



Podcasts as Music Learning Media in the Digital Era 4.0

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Abstract. This study aims to collect and analyze articles related to the use of podcasts as a medium for learning music in various countries. E-learning in the current digital 4.0 era creates active, effective and interactive learning, and is able to improve student learning outcomes. Of the many learning media that can be used, one of them is Podcast. The design used is a literature review. The criteria for articles used are those published in 2009–2022. Based on the articles collected, the ease of podcasting provides many benefits for learning in several subjects and courses, especially in music learning in the digital era 4.0. The results of the study show that using Podcasts in music learning greatly influences the interest, effectiveness and learning outcomes of students and students which are increasing.

Keywords: Podcasts · Music Learning Media · Digital Era 4.0

1 Introduction

In this digital era 4.0, technology has developed very rapidly. Technology is influential in various aspects of life. People who live in the digital era 4.0, are required to integrate with technology such as in the social, economic and educational fields [1, 2]. In the last two years, the Covid-19 pandemic has also greatly affected education and the learning system. The learning system that becomes e-learning or distance learning requires educators or teachers to master digital skills so that they can overcome difficulties in distance learning that cannot be done face-to-face.

E-learning in the digital era 4.0 is the provision of online subject matter through various media or even online consultations that can be held as learning innovations, thus creating active, effective and interactive learning, and able to improve student learning outcomes. But unfortunately, lately e-learning learning is starting to feel boring for students because the learning methods provided by educators tend to be monotonous and assign tasks in the form of ‘that-that’ so that it makes students bored in following the learning process. There are several reasons why educators have not maximized e-learning, such as still stuttering about virtual technology or are already proficient but not taught or have taught but the method is not appropriate so that the results are not optimal [2]. In the learning process that is happening a lot today, starting from the teacher giving assignments in written form in general and sent via online media such as email or

WhatsApp to using virtual media (Google Meet and Zoom applications) which are often constrained by poor network quality in the area. Students are given a short working time limit and keep repeating every day without innovation making students bored quickly and having an impact on students' lack of interest in learning. Moreover, if the teacher cannot be present during class hours, it will further hamper the learning process which does not run smoothly [3].

There are many learning media that can be used by teachers, one of which is Podcast. Podcast or Podcasting is a new word that combines the words iPod and broadcasting is a technology that allows listeners to subscribe, download, and listen to audio or audiovisual files as they wish. Podcasts as learning media have been widely researched and discussed in various previous studies. The use of Podcasts as a learning medium during this PJJ and can be used as a supplementary media for learning mathematics [4]. Podcast-based audio media that has been developed into a history learning media that can be used during history learning, especially for Sriwijaya University History Education students by providing convenience in learning [5]. Podcasts are used to provide a variety of content sources for researchers and doctors [6]. The material that PGPAUD students want to hear from the Faculty of Education, Trunojoyo University, Madura in the Podcast learning media is the subject of learning strategies, parenting and thesis [1]. Podcasts are considered proficient in teaching a second language. Based on the point of view of second language learners, Podcasts are able to make students more confident so that they can improve their language skills which include reading, writing, listening, and speaking skills [7]. These studies apply Podcasts as a medium for learning mathematics, history, medicine, PAUD and language. It is a pity that it is still rare to explore or discuss and apply Podcasts as a medium for learning art and culture, especially the art of music in Indonesia. Many music subject matter can be processed and made in such a way in the form of podcasts to make it more interesting. Therefore, this article will examine how to use Podcasts as a music learning medium in various countries.

2 Methods

This article uses the method of literature review. Literature review is to provide a framework related to new findings and previous findings to identify indications of whether or not there is progress from the results of a study through comprehensive research and interpretation of the results of the literature related to a particular topic in which to identify research questions by searching and analyzing relevant literature using a systematic approach [8]. The criteria for the articles used are those published in 2009–2022.

3 Discussion

3.1 What's Podcast?

One of the digital technologies that are very trending today is Podcast. Podcasts have emerged as a technology of great interest to academics, practitioners and other technologists. Podcasts are digital audio recordings uploaded on the internet so that they can

be transmitted, played, and downloaded directly to consumer media devices, including portable music players, computers, laptops, and smartphones for the purpose of being listened to by as many people as possible. Podcasting, originally known as “audioblogging”, began in the 1980s which was later found in the Podcasting model in 2004. Podcasting emerged from a fusion of “iPod” and “Broadcast”, as it started with the iPodder, which made it possible to download internet radio broadcasts to the iPod, which is a music listening device from Apple.

