Online reflective group discussion – connecting first year undergraduate students with their third year peers

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University professional programs seek to develop students as reflective practitioners. The ability to critically reflect is often assumed to occur along the way. The explicit development of critical reflective skills among students is challenging. This study describes the utilization of online group discussion for critical reflection and provides insights into students' perception of the learning experience obtained via an experience evaluation questionnaire. Results suggest that online reflective group discussion may be relevant for the development of critical reflective skills through peer mentoring and collaborative meaning making.

Keywords: reflective learning, group reflection, online reflection, peer mentoring, professional education

I. Introduction & Background.

It is often expected that students undertaking professional training programs develop as reflective practitioners and have the skills to interact collaboratively with others upon graduation. Despite this, the development of professional attributes such as critical reflective skills are often left to chance and assumed to happen over time (Masella, 2007; Trathen & Gallagher, 2009; Tsang, 2010). However, evidence suggests that these skills must be explicitly developed (Masella, 2007; Tsang, 2010) and clearly understood in order for other learning to make sense (Trathan & Gallagher, 2009). This is especially relevant to the Generation Y students of today, whose preferred learning style are said to be collaborative and whose personal focus centres upon social networking and digital connectivity and yet, fail to demonstrate basic academic skills, such as the ability to critique, analyze and evaluate information obtained (Sheahan, 2005; Prensky, 2006). Educators therefore, have the responsibility to facilitate reflective learning in students.

Educators and universities are conscious of the need to provide positive learning experiences and accommodate students' preferences, in order to engage and retain learners of today. Online reflective group discussion satisfies a number of these student engagement determinants for learning but as yet, evidence supporting its effectiveness appears limited in the literature (Lammy & Godfellow, 1999; Farmer, et. al., 2008).

To satisfy students, one must understand the students' perceptions and perspectives. The way students perceive a learning experience greatly influences their engagement and motivation, which in turn, affects the effectiveness of the learning experience in facilitating deep learning, the type that brings about transformation and generative learning (McInnes, et. al., 2000; ACER, 2008).

This study attempts to begin to assess the usefulness of online reflective group discussion in developing critically reflective skills among students (for the development of students as evolving professionals), by exploring students' perceptions of the experience.

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A. Social Constructivist Theory of Learning.

Current education theory supports the social constructivist perspective of learning, which focuses on learner-centred generative learning, whereby the construction of knowledge and meaning occurs through deliberate actions and interactions among learners (Vygotsky, 1978; Mason & Rennie, 2006). The particular emphasis on social interaction in the process of knowing and the resultant shared meanings separates the social-constructivist perspective from constructivist theory. In this context, teachers become facilitators rather than sources of knowledge, students take on the active role of learner-investigators and discussion is viewed as a social environment which enables constructive collaborations. Applied to online reflective group discussion, this approach encourages the selective use of appropriate online learning tools to stimulate students' cognition and metacognition, in the context of social interactions and authentic interactive experiences, in order to construct their own knowledge and meanings (Mann, 2004; Mason & Rennie, 2006).

B. Critical Reflection and the Gen Y Learners.

Critical reflection forms the basis of personal and professional development, self-awareness (Schon, 1983; 1991), self-appraisal (Zimmerman, 2000), mindful decision making and reasoning (Dewey, 1933; Donaghy, 1999), self-directed learning and lifelong learning (Carr & Kemmis, 1986; Miller & Miller, 1999). The impact is said to be the highest if the process incorporates collaborative learning and collective construction of knowledge and meaning (Vygotsky, 1978; Mason & Rennie, 2006; Parkison & Bartek, 2010).

Despite of a common consensus that critical reflection is relevant, the concept of critical reflection itself is contentious. Evidence from the literature indicates that critical reflection is ill-defined and open to interpretation. In this study, critical reflection refers to a focused and structured cognitive-metacognitive process of deep examination, evaluation, analysis and query of a learning experience or critical incident which results in conscious application of theory to practice, transformation of the mind and translational actions, thereby impacting and challenging themselves and others (Kolb, 1984; Boud, et. al., 1985; Schon, 1991; Mezirow, 1998; Mann, et. al., 2009; Tsang & Walsh, 2010).

