Beyond a participation focus

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Sustaining participant engagement within collaborative online learning environments has proved problematic in a range of educational settings. It is not surprising then, that much of the literature around collaborative online learning has pointed to a pressing need to stimulate levels of participation and engagement. The underlying assumption seemingly being that increased participation will, in and of itself, lead to better learning outcomes within online environments. This paper argues that being overly concerned about participation and enjoyment levels may result in approaches that, at best, promote shallow forms of constructivism, rather than affording opportunity for deep knowledge building. The study reported in this paper draws on a body of research that has shown that levels of participation are inconsequential to the quality of knowledge building that occurs. Thus, when working with online groups there is a greater need to scaffold for the quality of interaction and output rather than the quantity of interaction.

Keywords: participation, quantity, quality

Introduction

For those who have sought to use online technologies for collaborative activity, sustaining participant engagement has proved problematic (Brown & Duguid, 2000; Stahl, 2002; Valcke & Martens, 2006). A number of researchers have argued that there is a pressing need to stimulate participation in online environments, maintaining that greater levels of participation will promote improved learning and team performance (Becker, 2000; Kurtzberg, 2005; Liaw & Huang, 2000; Milliken, Bartel, & Kurtzberg, 2003; Sarker, Sarker, Nicholson, & Joshi, 2005). While a range of approaches are being reported, there has also been an interchanging of terms such as role play, simulation and online games as if they were synonymous (see, Ahamer, 2004; Kardan, 2006; Klopfer, Perry, Squire, & Jan, 2003). Rather than a focus on educational outcomes many of the reported benefits are largely in terms of participation and enjoyment (see for example, Ferguson, 2006; Lebaron & Miller, 2005). While not ruling out the engaging and fun nature of online simulations, role play and games it is important to explore the actual utility of these online approaches beyond levels of participation and enjoyment. For example, in terms of role play, Schellens, Van Keer, and Valcke (2005) found that there was no significant difference in students' mean levels of knowledge construction where roles were assigned and where no role assignment was mandated. This implies that artificially contrived role assignment may not have any beneficial impact on what the students take from the experience.

The utility of participative approaches such as online simulations, games and role plays for educational purposes will continue to be debated for some time, and it is not the intent of this paper to try and extend or resolve these broader debates here. However, in considering how online approaches might be best scaffolded to promote better learning this paper takes as an instructive starting point Paavola, Lipponen and Hakkarainen's (2002; 2004) recognition that there has been a shift from the acquisition metaphor of learning (where the student is viewed as a container) to a participation metaphor and increasingly to a third metaphor of knowledge creation or knowledge building. While most are familiar with the transmission/acquisition and participation metaphors of learning, Bereiter (2002) argued that "worthwhile products of knowledge-building are interpretations of theories, criticisms, translations of them into simpler terms, analyses of their implications or applications in some context of interest" (p. 14). That is, within a knowledge-building metaphor "students are not simply socialising [participating] and exchanging their personal reactions or opinions about the subject matter" (Stahl, 2006, p. 3) rather, they are reifying their activity to some tangible outcome.

While online simulations, games and role play, by their very nature, extend beyond the acquisition metaphor of learning, participatory and experiential learning approaches are perceived to have their limits in education. That is, there is a risk that a focus on participatory approaches will only promote shallow forms of constructivism rather than deep knowledge building (Scardamalia & Bereiter, 2002). It is argued therefore, that proponents of online simulations, games and role plays need to scaffold and evaluate these approaches more in terms of tangible work and products, that is, of knowledge creation, rather than measures of participation and enjoyment. Overly emphasising participation, particularly in relation to assessment protocols seemingly makes an assumption that greater participation is representative of better learning and understanding on the part of the participants. This is simply not the case! To support this contention, this paper draws on findings from a larger study (Roberts, 2007) that found that participation levels are a poor indicator of the quality of work that groups produce when working in online contexts. It is suggested that the findings are informative for those seeking to scaffold group or team based online learning approaches across a range of activity types.

