Development and Validation of the Music Education Teaching Practice E-Supervision System Using the Google Classroom Application

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Teaching practices have been regarded as one of the most important components of a teacher training program that will produce quality beginning teachers. One of the most important elements of teaching practice is supervision. Currently, In Universiti Pendidikan Sultan Idris, Malaysia, supervision is conducted by the supervisor only two or three times for each teaching practice session. This leads to the questions regarding the effectiveness of the way to guide the trainee efficaciously. Through these processes, both supervisors and trainees have faced many problems and constraints which include factors of distances, time and budget constraints, as well as supervisory skills. This study aims to develop a complete teaching practice e-supervision system in music education using the Google Classroom application to complement face-to-face supervision currently in practice. This experimental case study utilized a mix of qualitative and quantitative study design. Research data was obtained through document analysis, focus group discussions, interviews, observations and questionnaires. The E-Supervisory Teaching Practice System has undergone expert validation before being implemented in a real setting during the session involving music education teachers, trainees, and supervisors. The results were analysed and triangulated to see their usefulness and the impacts on their teaching practice. The findings of this study can be used by various institutions of higher learning, policymakers, and stakeholders involved in teaching practice especially music teachers.

Key words: *E-Supervision, Teaching Practice, Music Education, Teacher Training, Google Classroom.*

Introduction

Teaching and learning in the 21st century requires teachers who are equipped with the right aspects of values, skills, and knowledge to produce effective education. Therefore, institutions that train teachers need to produce teachers who can take on great responsibilities as they are a major backbone in educating students (Kadir & Ariffin, 2019). Teaching practice programs have been identified as one of the most important components of the teacher education process. This shows the importance of the teacher training institution to design an effective, relevant teaching practice program, in line with the school's current practice. The pre-service teaching practice program is a very important factor in producing quality beginner teachers (Darling & Hammond, 2006). It is highly valued and needed by students (Farell, 2003). Teaching practice refers to a process of supervising practical experience or job training that provides support for entry into the work environment. Teaching practice is considered a cornerstone in teacher education programs where teachers train and develop their teaching skills (Barry & King, 2002; Cameron & Wilson, 1993).

Previous studies have identified several components of teaching practice programs. One of the most important components is supervision. Supervisors and mentor teachers are key in determining the quality of learning outcomes that trainees receive during a teaching practice programme. Supervisors and mentor teachers need to help teacher trainees to turn the experience gained into a professional understanding that will develop the teacher's professional identity. Korthagen & Vasole (2005) report that quality supervision will result in this transformation. A supervisor with high practical skills can provide constructive reviews that motivate trainees to master practical skills and make good decisions. Therefore, an effective supervisory system needs to be developed to meet this need.

Problem Statement

Teaching practice programmes in Malaysia's teacher education institutions, except for the Malaysian Institute of Teacher Education (IPGM), are mostly conducted in the final stages of study which is in the seventh or eighth semester according to the specific institution. Almost all the teacher training institutions in Malaysia carry out two or three face-to-face supervisions during the Programme. This is due to several constraints such as distance from the institution, lack of resources, time-consumption and so forth. Supervision quality is also a major factor in which there are less experienced supervisors in supervision. Bell et al., (2014) explained that supervision contains two important components: supervisory procedure and supervisory content. Both elements need to be emphasized in the teaching practice in order to produce quality teachers. The results of a survey conducted by Ahmad Jazimin et al., (2015) found that mentor teachers perceive imperfections in the current supervision process. A new system needs to be developed to address this problem.

Scriven (1981) and Kulik (2001) have criticized the quality of supervision carried out due to supervisory visits by supervising lecturers from teacher education institutions causing trainees to change their teaching styles. Scriven (1981), on the other hand, notes that the number of supervisory visits by supervisors is not enough to produce quality supervision during the teaching practice programme. While Rusznyak & Bertram (2015) say the use of supervisory tools is not effective to complement the teacher's professional development for the trainees. This is due to the lack of assessment elements for learning concepts compared to the evaluation elements of learning in current practice. Supervisors are key to determine the quality of learning among trainees during teaching practice. Therefore, Supervisors will need to guide the trainees to transform the experience gained during practice sessions into professional understanding. Korthagen & Vasole (2005) report that structured reflections lead to this transformation.

