 12% of the class.

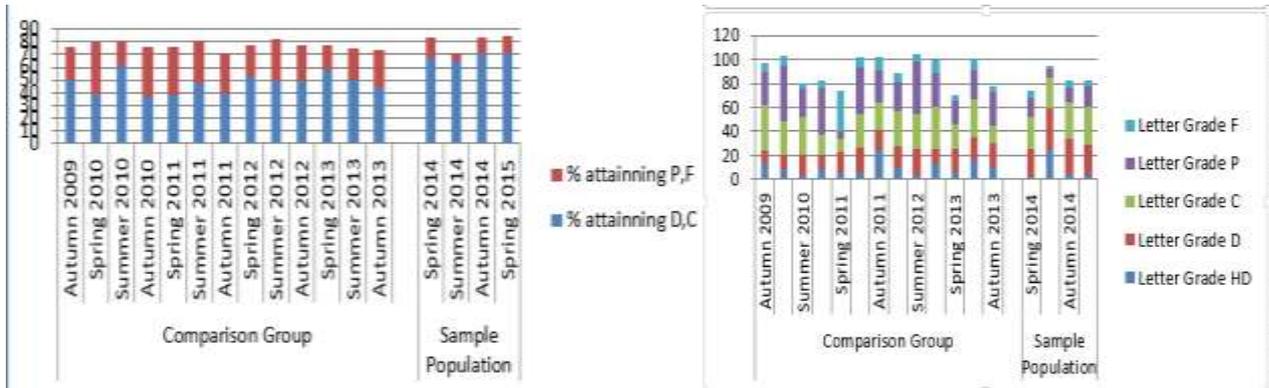


Figure 1: Left: Actual Distribution of Letter Grades across the two sets and time frames. Right: Mean Distribution of Letter Grades D, C, P, F across the two sets and time frames

VIII. DISCUSSION AND CONCLUSION

This study investigated whether RJW could be used to enhance students’ learning experience in the area of e-ethics. The depth and richness of the entries in the RJW over the semesters suggest that RJW is an effective tool to capture students’ progressive, reflective thinking in the area of e-ethics.

One finding of the study showed that using RJW increased the overall grades of the class. As shown in Figures 1 and 2, using RJW reduced the number of students who attained P and F, and increased the number of students who got a C and D. This is considered as a substantially significant and positive impact of RJW on students’ learning as compared to the comparison group. This pattern is quite significant because it also suggests that using RJW may benefit both struggling students and the average students, but less significant for already high achieving good students. The good students may already be self-motivated to achieve the higher grades. However, RJW seemed to really help those struggling students and average students, thus minimizing the P and F grades. This posits that the structure, setting, support and encouragement provided for the RJW assessment for the students most probably were appropriate, thus motivating students to make meaningful, reflective entries based on the concepts they discussed in lectures, which was also reflected in the final exam, thus furthering their understanding of the subject. This is a marked improvement on results from Cisero’s 2006 study (Cisero, 2006) which suggested impact only on average students but not on struggling students.

This study provides evidence on effectiveness of using RJW as a learning tool to enhance students’ engagement with learning and understanding e-ethics concepts and develop deeper learning in the students. It highlights the benefits of RJW as an effective teaching tool not only for teaching or medical courses, but extends beyond any one discipline. As part of the study, students have provided positive feedback during subject evaluations clearly stated the benefits of engaging in such an assessment, that they felt allowed them to ‘dig deep into the concepts and relate to our lives’, ‘understand the concepts’, ‘track changes in my own views of e-ethics’ (Effectiveness, 2014- 2015). As Cisero has posited, using reflective writing allows students to understand subject matter at a personal level, allowing them to change the way they think and understand (Cisero, 2006). So, it is believed

that this study is a significant contribution to the existing literature as this technique has not been used for teaching ethics prior to this research; it is also believed that the design and methods explained in the paper will help other academics teaching ethics to apply RJW to classrooms in order to extend assistance to student learning; and finally that the paper highlights the success of using such a technique in allowing instructors to effectively teaching electronic ethics courses, not just as subject matters, but in helping to increase student engagement with the subject, thus increasing overall grades, cultivating critical thinking which ultimately assists in deeper, meaningful learning of ethics.

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