Facilitating critical reflection among today's learners is a challenge. Today's university students are technologically dependent and digitally savvy. They are the Generation Y (Gen Y) or Millennials, born between the years 1981 and 2001. Gen Y are recognized as the "digital natives" (Prensky, 2001). Growing up taking internet and other technology for granted, the digital experiences of Gen Y have fundamentally changed the way these students approach learning (Prensky, 2006).

Research indicates that these learners are assertive, confident, critical and demanding but deficient in attention span, possess insufficient depth of learning and are lacking in basic academic skills (Sheahan, 2005; McCrindle & Wolfinger, 2009). They multitask continuously, engage and connect creatively, expect instant gratification, are assessment-oriented, opt to work collaboratively yet prefer physical isolation, express themselves online openly and yet are seemingly unable to express themselves when asked to write in the traditional sense, to analyse and to make evidence-based judgements (Skiba, 2005).

Educators and universities have attempted to engage the Gen Y learners using blended learning and online learning approaches. Nevertheless, non-discretely using technology or overuse of any Web 2.0 tools without rationalized pedagogically grounded reasons have been shown to disengage rather than engage the learners of today (Kennedy, et. al., 2008).

C. Web 2.0 and Reflective Learning.

Mindful of the learning style preferences of today's learners and armed with the belief that the likelihood of deep learning and critical reflection is more likely in engaged students, educators are utilizing Web 2.0 tools, e.g. blogs, in place of traditional reflective journals to facilitate critical reflection (Lammy & Godfellow, 1999; Farmer, et. al., 2008).

Those who support online reflection via blogs, highlight the advantages of versatility and accessibility "transcending the limits of time and space" (Zeiger & Pulichino, 2004), compatibility with the learning styles of Gen Y learners, availability of collaborative opportunities to enhance reflective learning and diversify perspectives through interactive conversations, increase student engagement and peer interactions, enhance students' ownership in learning, increased online learning skills, as well as being more mindful of their thought processes and improving reflective skills (Bronack, et. al., 1999; Williams & Jacobs, 2004; Farmer, et. al., 2008). Reflective entries in blogs are stored and retrieved easily, which facilitates the "looking back" aspect of reflective learning (Ellison & Wu, 2008). Online blogging also has the capacity to reach a wide public audience which some authors claim could be "*an uplifting and sometimes cathartic experience*" for the blogger (Williams & Jacobs, 2004). In exposing personal reflections to others, one also learns to confront critical conversations and differing perspectives, which encourages critical analysis of one's own views in the context of others' interpretations (Oravec, 2002) and opens up opportunities for collaborative negotiation and construction of meaning (Richardson, 2006).

Those in opposition argue that online reflection via blogs are just as time consuming as traditional reflective journaling and suggest that the benefits of online reflective learning are outweighed by issues with privacy and confidentiality (Jones & Cookson, 2001). Strampel and Oliver (2008), in their study on the reflective content in student blogs, found that the quality of online reflection among their students were low, being largely descriptive rather than transformative.

D. Students in Professional Training and Critical Reflection.

Society has expectations of those they view as professionals. Students in professional undergraduate programs have the expectations that they will become a professional with expertise in their chosen field of study upon completion. Traditionally, this transition from student to professional is assumed to occur along the way. Professional identity and professional development are seen as "natural-by-products" of tertiary education (Jayne, et. al., 2005; Masella, 2005; 2007; Kinsella, 2007).

