

# What is happening in my first year pre-service teachers' online learning environment?



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Online learning environment is a complex and dynamic learning space for learners to experience social and cognitive processes of knowledge and meaning construction. It has brought about educators' re-designing of instructional approaches for the emerging constructivist environment (Heinich, Molenda, Russell & Smaldino, 2002), translating classroom-based instructions to the Web, incorporating of asynchronous and synchronous communication as well as evaluating web-based instruction (Lynch, 2002). This study investigated 19 pre-service teachers' learning in an online learning environment. These teachers' online activities were analysed using their individual written reflection logs (end of the module) and a planned forum of discussion notes (out of the three planned forums). Out of the 17 emerging facilitation strategies used by these teachers in this planned forum, 3 highly rated strategies were: Initiating discussions (15.22%), prompting (14.13%) and summarising discussions (10.87%). These teachers also reported 20 facilitation strategies learnt (either by observing their peers' action taken or acquiring on their own through readings as well as trials and errors) and of which 3 were highly rated: Asking questions (14.71%), summarising (12.75%) and demonstrating leadership (9.8%). It was also found that teacher-facilitators used more strategies than the five strategies introduced to them and they also learnt other facilitation strategies from observing their peers rather than those that they used to facilitate.

Keywords: Learning environment, asynchronous, facilitation, strategies

## Introduction

Learning involves co-construction of meaning, building shared understanding and achieving mutual recognition facilitated by another person (the peer or the instructor) present in the learning space (Heuer & King, 2004; Hmelo-Silver, 2003). Such learning space when examined through the interconnected perspectives of learner-centred, knowledge-centred, assessment-centred and community-centred, it brings about the concept of an effective and dynamic learning environment (Bransford, Brown & Cocking, 2000). Research has shown that the goals of online learning environment are for collaborative learning, critical thinking (Garrison, Anderson, & Archer, 2001; Jeong, 2003) and to serve as a "possible cognitive amplifier that can encourage both reflection and interactions" (Warschauer, 1997). Generally the online participants send and respond to notes, learn collaboratively, articulate their "voices", experience activities and achieve deep understanding of emerging issues as part and parcel of their engagement in interactive, social and cognitive processes. Knowlton (2000) regarded the participants' roles as co-learners and the online instructors as the facilitators of student learning and these roles form the key elements of online community (Vesely, Bloom & Sherlock, 2007). Several researchers (Bereiter & Scardamalia, 1987) have highlighted that writing has a crucial role in explicating and articulating one's thinking in the scaffolded online environment. The online educators need to be mindful of applying the scaffolding strategy for learners to acquire skills such as critical and self-regulating, problem solving and gradually decrease the use of scaffolds over time.

The online learning has thus far provided either an alternative mode or a complementary mode for building learner capacity as shown by earlier research work on the community of inquiry and community of practice. On the other hand, the online learning environment also presents issues and challenges to online educators in terms of their social presence, teaching presence, learner diversity and the technological affordances (Rourke, Anderson, Archer, & Garrison, 2002; Swan & Li, 2005; Swan, Shea, Fredericksen, Pickett, Pelz & Maher, 2000; Wise, Chang, Duffy, Valle, 2004). Therefore, online educators' pedagogy should anchor on the higher plane of building interconnectedness of environments with understanding of learners and learning, interaction at learner-learner and instructor-learners levels as well as assessing for and of learning provided the basis for online educators and practitioners (Bransford, 2000).

## Context

A group of 19 pre-service teachers (3-4 teachers formed a group) who attended the two-year Post-Graduate Diploma in Education (with specialisation on Physical Education) programme. They were novices in using the discussion forum in Blackboard. They worked collaboratively in five different groups and each group was facilitated by a teacher-facilitator that was rotated in each forum. The entire process was mediated by the discussion platform in Blackboard. There were a total of three forums which spread across the entire module. For the purpose of this study, a second forum “What are your teaching and learning points of online learning?” was chosen. This forum took about two weeks for the pre-service teachers to participate in the asynchronous online discussions as provided by the university’s Blackboard. In this forum, each group was assigned a scenario to discuss their perspectives on teaching and learning in an online environment. The purpose of the scenario is to provide the context for teachers to participate and facilitate. At the end of the discussion, each scenario was summarised by the respective facilitators.

## Participant

These teachers were provided with an online self-learning package as a resource for them to begin their learning journey. They were also provided with “just-in-time” strategies on online learning based on Salmon’s work (2000) which was a simple and practical model for them to “jump start” the online learning. It provided a roadmap for these teacher-facilitators to facilitate group discussions.

## Research questions

- RQ1:** What were the strategies used and learnt by pre-service teachers in the online learning environment?
- RQ2:** Were there any differences between pre-service teachers’ perceived use and strategies used in the online learning environment?

## Methodology

### Data analysis

To analyse how these pre-service teachers facilitated in the online learning environment, a quantitative analysis of the online discussion notes (in terms of notes written and reported) within each group were categorised by the researcher. The writing of notes was chosen as an indicator of participation in an online environment. The categories were decided by the researcher and were also based on the observations made on the teacher-facilitator’s specific online actions taken (written notes) also indicated by the participants’ follow-up responses in each discussion group of a given scenario. The first research question was analysed from two sources: the teachers’ discussion notes captured in Blackboard and teachers’ individual reflection log. The strategies used by teacher-facilitators in discussion groups were captured in the Blackboard environment and categorised. Teachers’ reflection logs indicated what they learnt. These responses were coded, categorised and analysed. A further comparison between teacher’s strategies used and strategies learnt was also made for the second research question.

