The Development of E-Puzzle Learning Media on the Bhinneka Tunggal Ika Topic in Shaping the Profile of Pancasila Students in Grade X of MAN 1 Banyumas

Apriana Nurlaeli[1], Wildan Nurul Fajar[2], Elly Hasan Sadeli[3]
[1,2,3]Universitas Muhammadiyah Purwokerto

ARTICLE INFO

ABSTRACT

This study aims to develop e-puzzle learning media for the "Bhinneka Tunggal Ika" topic and to assess the feasibility of using this e-puzzle learning media to shape the profile of Pancasila students in grade X at MAN 1 Banyumas. The research method used in this study is Research and Development (RnD) with the Borg and Gall development model. The sample consists of class X-13. Data collection techniques include observation, interviews, questionnaires, pretests, and post-tests. Data analysis includes validation analysis, practicality analysis, and effectiveness analysis of the media. Based on the research, the development of e-puzzle learning media for the "Bhinneka Tunggal Ika" topic to shape the profile of Pancasila students is deemed suitable for use as a learning media. This is demonstrated by increased knowledge acquisition, with an average pretest score of 62.2% and an average post-test score of 88.4%. The validity and practicality test results have an overall average of 83.81%, indicating a highly feasible category. The effectiveness test also yielded a 100% learning achievement rate, categorized as highly effective. The calculation of N-gain indicates an increase in learning outcomes, with a score of 0.70, categorized as high.

Corresponding Author:
Apriana Nurlaeli
Universitas Muhammadiyah Purwokerto
Email: apriananurlaeli02@gmail.com

1. INTRODUCTION

Human efforts to expand knowledge in order to shape values, attitudes, and behaviors are exemplified by the pursuit of education. Through education, one can engage in activities to develop the potential and skills of learners, which are carried out through the learning process as preparation for living in society, nation, and state. It is agreed that education is an educative and training activity to prepare learners for further levels (Hamalik, 2015). In the field of education, the teaching and learning process is inevitably inseparable from instructional media, which plays a role as a tool to facilitate the learning process and as an aid for educators to convey knowledge and materials to learners. With the advancement of increasingly sophisticated technology, the utilization of technology essentially aims to facilitate human work in daily life. For instance, digital technology is a concrete example that humans today can be said to be inseparable from their grasp. As we know, in the era of globalization, every individual is required to have an active, creative, innovative, and participatory spirit in society, both internationally and globally (global society), which is undoubtedly full of competition (Priyanto et al., 2017).

This is in line with the concept of 21st-century learning, where Indonesian education needs to reconstruct the education paradigm to remain relevant in the era of global education (Faiz & Faridah, 2022).

Moreover, there is currently a curriculum renewal, namely the Merdeka Curriculum, which is the new name for the Prototype Curriculum. It includes three structures of learning implementation, one of which is the Strengthening Project for the Pancasila Student Profile. The Pancasila Student Profile stated in the Merdeka Curriculum is useful for developing the character and abilities of learners in carrying out learning activities. Philosophically, character formation through character education is needed and should be provided to learners in order to achieve the nation's educational goals. This is in line with the views of Ki Hajar Dewantara that education cannot be separated from the values of character (moral virtues), the physical, and the mind of learners who will later become "humans" in society (Wawan, 2022).

In relation to strengthening character education in learners through the Pancasila Student Profile, there is an important subject in schools called Pancasila and Citizenship Education (PPKn), as it is aimed at shaping and preparing the younger generation to actively participate in community activities (Sadeli, 2017). Citizenship education is one of the pillars of character formation and national identity, meaning that citizenship education educates citizens to become good citizens and smart citizens in order to face the developments in the competitive era (Zulfikar & Dewi, 2021).

