

## Beyond textbook communication exchanges: Are student teachers ready for virtual assessments?

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The production of videos and sharing them on the Internet has changed the landscape of communication exchanges, and the approach to education. This change is attributed to the low budgets associated with video production and with the convenience of using the Internet as a means to disseminate the information thus processed, through technology. However, most learning and teaching resources continue to be in the traditional text format, as are the assessment modes for teachers. This study aims to describe an innovative practice of having student teachers present a summary of their final assignments in digital format, which could either be videos or other digital formats. The participants in the study are final year undergraduate and post-graduate Diploma of Education student teachers. For the purpose of the study, the virtual presentations were uploaded to a learning platform to enable the two different classes to comment on each other's work within one week. Thereafter, the data collected, was analysed from tracked statistics provided by the learning platform and students' reflections of this inter-class activity. It was found that most of the participants were positive about this new presentation approach, but they preferred to give comments to peers of their own class rather than comment on the work of the other class. It was concluded that our student teachers were ready to accept virtual presentations in formative assessments, at the same demonstrating a marked reluctance to criticise the work of their peers from a different class.

Keywords: preservice teachers, virtual presentation, reflection, peer assessment

### Introduction

With the rapid development of the Internet since the mid 1990s, Information Technology (IT) has presented a new arena for learning and teaching worldwide. IT has globally become an instructional backbone for leading academic institutions as well as academics. More recently, the production of videos and sharing them, via the Internet has completely changed the mode of communication exchanges. This change can basically be attributed to the low costs of video production as well as the convenience of using the Internet to distribute the products. However, most learning and teaching resources continue to be confined to the traditional text format. Similarly, most learners are assessed in plain text formats, rather than utilising multiple presentation formats. Therefore, it would appear that we have failed to apply technology to all aspects of the education arena. If this be the case, are we in actuality, preparing our student teachers to adopt IT for the purpose of assessments?

"It is widely accepted that assessment must be designed to reflect course pedagogy, aims and objectives. Networked courses require the course designers to rethink the assessment strategy if it is to reflect the aims of the course and appropriately assess the skills developed during the course," (Macdonald, Weller, & Mason, 2002, p. 9). It is of vital importance for student teachers to experience the latest trends in video production and share their experiences. This would ultimately enable students to understand that technology has the ability to transcend from a mode of entertainment to an advanced mode of education. In light of these ever-changing modes of communication exchanges, the authors in this study have attempted to investigate if student teachers have the competency and confidence to integrate IT, in particular, the creating of virtual presentations, in the assessment process.

Although videos and other digital resources are used as teaching and learning resources, there is virtually no literature on utilising them as an alternative format for presentation. Some student teachers have

recorded their teaching practices as part of their assessments, but that purpose and rationale is very different from this study. The following section proceeds to describe the pertinent literature review to justify using IT as a tool and medium for formative peer assessment. The review will be followed by a discussion of the research methodology and findings. Finally, the conclusion of the research and future directions will be discussed.

## Literature review

The traditional technique of learning is through rote learning facts and procedures and, thereafter, learners are assessed for their command over the content and the knowledge they have acquired. Vygotsky (1978) was amongst the pioneers who suggested a constructivist approach to learning that emphasised learning through social interaction, which included social relations and interactions with social artifacts such as linguistic symbols, to enable individuals to construct new knowledge from their experiences. Bruner (1986) believed that learning was an active social process in which learners constructed new ideas of concepts based on current knowledge. Lave & Wenger (1991) regarded both the physical as well as the social environment, as being crucial to the learning process. Jonassen, Peck, & Wilson (1999) argued that learning is more engaging and interesting when learners are stimulated by sounds and images. Furthermore, Jonassen, Howland, Moore & Marra (2003) suggested that technology - video, hypermedia, the Internet, etc. - is an excellent tool to learn with. Their emphasis was on learning to solve problems and they addressed how the Internet can be used to foster community building.

Traditionally, assessment and learning are two separate issues as the former is conducted after the learning process is over, in order to evaluate how much learners have learnt and to select rankings for their abilities. However, Biggs (1996) argued that assessment should be designed to support learning rather than to select learners. Chan & Van Aalst (2004) believed that the current trend was to assess for learning rather than assessment of learning. This meant using assessment results to inform learners of their learning process, followed by methods to improve their learning abilities, rather than to merely achieve grades or simply reporting on learners' performances. This enabled students to assess their own knowledge advances in a knowledge building environment. Brown and Knight (1994) presented a theory of formative assessment. They argued that feedback must be rapid and provided at an appropriate point in the learning process, in order to be effective. They pointed out that it would be even more appropriate if the feedback was diagnostic and prescriptive, so that recipients of such feedback could actually utilise it to guide their future learning. The capability and potential of IT undoubtedly fits the requirements of providing timely feedback.