In general, supervisory elements are key to help trainees to improve their professionalism. A good and effective supervision system will produce effective and quality beginner teachers. To achieve this goal, a more effective supervisory system needs to be developed. An E-Supervision Teaching Practice system needs to be developed to complement the face-to-face supervision system that is currently practiced by most Teacher's institutions today.

Research Objectives

Based on the statement above, several objectives have been identified to address this issue. In general, this study aimed to develop and validate the Music Education E-Supervisory System using the Google Classroom application. The objective of this study is to;

i. Determine the contents of the Music Education Teaching Practice E-Supervision System using the Google Classroom application.
ii. Determine the suitable method for Music Education Teaching Practice E-Supervision System using the Google Classroom application.
iii. To validate the Music Education Teaching Practice E-Supervision System using the Google Classroom application.
iv. To review the usability of the Music Education Teaching Practice E-Supervision System using the Google Classroom app.
v. To review the effects of using the Music Education Teaching Practice E-Supervision System using the Google Classroom application on trainees and supervisors.

Literature Review

Supervision plays an important role in the development of teacher professionalism. Supervision is the task assigned to an expert to stimulate individual growth and development,

to influence teacher behaviour in the classroom. This leads to the strengthening of the selection, development, and evaluation of good teaching approaches and appropriate resources among trainees (Goldhammer et al., 1980). Improvements in teacher functions include ensuring that teachers carry out their assigned responsibilities, receive assistance, guidance, and technical assistance in improving instructional functions. Therefore, the improvement of functions ensure the supply of teaching materials and the quality of instruction is enhanced (Ani, 2007). Supervision is aimed to be effectively improving teacher's prospects and competencies, to improve student academic achievement.

The main functions of supervision, it can be concluded, is to assist and encourage the trainees to enhance their personal and professional development. Stock-ward and Javorek (2003) state that supervision plays an important role in developing trainees' professionalism. However, Barham and Winston (2006), Creamer and Winston (2002), Stock-Ward and Javorek (2003), Winston and Creamer (1997), as referenced in Petroc (2012) have identified that supervision is not given priority in discussing matters related to the teacher's career.

E-Supervision in Education

Dudding (2009), as referenced in Carlin, CH, Boarman, K., Carlin, E., & Inselmann, K. (2013), states that e-supervision provides a solution through the use of technology by helping universities appoint qualified individuals to supervise the trainees during the teaching practice period. Carlin, Milam & Weinberg (2013), also argued that e-supervision can also be interpreted as distance supervision. According to Carlin, Milam & Weinberg (2013), e-supervision is intended as a supervisory model that requires the use of two-way audio and video conference technology as a site for direct supervision which allow supervisors to use specific locations such as offices through E-supervision site to supervise the performance of the trainees in schools without having to be there.

E-supervision allows for two-way verbal communication between supervisors and trainees (Carlin et al., 2012). The use of e-supervision is a practical and effective way to supervise trainees who work in isolated, rural, and underserved schools with less educational focus (Dudding & Justice, 2004). This can reduce costs related to time, finances, and the flexibility of the schedule of supervisors and trainees (Dudding & Justice, 2004). Paulsen & Schmidt-Crawford (2017), also outlined five benefits derived from using e-supervision as a means of supervising students. These include the ability to supervise and review at the right time, improving supervisory efficiency, provide quality reviews, and balance the current costs.

Some findings that need to be considered from the reviews conducted by Teo, Y.H., McNamara, S., Romeo, G., & Gronn, D. (2015) on the use of supervisory sites through Skype and Adobe Connect show positive feedback from supervisors, mentors, and teacher trainee.

However, there are some requirements needed to achieve maximum usability of the application, especially good internet connectivity to have a better quality of video and audio through the teaching practice session. Additionally, the camera and microphone selections also play an important role. To succeed in this operation also requires good computer handling skills.

