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Pre-service EFL teachers' perception on educational video production technology: A needs analysis

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ABSTRACT

This study conducted a needs analysis by investigating the perceptions of Indonesian pre-service English as a foreign language (EFL) teachers and in-service lecturers about instructional media development and the potential of educational video production for EFL teacher education. This research was conducted with a number of respondents from pre-service teachers who took instructional materials or media development course (IMALT/IMALD) and computer-assisted language learning (CALL) and lecturers including the program director of language education department in Indonesian universities. The results suggested that the design of the workshop should be devised as constructive learning with a focus on project-based learning to help teacher candidates develop their skills in employee value proposition (EVP). The workshop is also suggested to provide some examples of today's educational video to bring into the discussion. In terms of the course design, the participants suggested some intended topics to learn, which are learning objectives and strategies, camera work, pedagogic approaches for video production, additional creative aids in video production and pre- and post-production phase of EVP.

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1. INTRODUCTION

English as a foreign language (EFL) teacher education in Indonesia is conducted by universities that offer English teacher education programs. These teacher education programs offer four-year study along with training programs to develop teaching competencies of future EFL teachers. There has been a considerable debate on how the curriculum of EFL teacher education should be developed to prepare better future teachers in which some educationists accentuate the development of teaching skills while others emphasize the improvement of academic knowledge which includes language proficiency [1]. Sentosa and Arlianti [2] suggested that the pre-service program in Indonesia needs to be improved since the curriculum materials tend to be theoretically oriented with minimum teaching skills practice included. It is argued that emphasizing practice in the teacher training program is necessary in preparing future teachers, so that teacher education goes beyond cognitive learning, thus pre-service teachers can develop their teaching skills through practice [1], [2]. Moreover, as today's generation of students have grown up with digital technology, preparing teachers with digital skills can be a vital consideration in a teacher training program. This is supported by the argument that developing students' digital skills allows them to be prepared for competitiveness in today's job market which is much influenced by 'digital media culture' [3], [4]. An innovative skill is one of significant aspects to learn for preparing EFL teachers in 21st century teaching and learning practice [1].

Similarly, Share and Mamikonyan [5] recognized that as a need for digital age teaching, it is essential for teacher to prepare candidates who are not only capable in their academic knowledge but also qualified in the use of technology. That said, EFL teacher education should also accommodate the development of teachers' digital skills so that it can produce pre-service English teachers with 21st-century teaching competency.

Digital skills include how teachers can both use and design technology for their teaching and learning practice. Ringstaff and Kelley [6] suggested that teacher training should also invest in teachers' development skills in utilizing technology and providing instruction with technology. This aligns with the needs of today's educators to be able to produce new media for instructional teaching [7]. In today's multimedia age, instructional media for teaching and learning EFL is much influenced with multimodal presentation including digital audio and video. Thus, there is a need for EFL teacher education to incorporate media production to develop teachers' skills to meet the demands of digital age teaching [8].

Some universities in Indonesia who provide EFL teacher education have offered a course in developing instructional media. This course, however, does not currently cover the video production skills as one of the media development skills. Based on the course materials outline of instructional materials or media development (IMALD/IMALT), the teaching and learning practice mainly covers the topic of textbook development which encourages student teachers to analyze and develop course books for EFL learning. In fact, for over the years video has become an essential instructional resource [7], thus, teaching video production skills to pre-service teachers can be beneficial in preparing them to teach digital natives who are multimodal [8] in their outlook. Thus, it would be good to expand the topics covered in this course by proposing the idea of developing pre-service teachers' skills in producing video for teaching and learning in order they can devise their 21st century teaching and compete with other teaching professionals in a digital age [1], [9]. Moreno-Guerrero *et al*. [10] suggested that the use of educational video is positively valued by students as it can provide an increase in students' skills. That is to say that developing teachers' skills in designing video resources for their students is a necessity in a teacher preparation program.