There are many forms of online assessments, which could be grouped as close-ended or open-ended assessments. Closed-ended IT based assessments have been used over two decades, and a few characteristic examples of this category of assessments are true and false questions, multiple choice questions, mix and match questions and fill-in-the-blanks questions. Closed-ended IT based assessments are popular due to the remarkable ease of creating the assessment items - automatic grading, giving instant feedback and finally, generating reports without difficulty. In fact, numerous common learning platforms provide these familiar close-ended assessment features. However, researchers have observed that these close-ended assessments can only measure the attainment of low levels of knowledge. Therefore, open-ended assessments such as reflective journals, e-portfolios, virtual presentations, concept maps, and digital photographs are becoming increasingly prevalent and popular, as assessment tools in assessing the learning outcomes of prospective teachers enrolled in courses. Although open-ended assessment tools can measure higher-level thinking capability, IT ultimately only plays a supporting role. The programmers are not sufficiently qualified to provide instant intelligent feedback or even to generate reports. These open-ended assessment tools usually serve as an electronic arena for submission of assignments and for tutor and/or peers' comments.

Macdonald, Weller & Mason (2002) suggested that, "Networking opens up possibilities for enhancing formative feedback to students through peer review, when scripts are posted electronically for comment and review" (p.10). Indeed, the effectiveness of conducting peer assessments online has been examined in detail, and thereafter, analysed and confirmed by various studies. The results of an empirical study indicated that learners participating in a Group Support System-supported collaborative assessment, had significantly higher levels of deep approach strategies to learning and better project grades than those in a face-to-face collaborative assessment group (Kwok & Ma, 1999). A study conducted by Thelwall (2000) supported the fact that computer-based assessment was an extremely versatile educational tool, with significant advantages which included increased lifespan, security and flexibility, improved learner motivation for study and lastly, utilisation as a learning resource. Buchanan (2000) also confirmed that learners who used the Web-based formative assessment package performed better than those who did not.

Chang (2001) further confirmed that most students had a positive attitude towards a web-based portfolio system's assistance in the personal learning process and its outcomes. Furthermore, Lin, Liu & Yuan (2001) also found that students were more willing to critique online as they could post their comments anonymously. Similarly, it was found that student teachers who utilise peer assessment, outperform their counterparts who do not use peer assessment and the former also unequivocally alter and amend their perceived views of assessment, instruction and the role of the educator (Sluijsmans, Brand-Gruwel, & S. Van Merriënboer, 2002). These positive findings prompted the authors of this study, to experiment with electronic peer assessment for their students' virtual presentations. However, students were encouraged to give constructive feedback and comments for improvement, rather than allotting grades to their peers, due to conflict of interest.

## **Research methodology**

### **Participants**

The study was conducted at the Hong Kong Institute of Education (HKIEd), which is the sole teacher education institute in Hong Kong, although some Universities in Hong Kong also have their own education faculties. Participants in the study included both undergraduate and post-graduate students who had taken IT as their major teaching discipline. The undergraduate students (hereafter termed MAIE students) were taking a four-year joint programme, conducted by the Hong Kong University of Science and Technology (HKUST) and a one-year professional teacher education course at HKIEd. They learnt the subject disciplines of both Mathematics and IT at the HKUST but learnt education and teaching methods modules at HKIEd. Another group of student teachers (hereafter termed PGDE students) graduated with IT or related disciplines from other universities and were enrolled in a post-graduate Diploma of Education course with HKIEd. This Diploma would enable them to attain the status of a qualified teacher, consequently allowing them to teach up to senior secondary school level.

13 MAIE students and 9 PGDE students participated in this study. The PGDE students consisted of 4 Full-Time (FT) students and 5 Part-Time (PT) students. Both groups of students had to take three core "IT in Education" modules at the Hong Kong Institute of Education, but the sequence was slightly different. Both MAIE and PGDE students took the "Curriculum and Teaching Methods of Information Technology" module in their autumn semester. However, MAIE students took "Learning and Teaching of Selected Topics in Information Technology," in the autumn semester and "Supporting Information Technology in Schools," in the spring semester, whereas the PGDE students took those two modules in the reverse order. However, the Part-Time PGDE students took the "Supporting Information Technology in Schools" module in their second year. Therefore, all the participants, except the Part-Time PGDE students, had taken the modules of the other members in the study. Consequently, it was expected that they would have sufficient knowledge to give constructive comments to their fellow participants, whilst providing opportunities for the practice of relevant assessment skills.