Many professional programs, especially the traditional professions like dentistry, put little effort in guiding students "to become" (Barnett & Hallam, 1999). Rather, the emphasis of these professional programs centres upon technical rationality and the acquisition / transmission of abundant theoretical knowledge and skills i.e. programs are primarily epistemologically-focussed. Whether students integrate and internalize what they know and what they practice, into how they practice, who they become and "their ways of being a professional" i.e. the ontological aspects of learning (Dall'Alba, 2005; 2009) are often overlooked. Contemporary philosophies in higher education suggest that both epistemology and ontology are essential for authentic learning and teaching (Cunsolo, Willox, & Lackeyram, 2009). Reflective learning and critical reflection individually and in groups, in particular, has been advocated the means to develop the ontological aspects of learning (Dall'Alba, 2005; 2009; Jayne, et. al., 2005; Masella, 2005; 2007; Kinsella, 2007). For example, in the allied health education literature, reflection is viewed as essential for optimizing practice-based and problem-based experiential learning (Wong, et. al., 1995;

Wetherell & Mullins, 1996). Ironically, reflective learning and reflective practices such as reflective journaling, are often perceived by students in professional programs as irrelevant, difficult and unengaging (Strauss, et. al., 2003; Bush & Bissell, 2008).

In view of the above, the aim of this study was to elicit students' perceptions of online reflective group discussion. In particular, the perceptions of first year and third year undergraduate students in professional training programs were investigated.

II. Context.

The study involved Bachelor of Oral Health (BOralH) and Bachelor of Dentistry (BDSc) students from the School of Dentistry, the University of Queensland.

Student feedback clearly articulated that they feel opportunities to interact with peers in other years would be of benefit to their engagement and professional development. As a result, BOralH and BDSc first year curricula became integrated. The Evolving Professional concept (Tsang, 2010), previously a philosophy of the BOralH program, extended to include the first year BDSc students. Recognizing that professional identity has the power to motivate and influence learning, the EP concept refers to a culture of team-oriented professionalism, a learning context for specialised knowledge, and a platform for professional socialization and the development of professional core skills (Tsang, 2010). EP teams were formed to enable collaborative learning within communities of practice. However, with over 100 students across three year levels and two programs, the logistics of scheduling in-class reflective group discussions were problematic. I needed a solution that enabled reflective interactions among students unrestricted by logistics, online reflective group discussion via Blackboard seemed like a good alternative.

III. Methods.

Ethical approval for this study was gained from the University of Queensland Human Ethics Committee. Students in all years of the BOralH program and the first year of the BDSc program were invited to participate. Signed consent was obtained from 100% of the students. The study was exploratory in nature and supports an enquiry approach in which the learners' experience and perceptions are central.

The study originally included second year BOralH students. They were excluded from the learning activity as the relevant course coordinator failed to update the students' electronic course profile and therefore, implementation was blocked. Students in second year BOralH were still invited to participate voluntarily, but the number of students who participated was few and therefore their data was not included.

An EP Blackboard site was made available to students from the start of the academic year and an EP blog was set up for each team for semester two. Students have access to view all blogs but could only write and respond in the EP blog designated to their EP team. Each EP team consisted of 6-7 first year students, 1-2 second year students and 1-2 third year students.

Online reflective group discussion required students to reflect on aspects of their clinical and professional learning and upload four critical incident-based reflective pieces onto their EP blog within the EP Blackboard site and respond (a minimum of 4 times) to others' reflection. A critical incident was defined as one which holds significance for the learner. Students were encouraged to consider Boud et al. (1985)'s 4Rs (revisit, react, relate, respond) to assist with their online reflection. Students also commented on the reflections of their EP team members. Students were asked to maintain professional standards in their

expression. Final year BOralH students in each EP team were required to facilitate the reflective discussions.

The learning activity was compulsory. Reflective learning was assessed both summatively and formatively. The task was weighted 20% of the semester's mark in first year and 5% of the semester's mark in final year. The discrepancy between first year and third year weighting was deliberate. Online group reflective discussion was only one component of reflective learning for third years whereas it constitutes the entire reflective learning aspect of first year. Marks were awarded for fulfilling the participation requirements, engagement in group reflection, evidence of reflection, appropriateness of communication. The online reflective learning activity was evaluated via a student perception questionnaire at the end of the semester. The questionnaire consists of two parts: the first part comprises of a list of statements which the students respond to using 5-point Likert scales (strongly agree, agree, uncertain, disagree, strongly disagree) and the second part comprises of four open-ended questions. Independent samples *t*-tests were used to determine the statistical difference between first and final year students' perceptions for each statement posed.