The study

The participants in this study were a cohort of pre-service business education teachers (*n* = 27) enrolled in a BEd (Secondary) curriculum subject at a major metropolitan university in Queensland, Australia. Nineteen of the participants were on-campus students; the other eight participants were off-campus students. Teams were formed such that eight of the nine teams were comprised of two on-campus and one off-campus student. The ninth team out of necessity was comprised of on-campus students. For a more detailed explanation of this process see Roberts (2007) and Roberts and Nason (2003)

The participants were required to collaboratively develop via an online forum, a ‘Guiding Principles Model’ that they could subsequently use to inform the development of business curriculum units and lesson plans in their own teaching. Through developing the Guiding Principles Model, it was envisaged that the participants would be required to develop, reflect upon and share understandings about promoting optimal learning experiences for students they will teach. Each team’s knowledge artefact (the Guiding Principles Model) took the form of a concept map, the quality of which was assessed by a panel of academics from the Faculty of Education. Figure 1(A) shows Team 3’s response while Figure 1 (B) is Team 9’s response. Arguably Team 3’s model was rated higher by the panel because there was a greater synthesis of ideas shown in comparison to Team 9 whose model remained rather unwieldy.

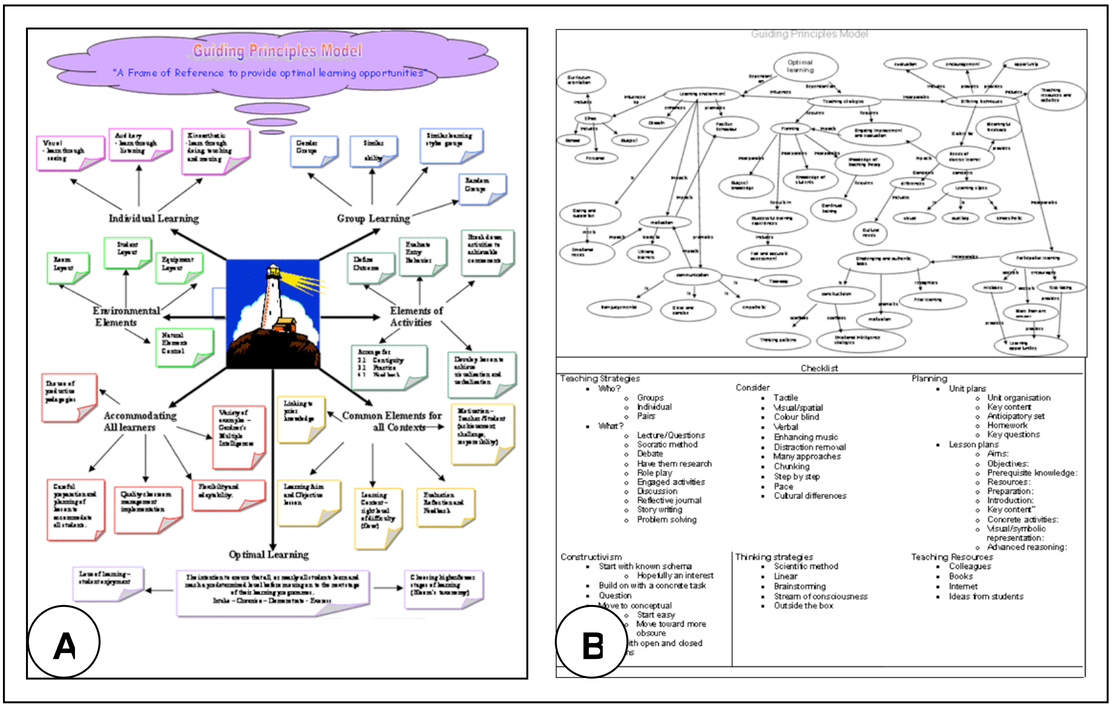

Figure 1: Knowledge artefacts

While the discussion forum supporting the associated development of each team’s knowledge artefact provided a rich source of data with frequency and patterns of participation, of more importance to this discussion, each team’s forum transcript was able to be analysed in considerable detail. That is, the nature and content of each participant’s contributions were analysed using the Functional Category System (FSC) (Poole & Holmes, 1995). Table 1 provides a description of the categories.