During the period of this study, MAIE students took the module titled "Supporting Information Technology in Schools." The objective of the module is, "To develop participants' ability to coordinate and manage issues related to ICT Management in school." The PGDE students took the module titled, "Learning and Teaching of Selected Topics in Information Technology." The objective of the module is, "To enhance participants' ability to select appropriate strategies to create learning environments for their students that foster learning and teaching of ICT subjects."

### **Assessment tasks**

The MAIE students were assigned three categories of assessments, which consisted of class participation, a group project and an individual report. The group project grade (20%) was to complete a small practical task, which illustrated an innovative use of IT in schools. A final report, which accounted for 70% of the grades, was on any critical issues related to the module content, whilst the class participation grade (10%) consisted of online and face-to-face activities. As for the PGDE class, students were assigned to form a team to complete a group project, which comprised of 70% of their grade. The project was to design and create a web site to serve as virtual learning community for secondary school IT students. The PGDE students had to elucidate and explain very logically how this community could be employed to enhance teaching and learning of IT and the methods by which it could be appropriately applied in a computer class. Furthermore, each of the PGDE students had to write an individual report, to analyse the problems and strengths for building a virtual learning community in his/her teaching practice or own school and this report made up the remaining 30% of their grade.

It is a very common practice for student teachers to present in classes prior to submission of their assignments. Since the participants would be future IT teachers in schools, they were expected to be adept and proficient in creating a virtual presentation, i.e., a self-running slide show which is embedded with a voice narration. They were instructed to express the core essence of their assignment using video or digital formats and then post it on the Internet. This would enable them to acquire feedback from peers in their class, along with feedback from “more educated” peers who had previously taken the same module and most significantly, from their instructors. The MAIE students’ virtual presentation was to present their final individual essay, whereas the PGDE students’ virtual presentations were on their group project, where one group consisted of Full-Time students and the other group consisted of Part-Time students. It was suggested that student teachers give constructive comments on at least two of their peers’ projects.

## Findings and discussion

Although the PGDE students’ presentation was on a group project, it was found that each group had constructed two presentations to complement each other. Out of the four presentations by the PGDE students, the two presentations conceived by the Full-Time students were created using Windows Media Encoder, as they captured appropriately the steps of using software. The remaining participants constructed their virtual presentations using PowerPoint and voice recording techniques. For the thirteen MAIE presentations, only one was created using Windows Media Encoder, and it contained video clips from another source.

Figure 1 depicts that most virtual presentations were uploaded on the learning platform almost on the day of submission, as the deadline loomed close. Figure 2 is an example of the discussion threads of dialogue exchanges of a virtual presentation, while utilising a handheld Personal Digital Assistant (PDA) mobile device to assist mobile learning. Figure 3 illustrates interesting comments posted by peers on the virtual presentations. A noteworthy observation was that peers characteristically gave positive feedback on the contents of the presentations and gave various succinct suggestions for improvements. Interestingly, the participants did not give their peers any negative feedback. Furthermore, another significant finding was that none of the participants used the “rate” functions provided by the learning platform.

Date	Thread
3/19/08 5:41 PM	<a href="#">Online Presentation By CAROL CHOW</a>
3/20/08 11:36 AM	<a href="#">校園裡的PDA之移動學習</a>
3/20/08 12:23 PM	<a href="#">優質教育基金 — 回顧及展望</a>
3/20/08 1:22 PM	<a href="#">online presentation by vincent</a>
3/20/08 1:39 PM	<a href="#">多媒體學習中心</a>
3/20/08 2:15 PM	<a href="#">電腦知識產權問題</a>
3/20/08 4:16 PM	<a href="#">學校智能卡系統</a>
3/20/08 9:03 PM	<a href="#">Google 應用服務教育版</a>

Figure 1: Sample illustration of students’ virtual presentation topics

Thread: [校園裡的PDA之移動學習](#)

Total posts: 9      Unread posts: 0

- [校園裡的PDA之移動學習](#)
- [RE:校園裡的PDA之移動學習](#)
- [RE:RE:校園裡的PDA之移動學習](#)
- [RE:校園裡的PDA之移動學習](#)
- [RE:校園裡的PDA之移動學習](#)

Figure 2: Sample illustration of students’ presentations and dialogue exchanges

### Findings from tracking functions

Blackboard provides a convenient tracking function. Table 1 shows that each class of students was more active in providing feedback to peers in their class rather than to student participants of another class. In particular, PGDE students were specifically reluctant to comment on the work of MAIE students. The number of postings by MAIE students was distinctly higher, as they had to submit individual presentations, rather than a group presentation, as required of the PGDE students.