IV. Results.

A. Benefits of online reflective group discussion.

Over 60% of students in this study perceived online reflective discussion as being valuable (see Table 1, Statement 1-3). In particular, significantly more students in their third year than first year perceived that reflective blogging was helpful for networking with peers in the same year as well as in other years, contributed to professional development, and clinical learning (see Table 1).

Students were asked: "What are the positives of online reflective group discussion (if any)?" Sixty-eight first year students and nineteen third year students provided a response to this open-ended question.

The main benefits as articulated by first year students were: learning from and with others, connecting with third year students, being mentored by them and having them as a source of information (see Table 2).

- *"Interaction with others, gain insights from peers, chance to see what others think, Get experiences from others, knowledge also. Kind of forces us to think deeply about our own assumptions and understanding and think differently."*
- *"Good to reflect and read older students experiences. Gain insights into what we have not been exposed to in our own experience– a good form of foresight and preparation for the unknown."*
- *"Networking and the social aspects of mentoring. Interesting learning from others. Able to get tips for learning. Access to the info repeatedly whenever I wanted to was good as well."*

All of the responses from third year students described being the mentor to and influencing the less experienced students in some way, as the primary benefit of the online reflective group discussion experience:

- *"Influencing the professionalism of 1st and 2nd year, feeling like I am passing on my knowledge and being a part of EP for others, I found it very rewarding!!"*
- *"Good for first years to ask questions and seek guidance (wished we had that when we are in first year), being able to communicate with younger less experienced peers, sharing insights and hopefully being an EP model to my peers… "*

This correlated well with the third years' Likert responses to the statements on mentoring and leadership skills development (see Table 1, Statement 15 & 16).

Table 1. Students' perceptions of online reflective discussion.[2]

Statement	TOTAL N=119	Year 1 N=97	Year 3 N=22	F	Sig. (2-tailed)
	N(%) *Strongly agree / Agree*			*Yr 1 vs. Yr 3*	
1. The online reflective discussion helped me in networking with peers in my own year as well as in other years.	63(52.9)	49(50.5)	14(63.6)	5.442	**0.035**
2. The online reflective discussion contributed to my professional development.	61(51.2)	43(44.3)	18(81.8)	13.826	**0.050**
3. The online reflective discussion contributed to my clinical and professional learning.	66(55.5)	51(52.6)	15(68.2)	4.642	**0.043**
4. I enjoyed the online reflective discussion.	47(39.5)	34(35.1)	13(59.1)	6.383	**0.026**
5. I contributed well to my EP team during online reflective discussion and put in the effort to be engaged.	82(68.9)	62(63.9)	20(90.9)	2.758	0.084
6. Peers in my EP team contributed well to the online reflective discussion	82(68.9)	69(71.1)	13(59.1)	4.170	0.172
7. The online reflective discussion approach worked better for me than in-class reflective group discussion.	59(49.6)	44(45.4)	15(68.2)	4.123	**0.007**
8. Online reflective discussion was time consuming.	85(71.4)	71(73.2)	14(63.6)	6.552	0.087
9. Reflective learning is a waste of time.	7(5.9)	7(7.2)	0	1.549	0.135
10. I prefer in-class reflective group discussion.	28(23.6)	21(21.7)	7(31.8)	3.489	0.157
11. I prefer personal reflective journaling.	19(16.0)	15(15.5)	4(18.2)	3.989	0.209
12. I prefer online reflective group discussion over in-class reflective group discussion.	66(55.5)	47(48.5)	19(86.4)	0.752	**0.017**
13. I think online reflective group discussion should be continued.	63(53.1)	48(49.5)	15(69.1)	9.373	**0.007**
14. I think online reflective group discussion should involve other years of the BOralH / BDSc programs (i.e. BOralH II, BDSc II, III, IV, V).	59(49.6)	42(43.3)	17(77.3)	1.560	**0.006**
15. I enjoyed mentoring my first year peers.	-	-	19(86.4)	-	-
16. I developed leadership and mentoring skills through facilitating the online reflective discussion and mentoring my first year peers.	-	-	15(68.2)	-	-

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[2] Alpha value = 0.05; significance = $p<0.05$; Independent samples *t*-test was used to determine the statistical difference between final year students' perceptions of online reflective discussion and from first year students for each statements posed

Table 2. Major themes identified from students' perceptions.