In contrast, Smith (2018) identified several benefits of a combination of two supervisory methods from her study. This includes face-to-face and long-distance methods that require an internet connection and use of the GoReact application during teaching practice. This will enhance the performance of the teacher trainees and supervisors as well as satisfy both parties with the communication and feedback required during the training. The data obtained show that the combination of both the face-to-face supervision methods and the GoReact e-supervision can enhance the skills of teacher trainees more effectively (Smith, 2018).

In developing the e-supervision system of teaching practice, information and communication technology (ICT) assistance is very important. In this study, researchers use the Google Classroom application as the site of the e-supervision system. Dede & Richards (2012) explain that the digital learning platform (DLP) is a product-based design technology that is interactive to teaching and learning in the classroom. In DLP students only carry laptops connected to the internet and teachers as facilitators and monitors. Brabazon (2016) talks about Google University fighting for education as a path to innovation through the search for knowledge through digital platforms.

Google Classroom

According to Iftakhar, S. (2016), Google Classroom is a platform and one of the best sites for streamlining teacher work processes. The platform provides one complete site with Google educational applications, Gmail, Google Drive, and Google Docs. Google Classroom features ideal teaching aids to be used to help teachers teach with benefits such as saving time, controlling the classroom, and improving communication with students. Some of the benefits outlined by Iftakhar (2016) include teachers being able to streamline communication and workflows for students by providing access to a variety of access points to the discussion thread and assignments. In addition to Google Classroom allowing students and students to keep files or documents in order, Faculty or Supervisors can quickly track student assignments, as well as facilitate the scoring process.

Mohd Shaharanee et al., (2016) stated that integrating Google Classroom into the educational process as a pedagogical tool can help build an educational design that allows students through online practice. The findings from the study of Al-Maroof, & Al-Emran (2018), also showed positive effects of using Google Classroom among students, including the

effectiveness of the application and the factors of student behaviour. This emphasizes the commonalities of usability and convenience provided by Google Classroom. Students rely on Google Classroom's function as a facilitator to develop their academic activities and are an important factor for academic institutions to decide to leverage this technology into the education system.

The result of the data obtained through research conducted by Bhat et al., (2018), shows the use of Google Classroom makes it easier for students in terms of assignments submission and help lecturers to identify plagiarism easier. In fact, according to Hidayat, & Nurcahyanto (2018), Google Classroom can facilitate lecture sessions and encourage greater interaction through the Blended Learning process among students. However, the use of these applications needs to be integrated with other Google products to encourage maximum use of Google Classroom.

Research Methodology

This study used mixed methods of qualitative and quantitative approaches. An experimental case study design, which incorporated several methods of data collection including document analysis, focus group discussion, individual interviews (supervisors and teacher trainees), observation and questionnaire was utilized in this study. The subjects of the study consist of two main groups who will be directly involved in providing information to this research. For this project, 35 selected students from the seventh semester of Bachelor of Music Education will undergo a teaching practice programme in the second semester of 2018/2019 in selected schools in Malaysia (which represents the total number of UPSI Music Education students who will be attending the teaching practice programme) and five supervisors consist of qualified lecturers at the Faculty of Music and Performing Arts, UPSI.

All the research data obtained was analysed in a way that is relevant to the type of data collected both quantitatively and qualitatively. This includes providing coding for interviews and focus group discussions, themes and protocols for document analysis, interviews, and observations. The analysis of the findings from the questionnaire use descriptive statistics that include min, medium, range and so on. The process of determining the validity and reliability of each instrument were done according to each type of instrument that been used in the study. This data was triangulated to increase the validity and reliability of the finding.