**Creation date:** Thursday, March 20, 2008 1:53:02 PM CST  
**Date last modified:** Thursday, March 20, 2008 1:53:02 PM CST  
**Total views:** 16 **Your views:** 3

**Overall rating:** ☆☆☆☆☆

**Rate this post:** 0 stars

--[Show Parent Post](#)--

It is a quite good and new topic, but are there many schools have this kind of learning???

According to me, only some private and ASS schools have, so is there enough information for you to analyse the situation??

**Creation date:** Tuesday, March 25, 2008 3:17:46 PM CST  
**Date last modified:** Tuesday, March 25, 2008 3:17:46 PM CST  
**Total views:** 12 **Your views:** 3

**Overall rating:** ☆☆☆☆☆

**Rate this post:** 0 stars

I think the money needed to spend when a school decided to use PDA will be high. By the way, it is an interesting idea and PDA is easy to bring and use. This must increase the study interest.

But it is still a new thing among school and difficult to find references...

**Creation date:** Tuesday, March 25, 2008 5:35:14 PM CST  
**Date last modified:** Tuesday, March 25, 2008 5:35:14 PM CST  
**Total views:** 12 **Your views:** 3

**Overall rating:** ☆☆☆☆☆

**Rate this post:** 0 stars

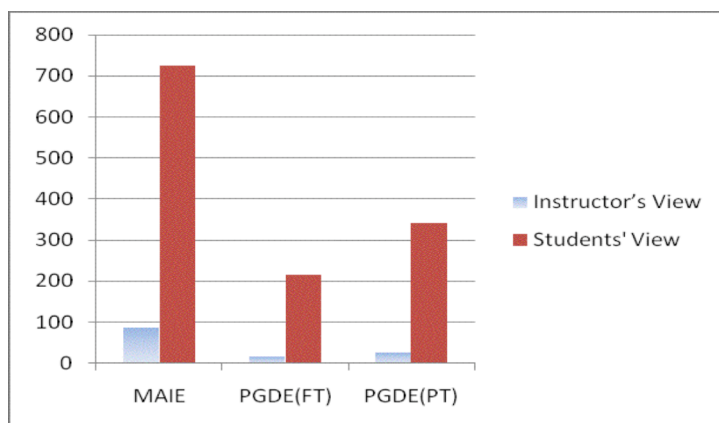
A new idea. If you can develop more area of using PDA in learning, it would be better.

**Figure 3: Sample illustration of students' comments on PDA virtual presentations**

**Table 1: Tracked statistics of postings**

Group	No. of total postings	No. of postings from MAIE students	No. of postings from PGDE Students	No. of postings from the instructor
MAIE	80	66 (82.5%)	1 (1.25%)	13 (16.25%)
PGDE(FT)	27	8 (29.63%)	19 (70.31%)	0 (0%)
PGDE(PT)	24	6 (25.00%)	17 (70.83%)	1 (4.17%)