Online reflective blogging was beneficial for:	-Networking with peers -Obtaining information & insights -Professional development -Clinical learning
Online reflective blogging was less beneficial because:	-Time consuming -Increased workload
Online reflective blogging was least beneficial when:	-Entries repetitive -Group interactions limited or unidirectional -Limited experience hindered contribution

B. Challenges of online reflective group discussion.

Students were asked: "*What are the negatives of online reflective group discussion (if any)?*" Seventy-seven first year students and eighteen third year students provided a response to this open-ended question.

First year students' negative perceptions fell broadly into three categories. These were related to time, workload, and difficulty making contributions due to limited experience (see Table 2). In particular, first year students thought that online reflective group discussion was time consuming and that the workload was too great for the weighting attributed to this learning activity:

– *"Time consuming!!! Time constraints of uni, hard to find time to write reflection or respond to one and it is so hard to talk on blogs."*
– *"Time is a problem and having to remember to log on and blog. Convenient – like I didn't have to get up early to get to the sessions but no face to face interaction was a negative in hindsight."*
– *"Doing 4 reflections and responding to 4 others is just too much for the 20% we get for it! All in all, making things readable for others was time consuming, thinking up what to write to be interesting was time consuming, it was just time consuming!!!"*

The third year students unanimously indicated that the main issue with the online reflective group discussions was the limited interactions and repetitive points of reflection from their less experienced peers, which the third year studentss attributed to first year students' lack of experience with reflective learning and with clinical practice (Table 2):

– *"Peers reflecting on very similar critical incidents and highlighting very similar points make responding to them a little challenging. It is probably better if the first years have had more clinical experiences."*
– *"I'm not entirely convinced that my first year buddies gained understanding from my reflective discussion. Tips yes, theoretical knowledge probably, but understanding and application, I doubt it. They just soaked up what I said – no questions asked"*

This correlated well with the responses to the Likert statements on engagement (see Table 1, Statement 5 & 6). Twenty out of twenty-two (90.9%) third year students felt that they made an effort to engage in reflective blogging compared to only sixty-two out of ninety-seven (63.9%) first year students. On the contrary, only thirteen third year students (59.1%) felt that peers in their EP team contributed well.

C. Preference for online reflective group discussion.

Perceptions of online reflective group discussion among both first and third year students were positive. None of the third year students and less than 10% of first year students felt that reflective learning is a waste of time (see Table 1, Statement 12).

Significantly more third year students indicated that reflective blogging enhanced their learning. Similarly, a significantly greater number of third year students enjoyed online reflective discussion, felt that online reflection worked better than in-class reflective discussion, preferred reflective discussion over reflective journaling, felt that online reflection should be continued, and should include other years of the BDSc and BOralH programs (see Table 1, Statement 7-11, 13 &14). In contrast, significantly more first year students preferred in-class reflective group discussion than online reflective group discussion.

Preference for online reflective group discussion was rationalized in terms of logistics and practicalities, as well as providing more opportunities for critical reflection, and being more interactive:

– *"Online group discussion is better, more information gotten from them than in-class discussion, everyone who wants to can contribute whereas in-class is too rushed and the quiet ones don't get a say."*
– *"Not in-class! Gets very disorganised and uncomfortable, we have to sit in cramped up spaces and we can't hear everyone properly and the loud ones always dominated the discussions."*
– *"Online discussions are less time consuming - I don't have to travel and I can do it whenever I want to."*
– *"Online is my preference, I can edit and delete things. I can also look back to what I wrote before I add to it. I can save suggestions obtained from others."*