Figure 1. Research Design (Experimental Case Study)
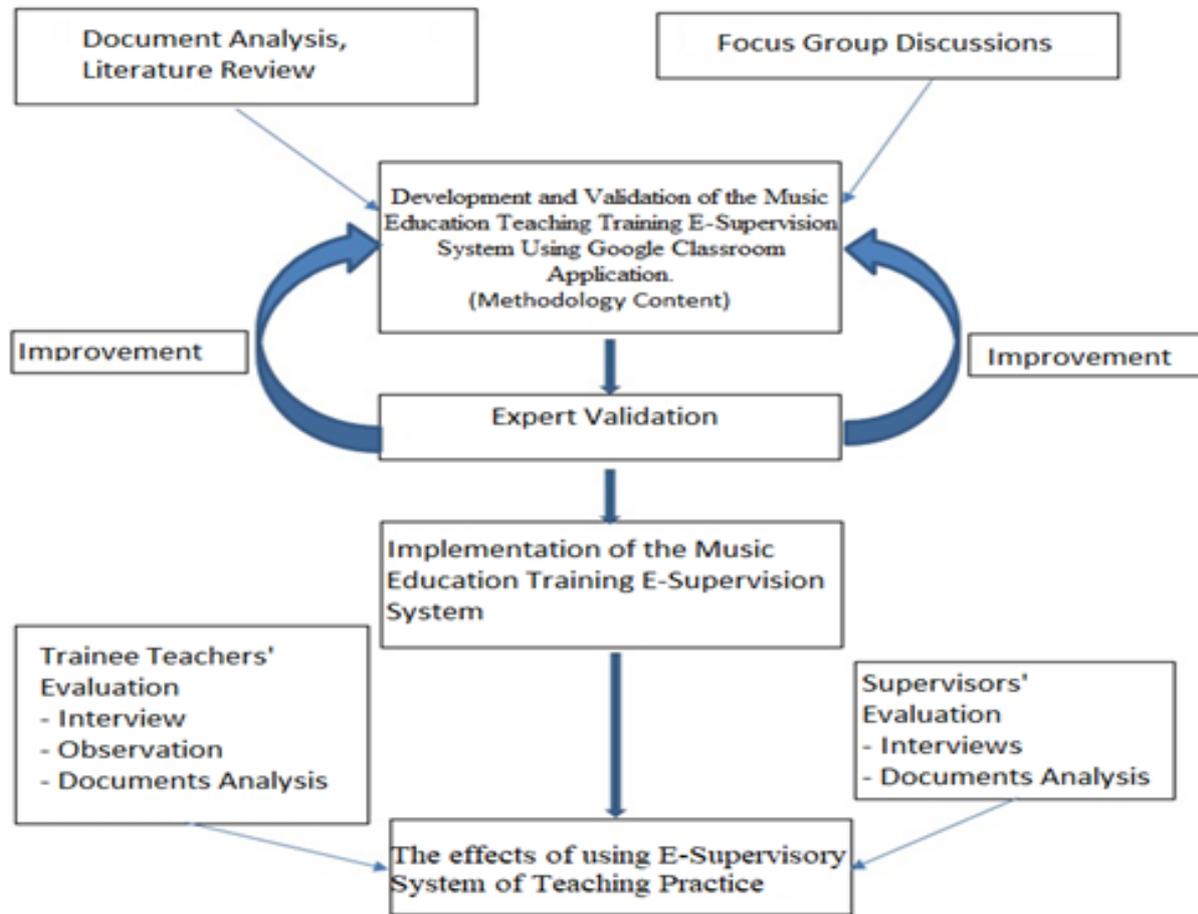
Research Findings

Five supervisors and 35 teacher trainees who participated in this study were trained to use Google Classroom application for supervision process. This e-supervision system is a complementary method to the traditional face-to face supervision method. At the same time, all teacher trainees have been supervised using face-to-face method twice in the eight-weeks teaching practice Programme.

Findings for Research Objectives 1, 2 and 3

In answering research objective 1, 2 and 3, analysis of documents and focus group discussion methods has been utilized. Finding from these methods are used in determining the contents and suitable method to develop a provisional e-supervision system. The system then has been validated by three experts using a validation form. In view of the experts' comments, the provisional system then was revised and reconstructed to the final version.

From the finding of the study, nine tasks have been identified and given to teacher trainees to be uploaded into Google Classroom platform throughout the eight weeks of the teaching practice programme. All these tasks had been checked and supervised by their appointed supervisors. All the tasks given are listed in the table below.