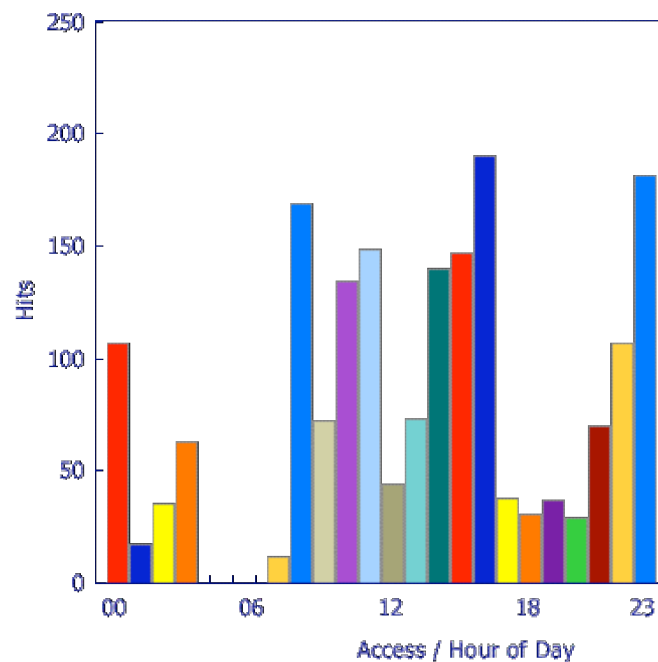
Blackboard also provides another statistical function which tallies the number of views of the threads. The number of views is much higher than the number of postings, around ten times that of the actual postings. Figure 4 shows that the MAIE students also had much higher views than the PGDE students and it was interesting to note that the PT students were more active than the FT students. We need to take into account that the number of views merely measures the number of hits, so we are unable to predict the duration or the amount of time spent on each view. It is also possible that participants view the postings more than once to see other postings, without posting their own comments or opinions, just like the instructor. Figure 5 clearly depicts that participants took advantage of the flexibility provided to access the learning platform at different hours of the day.



**Figure 4: Tracked statistics of students' and instructor's views**

### Findings from reflections

The quantitative data enumerated in the above pages, undoubtedly shows that MAIE students were more active than PGDE students. However, quantitative data alone might not be able to unravel the true value of this new practice. The integration of reflective practice into the curriculum for initial and continuing



**Figure 5: Summary of accessing times and number of hits**

education, especially for professionals such as teachers, nurses and social workers (Boud & Walker, 1998), has been prevalent over the past 10 years. This practice addresses issues such as the alignment of learning objectives with assessment outcomes and the assessment of reflective practice, including dealing with disclosure and providing feedback, and collaboration, group work and plagiarism. Boud & Walker further suggested, “It is important to frame reflective activities within the learning context in which they are taking place” (p.193). Therefore, the authors of this study attempted to obtain qualitative information from their reflections.

In general, both groups of students offered more positive feedback (Chang, 2001) rather than negative feedback on the virtual production and sharing. A student commented that, “For the virtual presentation... it is a good try and let me know a new method to do the presentation. I think this method can also be used in secondary schools since it will not waste class time and provide opportunities for all students to present.” Another student concurred, “The adoption of virtual presentation is a good and efficient idea of presenting an individual report online. Not only does it save time, but it also allows us the flexibility to watch the presentation anytime we wish and then to give our comments.” However, one of the students debated that, “The drawback of virtual presentations is that they are less efficient as compared with presentations in class, as we are not sure when others will give us feedback and then, there is a delay for us to reply to the feedback too.”

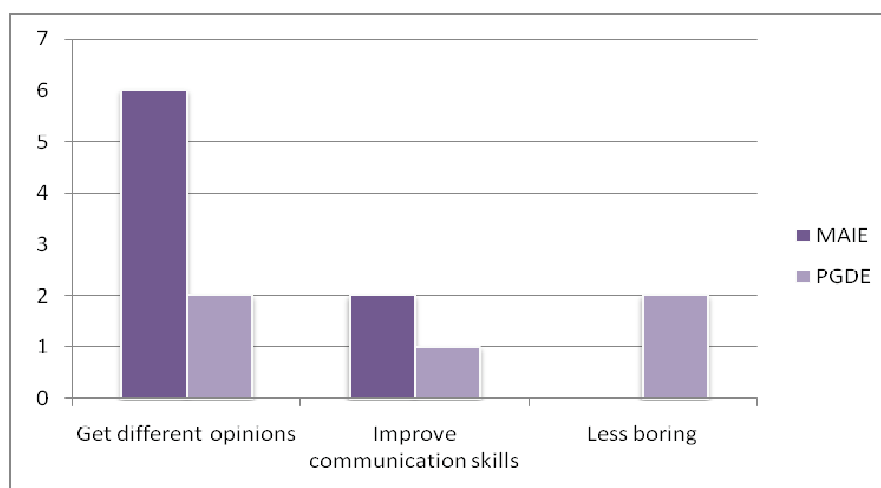
Six MAIE students opined that it was more flexible in terms of space and time to produce and to listen to virtual presentations but only one PGDE student cited this important point. Similarly, four MAIE students embraced this new experience as none of them had practiced participating in virtual presentations, prior to this study. It was also apparent that none of the PGDE students were enthusiastic about this novel and innovative practice. Key concepts of the reflections are tallied and summarised in Table 2 below. This table depicts the top ten student comments, with negative feedback highlighted in yellow. It is evident that, “Giving comments to other’s work easier” is a recurring remark, followed by, “Takes more time to prepare,” and lastly, “More flexibility in terms of space and time to produce and to listen to virtual presentations.”