Along with its development, podcasts are no longer just audio recordings. According to Indriastuti [9], there are three types of Podcast devices, namely: audio podcasts, enhanced podcasts, and video podcasts. Audio Podcast is the most popular type of Podcast because audio files are compressed in MP3 digital format (MPEG-1 or MPEG-2 Audio Layer III) so that they can be run on all audio player devices that support the MP3 format. Enhanced Podcast not only produces sound but also produces a running audio file image, while Video Podcast produces video files which are mostly in MP4 (MPEG-4) format [9].

3.2 Support Applications for Podcast Channeling

In the distribution and management of Podcasts, it can be reached in several applications that support it. Podcasts can be listened to and downloaded through digital podcasting platforms, such as iTunes, Spotify, Google Podcasts, anchor FM, SoundCloud, castbox, googlePodcast, podbean, podcast addict, Podcast go, various websites that provide a place for podcast distribution and so on.

Before uploading, Podcast recordings are taken using a mobile voice recorder application on an Android or iOS smartphone, then they can be edited and modified with the author’s voice/music/voice effects using an audio platform, Digital Audio Workstation (DAW), which are free such as Audacity and Garageband as well as available also paid ones such as Cubase, Study One, Pro Tools, Adobe Flash Professional CS6, and others. These applications can also be directly used to record sound with the help of headphones or earphones.

Some of these applications are very popular and widely used by the public, especially at the age of teenagers. Therefore, it is very possible to make Podcasts as a learning medium for both students and students.

3.3 Utilization of Podcasts as Learning Media

This podcast can also be used in the field of Education and learning. Podcasts are used as a variety of learning and learning media with simple and easy-to-find playback devices and can be listened to anywhere and anytime. Learning media is a learning resource to convey or distribute messages, materials and information provided by the teacher to students in a planned and innovative manner, so as to create a conducive learning environment where the recipient can carry out the learning process effectively, actively, creatively, efficiently and fun.

Podcasts as learning resources allow students to learn from lecturers and podcasting sources. In addition, podcasts can encourage academic performance by enabling students to study individually but also, assist academic performance by enabling lecturers to tailor

instruction to suit student needs [10]. Podcasts as a medium in learning help academic performance between teachers and students, so they must be made taking into account the needs of students/students, curriculum, syllabus as well as the duration and ability of students who can learn individually. In making Podcasts, teachers need to have digital skills in order to create interesting and fun Podcasts. So, students and students can more easily understand the material discussed and will be more enthusiastic in learning.

Teachers innovatively enrich student learning activities with Podcast technology. Considering that students are millennials who are sensitive and keep abreast of technological developments, the presence of Podcasts as a learning supplement media can increase students' enthusiasm and learning experience. As stated by Hutabarat [11] in the results of research which shows that based on exposure to research and best practices that have been carried out by a number of universities, it can be understood that Podcasts for e-learning are useful as learning supplement media for students, in addition to face-to-face lectures in class and reading textbooks. Students can better understand concepts, theories and applications that may not be available during class. In addition, podcasts can be an alternative medium for distance learning [11].

The benefits of Podcasts as learning media are that students can better understand concepts, theories, alternative media for distance learning, save bandwidth because the audio file size is relatively smaller (for audio podcasts), downloaded, stored on mobile phones/smartphones, can be played anytime and anywhere., the internet data quota is not consumed much, it can be shared on any social media such as WhatsApp, websites, other Podcast distribution applications, and between teachers and students can share experiences and interact through Podcasts, even students can learn to make their own Podcasts.

To create a Podcast, it is necessary to design in order to produce a good Podcast. Podcast design for learning is to analyze Podcast needs and content, accommodate student interest in the learning process so that students are encouraged to master the material being taught, determine Podcast objectives, determine time duration, style used (formal or informal), consider Podcast delivery through a Podcast type framework, design or design Podcasts, use Podcasts and distribute Podcasts.

Among the various podcasts that have been produced, Lamb and Johnson [12], summarize and suggest five podcasts that can be used in school classes. First, to choose a quality podcast in the classroom, it is necessary to first understand the audience, which is to clearly understand the interests and needs of students. Comparing Podcasts created for elementary school students and Podcasts for high school students, there are differences in the content itself, depth, and delivery methods. Second, the qualitative aspect of the podcast content must be evaluated. Attention students and motivate them to ask questions, practice, and act. Third, podcaster credibility must be considered. Fourth, Podcast design usability and technical aspects must be considered, such as Podcast good content and pay attention to Podcast duration. For optimal use, short single draft podcasts are great. In addition, it is necessary to carefully check the volume and sound quality of the Podcasts, the file size with respect to the internet transmission speed for easy downloading and whether there are any other technical issues that are interfering with the use of Podcasts. Finally, check to see if there is any additional material that can be used with Podcasts, such as other educational items, such as scripts, study guides, and links to websites.