Video technology has become increasingly accessible for all people, especially the youth. Yang [8] suggested that "with the advent of accessible video technology, youth are engaged in media more than ever." This view is also shared by Jany [4] that young people now are becoming familiar with new media. It can be shown that the users and creators of media are now dominated by young people, such as video blogging. Video blogging has become popular among today's digital students including teacher education students, which means that they have become familiar with video technology. Statistics shows that over a billion people are active users of YouTube and they upload approximately 300 hours of video every minute [11]. This means that many people are familiar with video technology including video equipment and editing software. This familiarity can be an advantage for student teachers to design themselves an educational digital video and they can upload it into online spaces [12].

Video equipment which includes video cameras has started to become 'normalized' [13] among young people in which it is unnoticeable anymore that the use and creation of video has been normalized in everyday lives [14]. This is because many phones are already equipped with video cameras with which people can easily take video using their phones and they do not notice that it has become part of their lives. This suggests that pre-service teachers can easily use their digital phone camera to capture shots and refine the shots with free and user-friendly editing software such as Windows Movie Maker or iMovie. Moreover, video technology has increasingly developed with easier and cheaper video tools which can be accessible for everyone [15]. This ease of access to video technology offers a convenience of producing video as new media for teaching and learning. That said, employee value proposition (EVP) can be feasibly developed in pre-service teacher education as a preparation for digital teaching age.

Digital video technology has been proved effective to assist English language teaching and practice. In teacher education, video production has taken place in teacher professional development. There is some research whose focal point is video production as a means for teachers to perform reflective teaching through video production [16]–[19]. These studies found that assigning teachers into video production fosters their reflective teaching skills and promotes meta cognition skills which can pave the way for teacher professional development. Through video production, teachers are encouraged to capture their teaching practice in a video and critically evaluate their practices through the video [19]. This could be done both for pre-service and in-service teachers since the nature of this video production is producing the video of their teaching practice and prompt them to the critical reflection [17], [20]. Moreover, this video can be a source of electronic portfolio development which is essential for teacher performance standards [21]. That is to say, video production can be such a source of teacher development in the context of reflective teaching for both teacher candidates and in-service teachers. Nevertheless, video production in teacher education can be developed beyond its potential for teacher reflection. In the age of digital technology, video production can be a viable way to develop teachers' digital skills in designing their teaching and learning practice [22]. Hence, this presents a

particular challenge to explore how the previous works of literature investigate the topic of teachers' video production for their own teaching and learning practice.

However, there are only a small number of studies which explore the importance of developing future teachers' digital competence through video production [10], [13], [23]–[25]. In fact, this field of research can be a powerful source for developing pre-service teachers' competence in producing video materials for their digital students. Washington [23] in his thesis found that video technology can afford a subject matter expert (SME) to become the producer of the instructional media. This research was conducted with health educators who were evoked to produce instructional video for health education. The finding of this study suggests that experiencing in designing the educational video developed the experts' understanding of being a producer of videos for instructional learning. Furthermore, teachers can benefit from video production to immerse themselves in pedagogical considerations for designing learning [25]. That said, video production in teacher education plays a part in improving future teacher development. To date, however, little is explored about the potential of educational video production for EFL teacher candidates. It is thus essential to design a teacher preparation workshop to support teachers' professional development in producing educational video for meaningful learning.

Developing pre-service teachers' competency in designing new media requires a training preparation program so that they can practice the production process. One of the practical limitations of educational media production is teacher training [26]. Previous study [27] highlighted the need for adequate training for teachers to help them be prepared for the implementation of digital video technology. Instead of an information delivery approach, an appropriate way to model an instructional design for teachers can be devised through workshops [1], [10], [28]. Workshops can be described as "an intensive, short-term learning activity that is designed to provide an opportunity to acquire specific knowledge and skills" [29]. Through the workshop, pre-service teachers can practically gain hands-on experience in producing an instructional video for teaching. Indeed, before teachers are expected to use media production in class, they need to learn about media production for their own purposes [26], [27], [30]. Therefore, designing a workshop on EVP can be a viable means to prepare pre-service teachers creating their digital video resources.