In order for the strengthening of the Pancasila Student Profile through one of the subjects, Pancasila and Citizenship Education (PPKn), to be realized, the selection of media is indeed crucial in order to have an impact on learners. Learning media that are suitable for the needs of learning activities will create an effective and efficient learning process, allowing the material delivered by the teacher to be optimally absorbed by the learners. However, the ideal condition sometimes differs from reality. Teachers tend to utilize concise and practical methods without having to laboriously apply various teaching methods, even when it comes to developing instructional media. Thus, there is still a minimal development of instructional media in Pancasila and Citizenship Education (PPKn) subject.

The challenges faced by teachers in the development of instructional media include the insufficient availability of teaching aids in schools and the inadequate proficiency of teachers in utilizing instructional tools. Furthermore, other issues such as inconvenience, costliness, inability, unavailability, and lack of appreciation are also prevalent. Difficulties in finding media related to the subject matter and designing technology-based media are also problems faced by teachers in developing instructional media (Raihany et al., 2022). Similar problems are also encountered by teachers at MAN 1 Banyumas. Based on the conducted observation, the researcher obtained information that the utilization of media at MAN 1 Banyumas is not yet optimal. Often, teachers only use PowerPoint presentations and video screenings in the learning process, resulting in a lack of variation and suboptimal utilization of technological advancements.

In relation to this matter and considering the current phenomenon, learners often neglect studying and instead engage in playing games. It would be beneficial if the games created and played by learners are educational games, as they can support and enhance the teaching and learning activities, as well as enhance the understanding, knowledge, and skills of the learners, while also capturing their interest and motivating them to learn. One media that can be used as an educational game and is well-known is e-puzzle. It should be noted that, according to Yudha (Rosiana Khomsoh&Jandut Gregorius, 2013), a puzzle is an image divided into pieces with the aim of sharpening thinking skills, cultivating patience, and developing the ability to share. Moreover, puzzle media can also be referred to as educational games because they not only provide entertainment but also stimulate the brain and train the speed of thought and problem-solving abilities. As for electronic puzzles, they are educational games where problem-solving relies on intelligence and creativity displayed in a computer-based program (Arsyad, 2015). Therefore, the development of electronic puzzle media falls into the category of computer-based media, specifically CAI (Computer Assisted Instruction) and CMI (Computer Managed Instruction).

1.1 Definition of Learning Media and E-puzzle Media

Media originates from the Latin language, specifically the word "medis," which literally means "middle" or "intermediary" (Arsyad, 2007). Media encompasses everything that is used to convey a message from the sender to the receiver, in order to stimulate the thoughts, feelings, attention, and interest of the learners (Sadiman et al., 2018). On the other hand, according to Gerlach and Ely (Arsyad, 2011), media refers to individuals, materials, or events that create conditions enabling learners to acquire knowledge, skills, or attitudes. In this regard, teachers, books, and the school environment serve as media. Moreover, another definition according to (Miarso, 2011) states that media pembelajaran is everything that is utilized to convey a message that can stimulate the mind, emotions, and attention, thereby fostering an intentional, purposeful, and controlled learning process.

One of the instructional media that can be used is e-puzzle. It is worth mentioning that according to Yudha (Rosiana Khomsoh&Jandut Gregorius, 2013), a puzzle is an image divided into pieces with the purpose of sharpening thinking skills, cultivating patience, and fostering sharing abilities. This aligns with the idea that puzzle media is a game that requires patience and perseverance in solving it. By gradually engaging in puzzle

solving activities, learners will develop a habit of being diligent, calm, and patient in completing tasks (Djamarah, Bahri & Zain, 2006). Not far from the statement above, electronic puzzle is an educational game where problem-solving is done using intelligence and creativity displayed in a computer-based program. Therefore, the development of electronic puzzle media falls into the category of computer-based media, namely Computer Assisted Instruction (CAI) and Computer Managed Instruction (CMI) (Arsyad, 2011).

The objectives of puzzle media include enhancing group collaboration skills, improving children's ability to recognize shapes, and training and enhancing children's analytical abilities towards a problem (Jamil, 2016). The use of puzzle media for learners can provide symbols and knowledge because they cannot think abstractly yet, thus direct experiences or concrete objects should be given. Meanwhile, according to Sunarti (Nuranisa et al., 2018), the objectives of using puzzle media are as follows:

a. Introducing learners to several simple strategies in problem-solving.
b. Training speed, accuracy, and precision in problem-solving.
c. Instilling a never-give-up attitude in facing challenges.