## Findings and discussions

**Research question 1** What strategies did pre-service teachers use and learn in the online learning environment?

The strategies used by the facilitators were obtained from the teachers’ participation and discussion notes captured in the online learning environment (Blackboard). These notes were categorised based on the frequency of the actions taken by the facilitators, the summation and the percentages were then calculated. In order to find out the strategies learnt, the teachers had their self-reported strategies recorded in their reflection logs. There were a total of 17 strategies used and 20 strategies learnt by these teachers to facilitate the discussions as shown in Table 1.

**Research Question 2:** Were there any differences among the pre-service teachers’ perceived  
(a) use of strategies  
(b) strategies learnt in facilitating discussion forum?

Table 1 shows the results of comparing strategies learnt and used by these teachers. These teachers indicated 17 strategies used and 3 additional strategies were learnt from their peers to form a total of 20 strategies learnt in the online environment. Out of the 17 emerging facilitation strategies used by these teachers in this planned forum, 3 highly rated strategies were: Initiating discussions (15.22%), prompting (14.13%) and summarising discussions (10.87%). These teachers also reported 20 facilitation strategies learnt (either by observing their peers' action taken or acquiring on their own through readings as well as trials and errors) and of which 3 were highly rated: Asking questions (14.71%), summarising (12.75%) and demonstrating leadership (9.8%). Table 1 also shows that what the teachers claimed to have learnt were much more than what they used (more + than – signs). It was found that summarising discussion was an important strategy in facilitating online discussion. As the discussion moved into various phases (initial warming up, heated up and cooling off), it is necessary for the facilitator to consolidate the discussion points so as to remind the participants of the salient points of the discussions before moving on to the next phase. It was also found that leadership demonstrated by these teachers was deemed to be an important facilitating strategy in the online environment. The teachers reported that they learnt the facilitation strategies through observing what their peers did in the online environment, comparing their strategies with those used by their peers constantly, naming the strategies used (by them and peers) and re-visiting their facilitators' notes (as stated in their reflection logs). In terms of teachers' strategies used, they reported that they had used those strategies introduced and provided by the online resources (Salmon's model).

**Table 1: Facilitation strategies used (U) and learnt (L) by pre-service teachers in the online learning environment**

| No.    | Strategies                    | % Frequency |          | % difference<br>Learnt(L) -Used (U) |
|--------|-------------------------------|-------------|----------|-------------------------------------|
|        |                               | Learnt(L)   | Used (U) |                                     |
| 1      | Clarification                 | 2.94        | 2.17     | 0.77                                |
| 2      | Summarising                   | 12.75       | 10.87    | 1.88                                |
| 3      | Prompting                     | 8.82        | 14.13    | -5.31                               |
| 4      | Giving wait time              | 0.00        | 5.43     | -5.43                               |
| 5      | Initiating a discussion       | 3.92        | 15.22    | -11.3                               |
| 6      | Appropriate usage of language | 0.98        | 4.35     | -3.37                               |
| 7      | No bias                       | 1.96        | 1.09     | -2.39                               |
| 8      | Not dominating the discussion | 1.96        | 4.35     | -3.455                              |
| 9      | Asking question               | 14.71       | 6.52     | 8.19                                |
| 10     | Starting a forum              | 4.90        | 4.35     | 0.55                                |
| 11     | Contributing ideas            | 6.86        | 4.35     | 2.51                                |
| 12     | Assisting missing members     | 4.90        | 5.43     | -0.53                               |
| 13     | Validating & acknowledging    | 8.82        | 7.61     | 1.21                                |
| 14     | Demonstrating leadership      | 9.80        | 1.09     | 8.71                                |
| 15     | Disagreement                  | 0.00        | 1.09     | -1.09                               |
| 16     | Re-emphasis                   | 1.96        | 5.43     | -6.30                               |
| 17     | Monitoring discussion forums  | 7.84        | 6.52     | 1.32                                |
| 18     | Usage of icons/ casual tone   | 1.96        | 0.00     | 1.96                                |
| 19     | Addressing members            | 3.92        | 0.00     | 3.92                                |
| 20     | Analysing discussion          | 0.98        | 0.00     | 0.98                                |
| Total: |                               | 100.00      | 100.00   |                                     |

## Conclusions and future research

This study revealed that the pre-service teachers' using (by facilitating discussion) and learning (by observing peers' action) of facilitation strategies did contribute to their online learning experience. The perceived differences in terms of what the teachers used and what they learnt in the online learning environment is attributed mainly to the presence of collaborative peer-to-peer learning besides the instructor support and the online resources. It also shows that the online environment is a powerful learning space for learners to adapt, interact and foster interdependence and pro-social behaviour among themselves. Indeed, online learning is a viable platform for developing teachers' good practices on online facilitation in teacher education and this mode of teaching and learning should be extended to the in-service programme with the aim to empower the teachers in becoming effective online educators.

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