However, as underpinned in the design based research (DBR) approach, one of the key considerations of design research is being situated in real educational context [31]–[33]. That said, devising the instructional design in education should be based on the educational needs in the real context [34]. To address educational needs in a certain context, in this case is teacher education in state universities in Indonesia, Cennamo and Kalk [35] suggest that identifying learners' needs and characteristics become crucial parts of approaching the design. Thus, the initial step to plan the course is conducting needs analysis [36] to prospective teachers about their perceptions of instructional media development, what they know about EVP and what topics they need to learn. This study therefore investigated the perceptions of pre-service teachers and in-service lecturers about instructional media development and the potential of educational video production for EFL teacher education as the initial step to design a workshop course on EVP for pre-service teachers to develop their skills in producing educational video for EFL learning. To achieve this aim, this study formulates two research questions: i) What are the initial perceptions of pre-service EFL teachers about instructional media development?; ii) What are the pre-service EFL teachers' perceptions about the potential of educational video production for EFL teacher education?

2. RESEARCH METHOD

This analysis was conducted using a semi open questionnaire. Administering of the questionnaire is not constrained by time and places since it can be conducted either directly at a site or a distance [37]. This questionnaire was situated online using an online survey tool called 'Typeform'. The result of this questionnaire analysis will be then used as the basis for designing the course [35], [36].

This needs analysis survey was administered to two different groups of participants which are: EFL pre-service teachers and teacher education lecturers. They were selected purposively as appropriate representatives [38], [39] based on criteria. First, these pre-service teachers should be those who took the IMALD/IMALT course so they would have already learned about instructional development skills. Alternatively, they could have taken the computer-assisted language learning (CALL) or teaching method course so they have a background in pedagogic skills and the use of technology in language learning. Furthermore, this instructional design also approaches some lecturers who taught either IMALT/IMALD or CALL and a program director of language teacher education. For EFL pre-service teachers' needs analysis, we set 21 questions which are divided into eight sections: general information of the participants, views of video in the classroom, prior knowledge and experience of video production, an introduction to EVP, perceived usefulness and feasibility of EVP, intended knowledge, preferred learning design and suggestions. Learners' background, experiences and needs of intended learning are crucial being asked in the analysis phase of course design [35], [40]. In the questionnaire on the lecturer's views, the structure comprises

12 questions with six sections which are the same as the pre-service teachers' questionnaire, but with a slight modification in which prior knowledge, experience, and preferred learning design are removed.

This study generated 16 questionnaires from pre-service teachers and three from the lecturers. To analyze the questionnaire data, we used a thematic analysis, a method which enables the researcher to derive themes and interpret them from the data [41], [42]. Similarly, a thematic analysis can yield rich detail of data [43]. Thus, following the process of thematic analysis which is not truly subsequent, we coded all questionnaire data from those participants to find themes. This process contributes to the meaning of the data which is essential for the thematic categorization and interpretation [44]. As a result, we found three main themes for research questions 1 (RQ1) and three other themes for research questions 2 (RQ2).

3. RESULTS AND DISCUSSION

Based on the results of needs analysis, the participants' perceptions could be defined by three concerns in regard to RQ 1: instructional media development; views of the use of video in the classroom; and prior knowledge and experience in media development. In regard to RQ2, this section scrutinizes the perceptions of participants about the potential of EVP for EFL teacher education. This includes introduction to EVP in relation to IMALT/IMALD and CALL course, the usefulness and feasibility of EVP and the intended learning design of the workshop on EVP.

3.1. The current instructional media development

The results from both pre-service teachers and lecturers suggest that the main topic covered in the instructional materials or media development course (IMALT/IMALD) is developing learning materials and textbooks. In this case, students are invited to discuss types of materials which include authentic, created and supplementary materials, how to use and explore the media for young learners. In addition, at the end, the outcome of this course is assigning students to evaluate and create a course book, for example, producing an EFL book for Indonesian senior high school students. What is more, to implement the use of media, some lecturers sometimes ask students to practice microteaching with their peers.

Furthermore, in particular classes, the current practice of this course requires the students to perform presentation about research on IMALT/IMALD after they read some articles or books. Students acknowledge that this practice could be useful for them to enrich their theoretical understanding of IMALT/IMALD, however, they felt that time for presentation might be more beneficial to be allocated for some practical activities, for example, creating media using technology. They also sometimes found it monotonous to do the presentation over the practice. In this case, the participants suggested performing some constructive activities in learning how to develop materials or media for Indonesian students.