Those who supported in-class reflective group discussion reasoned that in-class reflective group discussion provides immediate feedback, does not take up personal study time, and offers a less formal style of discussion:

– *"The opportunity for immediate discussion in class is better than online, get to bounce ideas off each other – immediacy is important for learning".*
– *"I think in-class group discussion is better than online. Everyone is there, forced to contribute and it doesn't take time out of home study."*
– *"In-class discussion is more personal and spontaneous - the casual chat style is better for group dynamics and for talking over professional and clinical points."*

D. Differences in perception: first year students vs. third year students.

The third year students' apparent preference for online reflective discussion may be attributed to the third year students being enthused about influencing their less experienced peers and being more experienced in reflective learning, therefore having a clearer idea of what constitutes reflection and the potential benefits of reflection. In addition, third year students tended to be more confident in sharing their thoughts online, have more critical incidents to share, as well as being more appreciative of multi-perspectives, options, and alternatives for managing clinical and professional issues:

– *"Opportunity to discuss and reflect on both positive and negative clinical incidents has been terrific. Being able to respond to and answer questions first and second years had and hopefully gaining something from our reflection made it worthwhile."*
– *"Influencing the professionalism of 1st and 2nd year, feeling like I am passing on my knowledge and being a part of EP for others, I found it very rewarding!!"*

- *"Way better than reflective journals...not faster but more interesting, being interactive and offering different perspectives and options."*

On the other hand, first year students may have gained less from online reflective discussions due to being more assessment-oriented and concerned with meeting course requirements rather than being mentored by the third year students and sharing critical reflections. Moreover, first year students' preference for instant feedback, self-perception of being inexperienced and therefore less able to contribute, as well as perception of online reflection being too deliberate and lacking in spontaneity may also have attributed to less positive experiences. Comments from first year students illustrate these:

- *"In-class discussion may be better - more spontaneous and honest, online are more fabricated and written with intention to obtain higher marks"*
- *"Takes time this reflection blog, and not as useful for our learning compared to lectures and pracs."*
- *"I didn't have much to reflect on, I didn't have any helpful hints for my peers, I felt stupid sharing trivial things with the third years and it's hard to reflect on someone else's reflection and respond."*

V. Discussion.

Group blogging in the educational context, where the ownership of the blog is a collective one, is still a relatively new practice with limited literature supporting its relevance in higher education. Overall, students in this study were largely in favour of online reflective group discussion for the development of students as evolving professionals, with third year students being significantly more supportive of the initiative than the first year students.

Students perceived online reflective group discussions using collective blogs as being helpful for networking with peers, learning with and from others, and peer mentoring. Whilst the primary focus of the learning activity was on critical reflection, first year students benefited from connecting with third year peer mentors and having them as a source of information for matters relating to clinical practice and professional development and as role models for critical reflection. Complementarily, third year students enjoyed and benefited from mentoring the less experienced students and, in doing so, developed leadership skills and gained confidence as evolving professionals. Peer mentoring as "*a complex process that supports mutual enhancement of independent and critically reflective thinking*" (Galbraith, 2003) was apparent in this study. Studies evaluating peer mentoring as a means of assisting first year students in their transition to university life also indicate that peer mentoring enhances skills development, reduces stress and the negative effects of stress, facilitates professional socialization and identity development, and provides a blend of idealism and pragmatism that enhances student engagement (Jacobi, 1991; Hall, 2000; Watson, et. al., 2004; Glaser, et. al., 2006). The potential in promoting multi-perspective reflective learning, collaborative learning and reciprocal learning is particularly relevant for evolving professionals (Eisen, 2001; Austin, 2002). Not only is peer mentoring found to be beneficial to the mentees, but also to the mentors including a sense of self-satisfaction, enjoyment in sharing expertise, gaining new personal insights and enhancing professional confidence (Gilles & Wilson, 2004). From this, it could be inferred that online reflective group discussion may be an appropriate approach for peer mentoring.