Through puzzle media, learners can sharpen their minds, match shapes, cultivate patience, and solve problems. There are several benefits of using puzzle media according to (Suciaty, 2010), including:

a. Exercising the brain: Learners' brain intelligence will be trained as they engage in puzzle-solving activities, which stimulate brain cells to solve problems.
b. Training hand-eye coordination: Playing puzzles trains the coordination between the eyes and hands, as children have to match puzzle pieces and assemble them into a complete picture.
c. Developing reasoning skills: Solving puzzles in human form enhances learners' reasoning abilities, as they deduce the logical placement of the head, hands, legs, and other body parts.
d. Cultivating patience: Puzzles also foster learners' patience in overcoming challenges.
e. Enhancing knowledge: Through puzzles, children can learn. For example, puzzles about colors and shapes enable children to learn about different colors and shapes. Knowledge acquired through this method is often more impactful for children compared to memorized knowledge.

1.2   Research Methods

This study is a research and development (R&D) study. The development research method is used to produce a specific product and test the effectiveness of the product (Sugiyono, 2013). In this development research, the Borg and Gall development model is utilized, consisting of 10 stages, including: 1) Potential and issues, 2) Data collection, 3) Product design, 4) Design validation, 5) Design revision, 6) Product testing, 7) Product revision, 8) Usage testing, 9) Product revision, 10) Mass production. However, due to the researcher's limitations, the product development only reached 6 stages, specifically the product testing stage.

The subjects involved in the trial of e-puzzle media development consist of 3 subjects, namely: (1) Expert validators, who are experts in the subject matter and media, assess the suitability of the product for use. (2) PPKn teacher of class X MAN 1 Banyumas to provide feedback in the form of evaluation and suggestions to determine the practicality of using e-puzzle as a learning media. (3) Students of class X-13 MAN 1 Banyumas, totaling 36, as subjects in the media usage trial. The students were asked to use the e-puzzle media developed by the researcher to determine the practicality of the developed media.

The data collection methods used in the conducted research are as follows: (1) Observation, conducted by the researcher by directly observing the learning process of the students in class X. (2) Interview, conducted with the PPKn teacher of class X MAN 1 Banyumas. The researcher conducted an interview by asking several questions related to the learning process, as a result of which the researcher identified the challenges being faced and provided solutions to overcome them. (3) Questionnaire, given to the PPKn teacher of class X and the students of class X-13.

2.   DISCUSSION AND CONCLUSION

The design and development of the e-puzzle Kebhinekaan employ the Articulate Storyline application, complemented by other applications such as Canva and CorelDraw. The images used are tailored to the Bhineka Tunggal Ika material sourced from the internet. Aside from games, the e-puzzle Kebhinekaan also features a menu dedicated to materials. Consequently, participants are required to read the materials prior to engaging in the e-puzzle game. Here is the appearance of the e-puzzle Kebhinekaan:

Table 1. Illustration of E-puzzle Diversity

The appearance of the E-puzzle of Diversity	
 The initial appearance of the e-puzzle Kebhinekaan involves filling in personal information.	 The second appearance contains a warm welcome to the e-puzzle.
 The appearance of the user instructions.	 The menu appearance that consists of materials and games.
 The presentation of materials in the e-puzzle Kehinekaan consists of six slides.	 Question number 1, if the answer is correct.
 Question number 2, if the answer is incorrect.	 Question number 3.

Question number 4

Question number 5

Question number 6

Question number 7

Question number 8

Question number 9

Question number 10

The display of the score for the e-puzzle Kebhinekaan.