In regard to IMALT/IMALD, another course that supports students' preparation for future teaching is CALL. The pre-service teachers stated that the CALL course covers topics on the use of technology in language learning. It includes theoretical foundation, practical activities of creating technology enhanced media, and online and offline technology exploration for teaching and learning process. Thus, the pre-service teachers perceived that they gained both theoretical understanding and practical knowledge of teaching language skills using technology since they are frequently assigned to create materials or media for teaching using technology, such as creating infographics using Pikhtocart. Today's pre-service teachers are generally from the generation classed as digital natives, who love engaging with technology; that said, they need practical elements of using technology in developing instructional media.

3.2. The use of video in the classroom

Regarding the use of video in the language learning process, 75% of participants perceived that videos are very useful for both students and teachers. For students, this instructional medium enables 'multimedia learning' [45] where it helps students to learn through words and images together. They emphasized that video can visualize the abstract concept into interesting presentation which can enhance students' understanding about a subject, especially speaking skills, listening skills and complex materials such as grammar. For teachers, video can be used as a motivational strategy in teaching to foster students' motivation to be involved in the lesson. This perception is congruent with previous studies [46], [47] that motivation plays a crucial part to ensure the success of language learning. They add that it is a powerful medium for teaching young learner because it functions as entertainment as well.

Despite the perceived usefulness of video, only a few of them create their own instructional video, rather teachers usually use a video from open resources such as YouTube, EFL learning websites, digital video disc (DVD) materials and miscellaneous sources. It might be because they found it easier to take media from any open sources than developing themselves appropriate media for their students.

3.3. Prior knowledge and experience in EVP

Prior knowledge and experience of the intended participants are essential elements to be included in determining the course design [40]. In terms of prior knowledge about video production, 63% of pre-service teachers stated that they have not learned any topics about EVP in neither IMALT nor IMALD. They noticed, however, that they learned technology enhanced media production in the CALL course such as creating a flash video and animated video using Alice animation.

This shows that although it was not exactly learning about EVP, they have experienced how to make media for learning purposes using technology. This relevant experience can be an advantage for me to design the workshop in order to afford them to develop their skills in producing an educational video.

In addition to prior knowledge and experience, participants' familiarity with video technology should be determined. Most pre-service teachers are familiar with both video tools and video editing software. The most common video tools they experience are phone camera, digital single-lens reflex (DSLR) camera, webcam, Windows Movie Maker, Flash Video Player, AVS Video Editor, Adobe Premiere, Vegas, Filmora, Ulead apps, NCH video editor apps, Alice and Camtasia. In response to this, 63% of pre-service teachers said that they have experienced in producing a video either in or out of the context of course. It includes shooting videos for private collection or vlogging. Other videos are made as assignments for certain courses, such as video conference recording, screen recording, news report videos and short drama. That said, EVP will be reasonable to integrate in teacher education.

To answer RQ 1, the results of this needs analysis section suggest that the topics covered in IMALT/IMALD course have afforded them with the opportunity to develop materials for teaching and learning in Indonesian EFL contexts. This is evident in the case of pre-service teachers' creation of a course book for Indonesian EFL schools. Pre-service teachers, however, acknowledged that they have experienced less in designing media using technology which they believe will be promising for digital teaching preparation. Hence, the pre-service teachers saw a necessity for developing their skills in designing digital media corresponding with what they did in the CALL course.

3.4. Introduction to EVP

Educational video production is a novelty for these pre-service teachers since they have not experienced yet in creating an educational video in the context of IMALT/IMALD. With a reasonable guess, however, they could suggest that educational video production is producing video for teaching and learning process which is based on students' needs and considers learning strategies. They identified one example video that they count as educational videos (i.e., Quipper Video).

> "*I'm not really sure. But I think if in Indonesia is such as a Quipper Video. So, it contains many things about the materials that suitable for students*" (Questionnaire excerpt).

Quipper Video is a commercial online learning platform which provided many video resources to help Indonesian students prepare a national exam and university enrolment test. This video, however, might not be accessible for all students since they need to pay a certain amount of money per package. Furthermore, this video platform is merely specialized for learning how to succeed the test. In fact, students may need more meaningful learning beyond test preparation.