Table 1: Student Tasks

Tasks	Description
Teaching syllabus	All teaching syllabuses for all classes and subjects assigned to teacher trainees were prepared by the Ministry of Education, Malaysia.
Class timetable	Upload all timetable including yearly school activities and holiday.
Yearly teaching plan	Upload all yearly teaching plans for every classes and subjects prepared by the class teacher
Daily teaching plan	Upload eight chosen teaching plans according to the subject assigned to the teacher trainee.
Critical reflection	Upload four critical reflections based on the focus issues to be discussed with the supervisor.
Short videos of teaching	Upload three short videos of teaching focuses on listed teaching sections below; i. Induction set (introduction) (5-10 minutes) ii. Teaching and learning activities (15-30 Minutes) iii. Assessment activities (5 -10 minutes).
Teaching aids/Teaching resources	Upload at least one innovation on teaching aid or teaching resource used in teaching activities.
Online forum	Participate in online forum with peer group based on topics provided.
E-portfolio	The content of the E-portfolio should consist of main information about the school including address, school grade, total number of teaching staffs and students, list of school administrators, list of classroom and special teaching rooms, school facilities and all daily teaching plans.

All supervisors are required to upload materials to assist teacher trainees in doing their assignments. Supervisors are required to check and give feedback on their teacher trainees assignments.

Table 2: Supervisor Tasks

Task	Description
Setting up Google Classroom Application	Register with Google Classroom Application and download the Apps into smart phone. Invite and accept students under his/her supervision.
Daily teaching plan guideline.	Upload daily teaching plan guideline into class material platform.
Critical reflection manual	Upload critical reflection manual into class material platform.
Conduct e-supervision	Prepared assignment platforms and conduct e-supervision based on the tasks below; i. Timetable ii. Yearly teaching plan iii. Daily teaching practice iv. Critical reflection v. Short teaching videos vi. Teaching aids innovation vii. Online forum viii. E-portfolio
Announcement	Post announcement on related topic from time to time if needed.
Quiz	Post and check quizzes related to teaching practice in the question platform.

Findings for Research Objective 4

To address research objective 4, the survey data was collected from supervisors and teacher trainees using document analysis, interviews and questionnaires. From the analysis of the documents that have been carried out, it is found that 94.28% of the teacher trainees participating in this study successfully completed and submitted their assignments online and on time as instructed. Some teacher trainees (5.7%) were unable to submit their assignments on time due to internet disruption. However, they managed to submit the assignments after having a good internet connection at home. As a result of the analysis of the documents produced, it is found that the quality of the work completed was excellent. The feedback and guidance were provided by the supervisor to the teacher trainees helped them to produce the task effectively.

The findings of the survey conducted showed that a high percentage (82%) of teacher trainees felt that using the Google Classroom application as a good and effective e-supervision system supported traditional supervision methods. Only a small number of teacher trainees (18%) had difficulty in completing the assignments due to busyness with tasks given by school

administrators, insufficient time, lack of facilities such as video recorders and tools, and poor internet connectivity.

Findings from interviews conducted with 10 teacher trainees found that they were generally satisfied with the e-supervision system developed by the researchers. They received better and more effective guidance during their teaching practice programme. The e-supervision system is also a user friendly. However, they also noted that the system has increased their workload at school and requires time to get used to it to be a proficient user. In conclusion, most teacher trainees who participated in this study felt that using the Google Classroom application as an e-supervision system was very helpful in improving their teaching skills.

Finding for Research Objective 5

In discussing research objective 5, the interview method was used among supervisors as well as teacher trainees. In addition, questionnaires were also given to teacher trainees to examine the impact of using this e-supervision system. From the interviews conducted with five supervisors, they were all satisfied with the system which helped them to guide teacher trainees more effectively in distance. The teacher trainees also claimed they were happy to receive guidance from the supervisor through this e-supervision system. Issues that arose in relation to teaching and learning can be discussed immediately with their respective supervisors or colleagues.

Some supervisors felt that they lacked time to conduct online supervision due to the busyness of other tasks such as teaching, research and other tasks. This is seen as an increased burden to the workload in the university. The relatively large number of teacher trainees (five to seven people per supervisor) to supervise also increased their challenge in effectively supervising. If these tasks can be minimized, they may be able to manage them more effectively.