3.4 Podcasts as Music Learning Media

In Indonesia itself, for now, it is still rare to research and discuss Podcasts as a medium for learning music. This is evidenced by the lack of articles and journals that explore podcasts in music learning. In fact, to make Podcasts, actually music teachers themselves are already commonplace using supporting applications such as DAW applications. Just how creative and creative teachers are to make it more interesting both from audio and audiovisual. In addition, there are many places or places to channel Podcasts, so that there is still two-way interaction and communication between teachers and students, either through online conversations or sharing Podcasts. The Podcast distribution channel will also not be lost if it is not deleted by the Podcaster (in this case the teacher), so it can be played back at any time or can be downloaded at any time.

Meanwhile, from the author's search results, developed countries such as Hong Kong, South Korea and the UK have long applied Podcasts as a music learning medium in terms of articles that have explored this. The researchers of the article conducted research and tested the Podcast product on students and/or students.

In On Tam's [13] study, students majoring in music in Hong Kong participated in a study on the effectiveness of podcasts for teaching music and visual arts in higher education. The teacher makes Podcast types, namely: informational (I), demonstration (D), and related activities or tasks. Information podcasts deliver PowerPoint references, handouts or presentations in video format with audio commentary by teachers. Demonstration podcasts demonstrate the procedures or skills involved in running computer software such as Band in a Box, SPSS and Adobe InDesign. Teachers capture computer screens and their voices during demonstrations in lessons or develop special videos to demonstrate the steps involved in using the software. For Podcasts related to learning activities and assignments, students are required to answer the questions asked in the Podcast, complete the LKS after watching the Podcast or provide feedback by producing their own Podcast. The three Podcast materials are: informational: music technology and creative music making, demonstration: computer-based music technology, and related activities or assignments: pedagogical approaches to music teaching and learning.

The results revealed that overall, the students rated the provision of demonstration podcasts, activity podcasts or related assignments as the most effective, while information podcasts were considered the least effective. Compared to demonstrations, students rated the information podcast as less effective. However, Podcasts that integrate information with learning activities or assignments get higher ratings. In this case, students can see the relationship between the Podcast and their learning or assessment. They feel engaged and motivated to watch Podcasts. The students also mentioned the importance of explicitly demonstrating the relevance of Podcasts to their studies. This shows that the effectiveness of using podcasts for learning is determined not only by the unique advantages of podcasting itself, but also by the teacher's teaching strategies [13].

Regarding the presentation of the Podcast, the students suggested that more audio and visual effects such as animations could be added. The teacher also needs to pay attention to his voice and tone. Students like relatively short Podcasts and they prefer Podcasts as edited lesson summaries, further explanations of difficult concepts or brief overviews of what is taught in the lesson. The majority of students suggest that educational podcasts should be 15 min long at most.

In another study in South Korea, Mi Young [14], podcasting can also be used effectively for students to acquire musical skills. It's great for a variety of instrumental classes, vocal vocalizations, piano accompaniment, and master classes. Among them, for example, recorder or dance classes for elementary school students or college students. Teachers can demonstrate the relationship between the holes and sounds of an instrument, proper fingering, breathing techniques, and tongue through Podcasts. If it is produced in the form of a Podcast in the form of video, it is better because students can immediately see the correct posture, breathing and playing techniques along with an oral explanation from the teacher. In addition, students can have a picture of the sound to play, and by using Podcasts in practice, they can get feedback on their performance by comparing their own voice with the listening model provided. For example, on the PortableRecorder.ca site. This site divides the performance level into 3 stages and divides each stage into 7 different levels of difficulty, such as music score material, rhythm exercise, melody, accompaniment. All of this is made in the form of an audio or audiovisual podcast. Students can download Podcasts according to their level and study independently either individually or as a group activity [14].

Podcasting can also be used to provide music that cannot be covered due to time constraints in music listening classes or music history. For example, to meet the needs of learners with a high interest in music by listening to all songs outside of class time or to deepen learning about listening to music in relation to a particular composer or era. Podcasting can expand his performance repertoire by discovering chamber music works that are not known to the professor. As a result of continuous learning using podcasting for this purpose, it shows the reaction that various musical works can be memorized.

Bolden [15] stated that researchers found Podcasts beneficial for students by enabling them to acquire digital competence and digital wisdom. in an undergraduate popular music program in the UK that uses Podcasts to deliver material, students report that Podcasts motivate students, enable student interaction, offer time-shifting learning, engagement, and personalized learning. In addition, Bolden added that through Podcasts, between teachers and students are involved to discuss all types of music subject matter, build and share assignments or projects in audio or video file formats, such as the following: 1. Music and narration are knitted together in theoretical and structural analysis. of musical works. 2. Presentation of audio story or drama with underscoring music. 3. Biographies of the lives and times of composers or performers, or interviews with musicians, interspersed with musical examples. 4. Critical analysis of performances by oneself or others narrated on recorded performances [15].