In light of the above, 95% of pre-service teachers are likely to produce an educational video. One of the reasons behind their interests is to develop digital skills. They believe that by being involved in the production process of educational video can help them explore how to edit the video into an engaging but educational video and integrate technology with their classroom activity. They also mentioned that the creation of an educational video can help them learn how to innovate new educational media in alignment with pedagogical approaches. Indeed, they suggested that being involved in a video production for teaching and learning at the same time allows them to better understand the subject matter through a meaning-making process. This perception is further supported by previous researchers [48]–[50] who highlighted a meaning-making process as the pedagogical benefits of digital video making.

3.5. Usefulness and feasibility of EVP in EFL teacher education

In response to EVP in teacher education, the pre-service teachers perceived that the integration of EVP into the teacher education is very necessary (81%). The underlying reasons underpinned these views is three-fold which we name as professional development, constructive development and media development.

The process of EVP could be a means to improve teacher professional development, such as developing teachers' digital skills, creativity and digital literacy. In 21st-century teaching, teachers are required to be creative and innovative at the use and creation of technology. In this vein, 95% of pre-service teachers said that EVP will be able to help them prepare for digital teaching. They said that EVP allows them to not only develop their cognitive skills but also to be capable of creating and using digital technology in the

classroom. One highlighted that, "*It is important to know how to use and to make an interesting media for teaching and learning, especially, by using technology*". They believe that it raises teachers' creativity and innovation in developing instructional media other than textbooks. Additionally, they said that it helped them know what the important aspects of making educational videos are. It also enabled them to practice their communication skills as a presenter in the video and production skills as a producer and a director of the production. To develop teaching professionals, teachers also need to collaborate with other teachers, and this course facilitated them to perform collaboration. Indeed, EVP foster their self-efficacy in producing their own educational video for their students.

Regarding constructive development, the participants suggested that it is necessary to let student teachers construct their knowledge by learning to design educational videos, to develop more appropriate materials that fit students and to find out a teaching approach to achieving learning goals. By way of illustration, one of the participants experienced that assigning a video project for students is beneficial since it could engage students' involvement in the learning process and construct students' understanding through a meaning-making process.

More essentially, as video becomes a growing area of content delivery media, it is fruitful to encourage prospective teachers to scrutinize the learning objectives or pedagogic approaches in the existing video resources so that they can refine it into more comprehensive media. Accordingly, they could create their own educational video that fits the contextual teaching. Indeed, it could benefit schools who could not afford professional video producers to develop their instructional media. However, looking at this need, they posited that it is necessary also take into account the university technological resources if the university can facilitate students with video technology to incorporate EVP into the curriculum.

As a proposed idea of EVP for teacher education, 63% of pre-service teachers foresaw the feasibility of EVP to be integrated into the curriculum. In this vein, two lecturers said that EVP can be integrated with Indonesian higher education curriculum, i.e., *Kerangka Kualifikasi Nasional Indonesia* (*KKNI*) that has as one of its parameters, developing skills. They further added that EVP can also be incorporated in the course of education and entrepreneurship (Edu-premiership) to help students create innovative media that simultaneously benefit their entrepreneurship skills. It is beneficial to cultivate students' digital skills to prepare them in today's job competitiveness [3], [4]. Whereas, the other lecturer said it may be unlikely if appointing EVP as a stand-alone course, but alternatively it can be integrated with IMALD/IMALT or the CALL course. That said, with a considerable preparation, EVP could possibly be integrated into teacher education as a supported unit of IMALT/IMALD, CALL or even other potential courses. The feasibility of this integration is basically affected by technological resources, human resources and the institutional system. The pre-service teachers perceived that human resources play a very big part in the success of EVP, so they suggested teacher training as a support system to the implementation of EVP. Likewise, one lecturer acknowledged that there are few lecturers who have expertise in both ELT and CALL. Hence, a workshop can be a productive way to help develop the human resources' competencies in EVP.