Based on the assessment conducted by the supervisors at the end of the teaching practice programme, it was found that 68.57% (24 teacher trainees) of teacher trainees involved in this e-supervision system achieved grade A, 17.14% (6 teacher trainees) grade A- and 14.29% (5 teacher trainees) grade B+. The majority of the teacher trainees were excellent in teaching practice after engaging in this e-supervision system. In conclusion, through this e-supervision system, the positive impact on the achievement of teacher trainees in teaching practice is highly significant. Therefore, in order to fully maximize this system as a support system for effective face-to-face supervision, issues raised by supervisors and trainees need to be addressed for improvement.

Discussion and Conclusion

The findings of this study have provided several benefits to teacher institutions, supervisors and teacher trainees. It has been identified that the total number of face-to-face supervisions must be sufficient and systematic for a better effect. However, this will involve high cost and may be time consuming. With the use of e-supervision system, cost and time can be reduced. This parallel with the study completed by Dudding & Justice, (2004) which found that the use of e-supervision systems to reduce costs, time and flexibility for both supervisors and teacher trainees.

Analysing the results of the final assessment of the teaching practice programme found that the achievement of the teacher trainees participating in the programme was excellent. This shows that the uses of e-supervision of the system has succeeded in improving the skills of the teacher trainees. This finding is also consistent with the findings of Smith's (2018) study who reported that the combination of both the face-to-face supervision method and the e-supervision can enhance the skills of trainees more effectively.

The e-supervision system using the Google Classroom application has provided an appropriate and effective platform for teacher trainees to submit their teaching practice assignments given by supervisors. In addition, this platform allows teacher trainees to keep files or documents safely and systematically. The system also facilitates supervisors to check and review assignments easily and provide feedback to teacher trainees at any time. It also facilitates the process of student evaluation by supervisors. Based on his study, Iftakhar (2016) also noted that the same benefits of using Google Classroom application in his work. On top of that, Bhat et al., (2018) claimed that the use of Google Classroom facilitates the process of submitting teacher trainees' assignments and help lecturers to identify plagiarism easier.

Hidayat, & Nurcahyanto, (2018), suggest that in order to facilitate the blended learning process more effectively, the use of Google Classroom application needs to be integrated with other Google products. Considering this suggestion, this study has also utilized other Google products such as Google Calendar, Google Drive, Gmail, and Google Docs in the system. Teacher trainees marked their teaching and school activities in Google Calendar to assist them keeping track on their working schedule. By using Google Calendar application, teacher trainees can keep on track their working schedule easily.

In general, this study has shown that both supervisors and teacher trainees benefit from undergoing the teaching practice programmes as described above. However, there are few things that need to be done to maximize the benefits of using this supervision system. One of the important things that was not utilized in this study was the use of video conference

facilities. The uses of video conference in e-supervision process can accommodate real-time communication more effectively. However, this feature should be effectively used with good internet connection. In this study, real-time video conference technology was not utilized due to low level internet service in many schools. Thus, this problem does not allow supervisor to conduct direct-distance supervision without having to be onsite. However, Carlin, Milam & Weinberg (2013) noted that direct-distance supervision is a better and effective way of conducting distance supervision.

Another issue in conducting e-supervision is the uses of a better quality of video and audio technology. Teo, McNamara, Romeo, & Gronn (2015) suggest that to achieve maximum usability of the e-supervision system, the camera and microphone selection plays an important role as well as good computer using skills in e-supervision process. In this study, teacher trainees were not equipped with any recording facilities. They only used their smart phone to record videos and audios that needed to be submitted via the Google Classroom application. Thus, the quality of videos recorded in classroom were rather low and unprofessional. However, in this study, the supervisors still able to screen the videos for the purpose of supervision.

To address the shortcomings and constraints of the current teaching system, the e-supervision system was developed to enhance the process of supervising music education teaching practice. The results of this study will be beneficial to supervisors as well as teacher trainees. Institutions of higher learning can use the findings of this study to formulate policies and plan implementations of teaching practice in their respective institutions. The e-supervision system is proven effectively useable and valuable to the teaching practice supervision system in higher education institutions and thus produce a good beginning teacher for the future.

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