In facilitating the analysis process, a doctoral and master’s student from the medical sciences field received training for some three hours in the Functional Category System (Poole & Holmes, 1995). The two coders independently categorised the communication acts within each team’s discussion forum transcript and achieved an inter-rater reliability of 0.829 based on a sample of 50% of the transcripts.

Table 1: Functional category system (Poole & Holmes, 1995, p. 104)

1. **Problem Definition**
    - 1a. Problem analysis: Statements that define or state the causes behind a problem
    - 1b. Problem critique: Statements that evaluate problem analysis statements (may be assigned a positive [+] or negative [-] valance)
2. **Orientation**
    - 2a. Orientation: Statements that attempt to orient or guide the group's process
    - 2b. Process reflection: Statements that reflect on or evaluate the group's process or progress
3. **Solution Development**
    - 3a. Solution analysis: Statements that concern criteria for decision-making or general parameters for solutions
    - 3b. Solution suggestions: Suggestions of alternatives
    - 3c. Solution elaboration: Statements that provide detail or elaborate on a previously stated alternative. They are neutral in character and provide ideas or further information about alternatives
    - 3d. Solution evaluation: Statements that evaluate alternatives and give reasons, explicit or implicit, for the evaluations. They may be assigned a positive [+] or negative [-] valence
    - 3e. Solution confirmation: Statements that state the decision in its final form or ask for final group confirmation of the decision. They may be assigned a positive [+] valence if they argue for confirmation, or neutral (/) valance if they merely ask for confirmation. Negative responses are to 3e are coded 3d-
4. **Non task**: Statements that do not have anything to do with the decision task. They include off-topic jokes and tangents
5. **Simple agreement**
6. **Simple disagreement**

Given that the two coders were working independently, the high level of agreement achieved in the coding process is representative of "investigator triangulation" (Yin, 2003, p. 98) and as such provides a considerable level of confidence in the coding process.

The initial categorisation was completed with the coders working on hardcopy transcripts using coloured highlighter pens to indicate each of the FCS communication categories. Where it was evident that differing coding had been made to the same portions of the transcript, a consensus approach was undertaken by the two coders together with the researcher. The approach taken in this study is very similar to the application of the FCS by Jonassen and Kwon (2001) in their study of communication patterns in computer-mediated versus face-to-face contexts in a group problem solving activity. Once all the transcripts had been coded, the same coding was applied to digital transcripts imported into NVivo and this allowed for significantly more detailed analysis.

Findings

A key finding from the study was that, the volume of contribution, or participation, by a team did not appear to be directly related to the quality of work that was produced. It is suggested that such a finding is unlikely to be surprising to the reader. Indeed, the finding is likely to strike an intuitive resonance. Thus it could be argued that it is all the more surprising that many educators continue to focus on stimulating greater levels of participation in online environments and also often assess students on the basis of participation. Participation for participation's sake does not lead to better work. Table 2 provides an overview of the rank of each team's model as determined by a panel of academic experts from the University's Faculty of Education. Also indicated on Table 2 is the number of Functional Category System coded statements recorded by each of the teams as they developed their model.

While it is recognised that the data set is limited, (given that this is a partial reporting of a larger study) it can be seen in Table 2 that there is no apparent relationship between the rank of the model developed, and the number of Functional Category System comments associated with its development. Team 3 for example developed the highest rank model while simultaneously recording the lowest number of FCS statements (n = 120) to complete the task. Conversely, Team 9 recorded the highest number of FCS statements (n = 435) to produce the seventh ranked model[1]. The median number of FCS statements for the nine groups was (n =159).