3.6. Learning design

To design a course, it is essential to figure out the intended knowledge that the participants would like to learn in the workshop on EVP. Based on the questionnaire, the participants listed some intended topics to learn which are learning objectives and strategies, camera work, pedagogic approaches for video production, additional creative aids in video production and pre- and post-production phase of EVP. They perceived that these topics are very necessary to help pre-service teachers develop their skills in producing new media. There are also some recommended topics including collaboration with professionals, Indonesian culture incorporation, the difference between instructional video and public video and what counts as educational videos. However, they might miss the sense that building the rationale behind the purpose of designing the video is very essential, so discussing the significance of video for teaching and learning should become the foundation topic of EVP. Thus, there are seven topics with some corresponding topics recommended by the participants which we will use to devise the workshop design as shown in Table 1.

Table 1. The potential topics for workshop on EVP

No.	Main topics	Corresponding topics
1	The role of video in EFL learning	Educational video: What counts as educational video
2	Learning objectives	
3	Pedagogic approach	
4	Pre-production	Collaboration with professionals
5	Camera work	
6	Video editing	
7	Creative media development	Indonesian culture incorporation

To design the course, the participants are offered a practical-based learning approach. This is in line with their preference for learning design which assumes that theory needs practice. So, this priority goes, the importance of having practice along with theory can be beneficial in several ways. First, practical learning allows them to do the real implementation of the theory that they have learned. Moreover, they believe that practical learning design can foster their long-term memory. Mayer [45] in his 'multimedia learning principle' ascertains that learning from both words and images can help learners acquire the knowledge in their long-term memory.

In terms of delivery modes, 88% of pre-service teachers wished to learn in a blended environment while only 13% of them preferred physical face-to-face sessions. This result is very compelling; however, due to the internet access which may not be easily available in this context, the blended learning mode may not be fully integrated within the workshop sessions. Rather, this blended learning can be utilized to bring flexibility in accessing learning [51]–[54]. As an example, we could provide the LMS to support the flexibility of accessing materials and communication with the trainer and their peers through the LMS messaging feature or discussion forum. However, it is important to consider that flexible learning can lead to a fruitful environment if it is supported by collaboration [55], [56]. Providentially, 72% of pre-service teachers preferred group work to individual learning. This is in agreement with the initial design of the workshop to promote collaboration among students. Nevertheless, we can also provide space for them to individually reflect on their production experience.

In sum, all these participants offered some suggestion about how the workshop can be better designed. First, the design of the workshop can be devised using project-based approach. In addition, the participants suggested that the workshop would be better if we could provide some examples of today's educational video to bring into the discussion. That said, we can use a constructive approach by bringing samples of educational video and other video so that students could scrutinize what counts as educational video. Indeed, providing a clear guide on an educational video project should be considered as the important aspects of conducting the workshop.

Regarding the RQ2, all participants discerned that the integration of EVP into EFL teacher education is potentially feasible because it can foster pre-service teachers' professional, constructive, and media development. Nevertheless, we should need to consider the technological and human resources which are needed for EVP workshop. By design, the participants recognized that the process of EVP can help construct their knowledge. Thus, they suggested project-based learning as a constructive approach to learning EVP. Previous researchers [57], [58] found that this approach could develop students to be the 'producers of knowledge' since it promotes critical thinking, collaboration and reflection on their video production. In this state, pre-service teachers will experience a learner centered approach which suggests them as the designer of learning and the trainer becomes the facilitator as opposed to the transmitter of knowledge.

4. CONCLUSION

This study analyzed pre-service teachers and in-service lecturers' perceptions about instructional media development and the potential of educational video production for EFL teacher education. The results suggested that the design of the workshop should be devised as constructive learning with a focus on project-based learning to help teacher candidates develop their skills in EVP. The workshop is also suggested to provide some example of today's educational video to bring into the discussion. This indicates that a constructive approach by bringing samples of educational video and other video can be used so that students could scrutinize what counts as educational video. Indeed, providing a clear guide on an educational video project should be considered as the important aspects of conducting the workshop.

In terms of the course design, the participants suggested some intended topics to learn which are learning objectives and strategies, camera work, pedagogic approaches for video production, additional creative aids in video production and pre- and post-production phase of EVP. They also suggest some aspects to enhance the design including accentuating the appropriateness of video within the Indonesian curriculum. The results of this analysis can be beneficial to lecturers or stakeholders who want to design a workshop on EVP for EFL pre-service teachers.

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