Apart from understanding student teachers’ opinions on video production, it is equally important to know if they like sharing their products and ideas, for there may be some students who do not feel at ease at the thought of exchanging their ideas and perceptions with unknown partners. The authors tallied key concepts and it was encouraging to conclude that students felt they could receive distinct and diverse opinions, rather than merely opinions from students in their own class, (Jonassen, Howland, Moore, & Marra, 2003), due to their different and varied backgrounds (see Figure 6). Some students also reflected that the virtual presentations and commenting on them enabled students to improve their communication skills and was a less tedious exercise than class presentations. There were fewer comments on inter-class

**Table 2: Ten notable phrases from students' reflections on virtual presentations**

Virtual Presentation	Total	MAIE	PGDE
Giving comments to other's work easier	9	4	5
Takes more time to prepare	6	3	3
More flexible in terms of space and time to produce and to listen to virtual presentations	6	5	1
Cannot get instant feedback from peers	5	3	2
Learn more from other's presentations	4	3	1
Less pressure (can re-work again, do not have to face the audience)	4	3	1
A new experience	4	4	0
Can transfer the skills to secondary school settings	3	2	1
Easier to present the ideas	2	0	2
Fosters generic skills	2	2	0

activity but one of the students did suggest having inter-class competitions, as such competitions would be more stimulating and challenging, while another student expressed his opinion, whilst stating that the inter-class activity had added meaningful value to their overall learning experience.



**Figure 6: Students' reflections on inter-class activity**

### Educator's reflections

It was for the first time that two academics collaborated towards concentrating their concerted efforts to embark on a pioneering study of this nature. The study involved months of planning and effort and was an endeavor to execute and achieve a set goal, through diligent application and synergistic study. However, the authors did face a dilemma in implementation, for they had a module outline to follow, and they had to adapt those guidelines to comply with this new study. The authors felt that it was more convenient to give feedback to virtual presentations, as they could bestow their full concentration and attention when watching the students' virtual presentations in their own offices, rather than in the classrooms. Furthermore, the authors had time to offer beneficial criticism and positive feedback, as they did not have to be concerned about taking up too much time for actual classroom presentations by the students.

### Conclusions and future directions

This article discusses a new attempt to incorporate IT, namely digital formats, in peer assessment. In spite of a dearth of adequate financial and human resources, this study demonstrates that integrating technology with learning, teaching and assessment can be effectively accomplished with the application of creative ideas and innovative practices. The majority of student teacher participants expressed their enthusiasm with the new experience and did not encounter any unforeseen obstacles in creating a virtual presentation.

The assessment activities not only helped participants to understand different methods to integrate IT to provide a seamless learning and assessment experience, but it also equipped them with the training necessary to be better prepared and organised while using different digital formats when teaching at schools. The verification of the study echoed Macdonald, Weller & Mason's (2002) suggestion that the learning platform had provided flexibility for peer assessment. The student teachers received more positive feedback with this practice and at the same time it was established that they were not too keen to contribute suggestions. The findings, therefore suggested that our student teachers are ready to take on the role of producers of digital productions but lack the conviction to be assertive in expressing their critical comments on work presented by their peers.

It was encouraging to discern that student teachers thought that the new assessment method could be applied successfully at secondary schools. However, most of their comments were merely encouraging and supportive. They neither asked questions for the purpose of clarifications nor did they proffer productive comments for their peers to improve their work. The future directions may include a culture change for assessments. Firstly, different formats, particularly digital formats of assessments would be required to reflect the importance of IT in education. Secondly, student teachers should be encouraged and trained to become more flexible, objective and tolerant to the concept of giving and receiving comments from their peers. Perhaps they could be allowed to post their comments anonymously to enable them to feel comfortable about giving critical comments to their peers (Lin, Liu, & Yuan, 2001). This would also allow students to further develop their critical thinking and problem solving skills. Thirdly, students should be better prepared to assess and support the work of their peers, as a peer assessment model would facilitate students to continuously progress, when learning to design work. Towards this end, perhaps co-constructing an assessment rubric and having a trial run during class hours could be considered a good starting point. Finally, longitudinal research is inevitably considered necessary to examine whether video production and sharing can add value to the overall learning and assessment experiences of student teachers.

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