Benefits perceived by students in this study support a constructivist approach to learning (Mason & Rennie, 2006). Online reflective group discussion enabled the incorporation and integration of collaborative learning and peer mentoring. It provides a positive means of knowing within communities of practice that empowers students as evolving professionals. Furthermore, adapting to online reflective group discussion during

undergraduate training may facilitate the continuation of online reflective group discussion with mentors and peers or within communities of practice post graduation, thereby assisting graduates in the transition between learning and work, and in sustaining lifelong learning (Parkison & Bartek, 2010).

In addition to learning benefits, students who prefer reflective blogging also highlighted the practical benefits of using an online platform. Online reflective group discussion was deemed less time consuming by some students because participation does not involve travelling and can occur anywhere, anytime. Similarly, Skorga (2002) and Juntunen and Heikkinen (2004), indicated overcoming logistic difficulties, e.g., of bringing learners together physically, as being a reason for implementing online interprofessional learning activities. Students also noted that asynchronous online reflective group discussion overcomes the need to respond immediately, offers opportunities for editing, and expressing oneself more clearly. The ability to reflect at a time chosen by students themselves, without time pressure, may motivate students to spend greater amounts of time reflecting (Morgan, 2002). Students also noted greater participation among group members online compared to in-class reflective group discussion. Ng and Cheung (2007) also suggested that online discussion "*empowers reticent learners to contribute as equally as those who tend to dominate conversations face-to-face.*" The opportunity for students to return again and again to read theirs and others' reflective entries engage students in an iterative process of critical reflection, validation, reconsideration, reconstruction and revalidation (Vygotsky, 1978). Moreover, virtual environments may be easier than face-to-face interactions for today's Gen Y learners who generally prefer online socializing to physical interactions, as long as internet access is freely available (Prensky, 2001; Connor, 2003). It is worth noting that some students found online discussions too structured and lacking in spontaneity. Student engagement and a conversational approach to reflective discussion are important for optimizing learning outcomes (Phillips & Nichols, 2009).

Both first and third year students highlighted the lack of clinical and professional experience among first year students as an impediment to engagement and interaction. Miers (2007) noted that students' lack of experience may limit learning as learning stagnates at the "sharing knowledge" stage and fails to move towards "recognizing understanding and self-analysis." In hindsight, involving first year students in online reflective group discussion with third year students when students have only been exposed to clinical observations and clinical practices on peers may have been too soon. On the contrary, early immersion into an online reflective discussion environment may facilitate the development of critical reflective and metacognitive skills, while peer mentoring by senior students may enable the less experienced students to learn by modelling and to gain support and feedback to enable improvement.

Ferdig and Trammell (2004) suggested that the blog is suitable for the construction of knowledge through discourse as blogging encourages reflection and feedback. From an experiential learning perspective, reflection and discussion within a community of practice can promote reasoning and analytical skills, as individual's views and arguments are brought into the open, discussed, debated, and transformed during the interaction, and this in turn, fosters the development of critical reflection and metacognition (Boud & Edwards, 1999). Nevertheless, it may have been a more positive learning experience for the first year students had they been first exposed to personal online blogging before participating in online reflective group discussion with more experienced students. The assumption that first year students, being mostly Gen Y would be familiar and comfortable with expressing themselves reflectively and analytically online may have been inaccurate. This concurs with current literature which now questions whether digital natives really learn better when digital technology is incorporated, especially in the light of many digital natives having lower

technological skills than expected (McPherson, 2008; Lei, 2009). Moreover, the literature acknowledges that whilst Gen Y are proficient in accessing information online, their ability to critically evaluate, analyze and understand the information they obtain may be limited (McPherson, 2008; Lei, 2009). In utilizing digital technology for critical reflection, educators need to take into consideration not only the technological abilities of the students but the students' reflective ability and their level of confidence in articulating themselves in online academic discourses within "communities of practice."