The above image represents the display of the e-puzzle Kebhinekaan. The questions in the e-puzzle Kebhinekaan consist of 10 questions with a time limit of 5 minutes. The students can access the given link to participate in the games. When the students begin answering and their response is incorrect, they are not allowed to retry. However, the e-puzzle will continue to progress to the subsequent question until completion. Therefore, questions that are answered incorrectly will not receive any points. Once all the questions have been answered, the final score will be displayed. Based on the trials conducted by the participants, it can be determined whether the e-puzzle Kebhinekaan is suitable or not as a learning medium in shaping the Profile of Pancasila Students. Thus, the results indicate that the development of the e-puzzle Kebhinekaan as a learning medium for the Bhineka Tunggal Ika material is relevant in shaping the Profile of Pancasila Students, as implemented in MAN 1 Banyumas for the X-13 class consisting of 36 participants. Consequently, the e-puzzle Kebhinekaan can be utilized as a learning medium. Based on the conducted research, the e-puzzle yields satisfactory outcomes and is deemed suitable as a learning medium in shaping the Profile of Pancasila Students.

This is evidenced by the trial results and evaluations from expert media validators and subject matter experts, as well as the PPKn teacher of X class and the X class students themselves. Here are the research findings:

Table 2. Assessment of the Quality of Learning Media and Student Feedback

No.	Assessment of the Quality of Learning Media and Student Feedback	Percentage	Assessment Categories
1.	Validation by Expert Subject Matter Lecturer	83,97%	Good
2.	Validation by Expert Media Lecturer	73,94%	Excellent
3.	Assessment of PPKn Teacher	92,33%	Excellent
4.	Assessment of Student Responses	85%	Excellent
Average Percentage		**83,81%**	**Excellent**

(Source: Data Processing, 2023).

Based on the above table, the attainment of the assessment conducted on the trial subjects of the product can be determined. The individual subject's achievements are then accumulated, resulting in an average percentage of 83.81%. According to Sugiyono (2012), the assessment level ranging from 80.1% to 100% falls under the "highly suitable" category. Therefore, based on the percentage of the final assessment results, it can be concluded that the development of the e-puzzle Multiculturalism learning media on the topic of Bhineka Tunggal Ika in shaping the Profile of Pancasila Students is deemed "highly suitable" for use as a learning media for grade X at MAN 1 Banyumas. In addition to the students providing an assessment of the Multiculturalism e-puzzle media, other activities carried out by the students include completing a pretest, followed by a product trial, and then a posttest. The pretest and posttest questions consist of a total of 20 items, which are aligned with the Bhineka Tunggal Ika topic and related to the Profile of Pancasila Students. Here are the results of the pretest and posttest scores for the Profile of Pancasila Students:

**Table 2. Attainment of Pretest and Posttest Scores for the Profile of Pancasila Students**

No.	Dimensions of the Profile of Pancasila Students	*Pretest* %	*Posttest* %
1.	Having faith, being pious towards the Almighty God and possessing noble character	64,8	84,3
2.	Global multiculturalism	63,2	97,2
3.	Collective collaboration	62,5	94,4
4.	Independent	51,9	91,7
5.	Critical thinking	62,2	82,2
6.	Creative	68,5	80,6

(Source: Data Processing, 2023).

Based on the above table, it illustrates the attainment of the Student Profile of Pancasila before and after implementing the e-puzzle of Global Multiculturalism as a learning medium on the subject of Bhineka Tunggal Ika, which has undergone pretest and posttest stages. The data above has been adjusted in the form of percentages. The results were obtained from pretest and posttest questions consisting of 20 items. In more detail, the pretest results of the Student Profile of Pancasila are as follows: 1) Faithful, devoted to the Almighty and possessing noble morals obtained an average score of 64.8%, 2) Global Multiculturalism obtained 63.2%, 3) Collective Collaboration obtained an average score of 62.5%, 4) Independent obtained an average score of 51.9%, 5) Critical Thinking obtained an average score of 62.2%, and 6) Creative obtained an average score of 68.5%. Therefore, from the above scores, the overall average score obtained is 62.2%.