The main content core of podcasting is audio. According to Durbridge [16], based on his research on students at UK Open University which identified the main advantages of audio for education, it was found that students responded to audio/sound such as in understanding spoken language, analyzing music, listening to the voice of lecturers/educators. This strongly supports Podcast media for music learning, because the principles of music and podcasts are very suitable, namely audio or sound based. In addition, making Podcasts requires a music software application, namely DAW (Digital Audio Workstation) that supports editing, mixing and mastering such as Cubase, Logic Pro, Audacity, and so on. This is a challenge for teachers to hone their digital skills to be able to use the application so that they can produce Podcasts. Moreover, henceforth,

it is no longer the teacher who prepares the Podcast. Students can also make Podcasts with high creative abilities and knowledge of technology, so that later they will be presented and the results will be used as learning media at other times. This means, students improve their abilities from being able to easily understand Podcasts to being able to make Podcasts themselves.

For students who can create their own Podcasts, it has been revealed in the research results of Kerseetter [17], that students create types of Podcasts for learning such as: understanding music in relation to history and culture. For example, an assignment could be researching the life and music of Percy Grainger. After obtaining the relevant data, the student must then create a well-written manuscript with an introduction, photos, web links and/or music. By using Podcasts as assignments obtained students can also share them with other students, parents and administrators through posting to the internet in various forms [17]. This is supported by Coutinho & Mota [18], that although Podcasts are managed by teachers, the published content is mostly developed by students. Therefore, students become producers of information on the web and have an active role in the construction of a 21st century global society. The results show that Podcast activities engage students in the learning process, making them aware of the new role they will play in the global information society [19].

3.5 The Effect of Podcasts on Music Learning

The influence of Podcasts in music learning is also expressed in several studies that have tested Podcast products to students. One of them, the results of research on the learning process by applying Podcast-based audio learning media in arts and culture subjects with material for the development of western music in class XI MIPA 1 took place in 3 stages of learning/meeting. At the first meeting, the teacher conducted conventional learning (Zoom Meeting) with a duration of 45 min, then continued with the Pretest. At the second meeting, the teacher conducted learning using Podcast media which lasted for 15 min. Then at the third meeting, the teacher gave Posttest questions to find out student learning outcomes after media treatment. In the process of media treatment runs very effectively because the media is very interesting and easy to use besides that it can increase students' comprehension. Pretest and Posttest results which have increased from low student learning outcomes to high after giving treatment in the form of application of Podcast-based audio learning media [3].

Learning using Podcasts has an influence on the development of students' potential. As Benjamin & Nahachewsky [20], point out, the potential of podcast creation is to enable learners to: reconnect through personal stories and music with experiences that can inform personally meaningful knowledge construction; exercise creativity and self-expression through building and sharing unique representations of learning and self; connect with others and collaboratively develop knowledge; combining text and music to find and communicate meaning in different elements; and expand mental capacity through thinking aloud and repeatedly listening to their own words.

Meanwhile, Cooper, S., Dale, C., & Spencer, S. [21], research conducted at the University of Wolverhampton in which iPod and podcasting were used as delivery and assessment mechanisms in the Bachelor of Popular Music degree program. A sample of students studying the program was interviewed to explore their involvement with the

technology and the resulting curriculum materials. The results found that although not a substitute for lectures, iPod and podcasting were effective tools to support student learning. Benefits include motivating learners, enabling student interaction, offering time-shifted learning engagement and personalized learning.

From several research results, the authors conclude that the influence of Podcasts as a music learning media is very effective to support student and student learning. The benefits include motivating students, enabling teacher and student interaction, streamlining the teaching and learning process that allows time-shifting and personalization of learning.

4 Conclusion

Based on several previous studies, that the ease of podcasting provides many benefits for learning in several subjects and courses in the current digital 4.0 era. In Indonesia, podcasts in the form of audio and audiovisual as their own music learning media, have not been widely studied. Many materials can be processed into a Podcast. The materials are music technology, instrumental classes, vocal vocalizations, piano accompaniment, and master classes, music history, music and narrative knitted together in a theoretical and structural analysis of musical works, presentation of audio stories or plays with underscoring music, biographies of life and time of composers or performers, or interviews with musicians, interspersed with musical samples, critical analysis of performances by oneself or others narrated on top of recorded performances. By using Podcast in music learning greatly affects the interest, effectiveness and learning outcomes of students and students which are increasing based on several research results. Therefore, this article informs the understanding, benefits and influence of Podcast as a learning medium, especially music learning and researchers hope that this article can be used as a reference for further research.

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