Table 2: Rank of model and associated FCS coded statements

Rank of Model	FCS Coded Statements	Team
1	120	Team 3
2	245	Team 5
3	236	Team 7
4	142	Team 2
5	159	Team 4
6	239	Team 8
7	435	Team 9
8	154	Team 6
9	133	Team 1

Table 3 shows the relative contributions made, in terms of the Functional Category System, by Teams 3 and Team 9. Significantly, it can be seen that Team 3 has been more effective, seemingly because of the relative percentage of their contributions that were related to the Solution, Analysis, Suggestion, Elaboration, Evaluation and Confirmation phases of the model's development. Team 9's percentage of contribution across these same categories is low. That is, whereas 46.7% of Team 3's FCS statements were in the solution development/evaluation phases only 25.1% of Team 9's contributions were associated with these phases. Some 33% of Team 9's contributions were recorded as Non Task that is, being off topic and social in nature. In terms of orientation needed, Team 3 established, what could be seen as the final framework for their model very early in the activity. Team 3 was thus able to subsequently spend more time on the development of their model, whereas Team 9 struggled over much of the activity to orientate themselves toward a suitable format to synthesise their ideas.

Table 3: FCS Statements recorded for Team 3 and Team 9

Functional Category (FCS)	Team 3			Team 9		
Problem Analysis	2	1.7%		3	0.7%	
Problem Critique	0	0.0%		1	0.2%	
Orientation	26	21.7%		122	28.0%	
Process Reflection	18	15.0%		49	11.3%	
Solution Analysis	5	4.2%	**46.7%**	36	8.3%	**25.1%**
Solution Suggestion	3	2.5%		16	3.7%	
Solution Elaboration	24	20.0%		14	3.2%	
Solution Evaluation/3d+	12	10.0%		26	6.0%	
Solution Evaluation/3d-	2	1.7%		10	2.3%	
Solution Confirmation/3e+	9	7.5%		7	1.6%	
Solution Confirmation/3e-	1	0.8%		0	0.0%	
Non Task	13	10.8%		142	32.6%	
Simple Agreement	5	4.2%		9	2.1%	
Simple Disagreement	0	0.0%		0	0.0%	
Totals	**120**	**100.0%**		**435**	**100.0%**	

Conclusions and discussion

It is argued that much of the focus on enhancing online learning environments has been centred round stimulating the quantity of interactions. Concomitant with this focus on stimulating interaction is an apparent overriding notion that more interaction is better, such that it is perceived that greater interaction and communication will result in a better flow of ideas and by inference better outcomes (Becker, 2000; Hatano & Inagaki, 1991; Liaw & Huang, 2000; Milliken et al., 2003).

The emphasis on participation as an educational measure can be seen in current assessment protocols, possibly because it is seen as an easy way to assess online activity, it is something to count. Indeed, assessment protocols of this type have even been built into online platforms such as *Blackboard* with the

[1] Both teams were comparable in terms of the academic ability of the students. However, if any academic advantage was held, it was within the membership of Team 9.

tutorials indicating that discussions can be graded for participation and that there are specific statistics that report on each user's participation level (Staff, n.d.). Had a participation-focussed assessment protocol been used within the reported study, Team 9 would surely have been rewarded well. Team 9, with its comparatively inflated total of FCS coded statements (*n* = 435) seemingly epitomises notions of the ideal of a team with high levels of interaction and engagement. Whereas Team 3, with the least interaction would, in terms of its demonstrated participation, be penalised. While undoubtedly there must be some base level of exchange, the findings of this study seem to highlight that within online environments the successful completion of a task is not a function of demonstrated participation levels. That is, volume does not equate with quality.

The findings of this study are arguably at odds with much of the literature advocating a pressing need to stimulate peer interaction. That is, the findings of this study indicate that it is the nature of contribution that is important, not the volume of contribution. Thus, in activities where there is already a considerable focus on participation, such as online simulations role play and games; educators are encouraged to scaffold the pedagogical approach beyond participation, incorporating the ideas of knowledge building - that is, of creating tangible artefacts. In so doing, it is envisaged that the participants will have an opportunity to demonstrate their learning in more tangible and meaningful ways. As a consequence educators will be less reliant on weak indicators of learning such as levels of participation and enjoyment.

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