Meanwhile, the posttest scores or after the implementation of the Global Multiculturalism e-puzzle in more detail are as follows: 1) Faithful, devoted to the Almighty and possessing noble morals obtained a score of 84.3%, 2) Global Multiculturalism obtained an average score of 97.2%, 3) Collective Collaboration obtained an average score of 94.4%, 4) Independent obtained a score of 91.7%, 5) Critical Thinking obtained a score of

82.2%, and 6) Creative obtained an average score of 80.6%. Therefore, based on the above scores, the overall average score obtained is 88.4%. Based on the explanation above, it can be observed through a diagram of the average scores of students' achievements both before and after the implementation of the Global Multiculturalism e-puzzle learning medium. Here are the average scores presented in diagram form:

The Average Scores Obteined in the Dimensions of the Student Profile of Pancasila
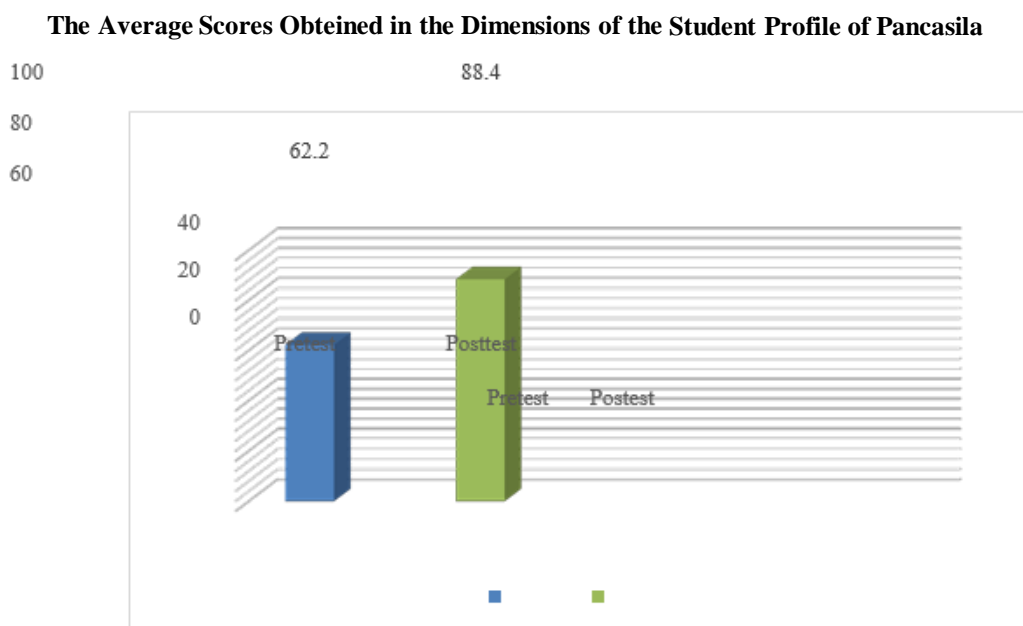
Image 1. The Average Scores Obtained in the Dimensions of the Student Profile of Pancasila

Based on the data presented in the above diagram, it can be observed that there is an improvement in scores before and after the implementation of the Global Multiculturalism e-puzzle learning medium. The increase in the overall average score obtained in the pretest is 62.2%. Meanwhile, in the posttest, the average score obtained is 88.4%. Therefore, based on the average scores obtained from both the pretest and posttest, it can be concluded that the Global Multiculturalism e-puzzle learning medium has shown an increase in scores from the pretest to the posttest. Thus, students feel that the Global Multiculturalism e-puzzle, in the subject of Bhineka Tunggal Ika, is relevant in shaping the Student Profile of Pancasila.