The discrepancy in weightings between first and third year students may also have contributed to a less favourable outcome for first year students. Yielder and Thompson (2007) suggested that students need to believe that participation is worth their efforts in order for engagement and commitment to be maintained. Being highly assessment-orientated, innately competitive high achievers, the substantial weighting attributed to reflective learning was perhaps threatening to some first year students who perceived reflective learning as unpredictable. Moreover, student perception that eight reflective pieces in a semester was excessive for an assessment component weighted at 20% highlight the naivety of first year students in relation to program expectations and standards at the university level. McInnes, et. al. (2000) reported that first year university students often expect the university to fit in with their expectations. In contrast, third year students found the same requirements to be quite acceptable for a weighting of 5%.

Despite student perceptions of reflective blogging as being more convenient, most students still perceived online reflective discussion to be time consuming. However, the time spent was not perceived by students as a waste of time, indicating that most students understand the benefit of online reflective group discussion. Reflective learning and critical reflection take time (Kember, et. al., 2000; Tsang & Walsh, 2010) and therefore, educators wishing to implement reflective components into their curricula and optimize learning outcomes need to factor in adequate time for reflection to occur and for reflective skills to develop.

Third year students expressed significantly greater support for online reflective discussions. Convenience and accessibility were major reasons. Moreover, third year students enjoyed the benefits of collaborative learning and multi-perspective discussions offered by online reflection, which may be characteristics of their readiness to transform from an evolving professional to a professional (Masella, 2007). In contrast, significantly more first year students supported in-class reflective discussion. Some students noted that in-class reflective discussion freed up personal time for studying, suggesting that online blogging done in students' own time competed with study time. This is conflicting to the belief that younger learners prefer and are more likely to learn using online and digital approaches (Prensky, 2001; 2006). Studies into the first year experience have suggested that first year students are prone to feelings of isolation and disengagement and that the transition to university life may be enhanced by greater interactions among peers for combating common challenges and enhancing trust and belonging (Mann, 2004; Krause, 2005; Krause & Coates, 2008).

In both groups, less than 20% preferred personal reflective journaling. Other studies have also found that students generally perceive reflective journals negatively (Mann, et. al., 2009). Reflective journals are usually completed in isolation and this may minimize its utilization with the Gen Y learners who thrive on social networking and prefer collaborative approaches to learning. In addition, reflective journaling does not facilitate peer mentoring, generative learning and collaborative meaning making which are important for today's learners from a socio-constructivist perspective.

Although this study was implemented in a group of oral health and dentistry students, the outcomes of this finding are applicable in part, to other professional training programs.

For example, the benefits of experience-based online reflective discussion for the development of the ontological aspects of learning would be relevant to Gen Y learners in all professional fields of studies. However, it is important to keep in mind that the specificity of the sample population included in this study may render some details less applicable to other groups.

Moreover, the scope of this study is limited by its use of a student feedback questionnaire alone. According to Kirkpatrick's outcome hierarchy, evaluation focusing on student perceptions represents a low level outcome (Kirkpatrick, 1996). Generalisations from the findings of this study may be restricted due to the utilization of convenience sampling and the lack of a control group for comparison. The study set out to examine student perceptions of an online reflective learning experience and found that aside from developing critical reflection among students, it provided a positive environment for peer mentoring. Future studies should be designed longitudinally to determine the effectiveness of online reflective group discussion as a collaborative learning and peer mentoring approach in terms of learning outcomes and systemic impact.

VI. Conclusion

Online reflective group discussion has demonstrated potential for enhancing the development of students as evolving professionals. Through online reflective group discussion among students of different year levels, the less experienced students were provided with guidance and support for understanding tacit knowledge associated with their profession, whilst the more experienced students benefited from taking on the mentor role and developing their professional attributes, e.g., leadership skills. Experiential learning coupled with critical reflection and peer mentoring using group blogs engaged students and demonstrated clear benefits for developing "the ways of being a professional" in this study. The collaborative approach to critical reflection facilitated the integration of theory and experiences, multi-perspective learning and collective construction of knowledge and meaning making. Peer interactions further facilitated professional socialization and early professional identity development, which in turn, provided a specific context for and empowered student learning and ongoing professional transformation.

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