Therefore, it can be concluded that the development of learning media produces a product in the form of learning media, namely the illustrated e-puzzle game of Kebhinekaan with the Android operating system on the subject of Bhineka Tunggal Ika. The development of the Kebhinekaan e-puzzle learning media is deemed relevant to be implemented as a learning medium in shaping the Student Profile of Pancasila. This is demonstrated based on the research results of the pretest and posttest scores. The results of these scores have shown an improvement, with an average pretest score of 62.2%, while the average posttest score is 88.4%

The development of the Kebhinekaan e-puzzle learning media is deemed suitable for use as a learning medium in shaping the Student Profile of Pancasila. This is demonstrated based on the research results through validity and practicality tests, with an overall average score of 83.81%, which falls under the category of highly suitable. Furthermore, the effectiveness test, based on the pretest and posttest, resulted in a learning completion percentage of 100% in the highly effective category. Additionally, through the calculation of N-gain, it can be determined that there is an improvement in learning outcomes, with a score of 0.70 in the excellent category.

REFERENCES

Arsyad, A. (2007). *Media Pembelajaran*. Jakarta: Raja Grafindo Persada. Arsyad, A. (2011). *Media Pembelajaran*. Jakarta: Rajawali Pers.

Arsyad, A. (2015). *Media Pembelajaran* (A. Rahman (ed.). Jakarta: Raja Grafindo Persada.

Djamarah, Bahri, S., & Zain, A. (2006). *Strategi Belajar Mengajar*. Rineka Cipta.

Faiz, A., & Faridah, F. (2022). Program Guru Penggerak Sebagai Sumber Belajar. *Konstruktivisme : Jurnal Pendidikan Dan Pembelajaran*, *14*(1), 82–88. https://doi.org/10.35457/konstruk.v14i1.1876

Hamalik, O. (2015). *Kurikulum dan Pembelajaran*. Bumi Aksara. Jamil, S. (2016). *Permainan Cerdas dan Kreatif* (Cet. 1). Penebar Plus.

Miarso, Y. (2011). Menyemai Benih Teknologi Pendidikan. Jakarta : Kencana. In *Kencana Prenada Media*

Group.

Nuranisa, L., Triani, M., Hidayah, W. A., Aurelia, P. M., Sanusi, D. A., Nasyatul K, N., & Khomaeny, E. F. F. (2018). Puzzle Sebagai Media Bermain Untuk Melatih Kemandirian Anak Usia Dini. *Early Childhood : Jurnal Pendidikan*, *2* (2a), 57–65. https://doi.org/10.35568/earlychildhood.v2i2a.28

Priyanto, E., Kartikawati, R., & Fajar, W. N. (2017). Membangun Karakter Mahasiswa Melalui Lesson Study

Mata Kuliah Pendidikan Pancasila. *Prosiding Konferensi Nasional Kewarganegaraan III*, *November*, 176–182. http://eprints.uad.ac.id/9778/

Raihany, V., Widjaya, S. D., Meliya, R., & Andi, A. (2022). Problematika Guru Dalam Pengembangan Media Pembelajaran. *Jurnal Pendidikan Sejarah Indonesia*, *8*(2), 122. https://doi.org/10.17977/um0330v5i2p122-128

Rosiana Khomsoh&Jandut Gregorius. (2013). Penggunaan Media Puzzle Untuk Meningkatkan Hasil Belajar Siswa Dalam Pembelajaran Ilmu Pengetahuan Sosial Di Sekolah Dasar. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, *2*(1), 1–11. https://jurnalmahasiswa.unesa.ac.id/index.php/jurnal-penelitian-pgsd/article/view/3119/1817

Sadeli, E. H. (2017). Pengaruh Pembelajaran Pendidikan Kewarganegaraan Dalam Membina Melek Politik Siswa Sma Negeri 2 Purwokerto. *SOSIOHUMANIORA: Jurnal Ilmiah Ilmu Sosial Dan Humaniora*, *2*(1). https://doi.org/10.30738/sosio.v2i1.487

Sadiman, A., Harjito, Haryono, A., & R, R. (2018). *Media pendidikan : pengertian, pengembangan, dan pemanfaatannya*. PT Rajagrafindo Persada.

Suciaty, A. (2010). *Ragam Latihan Khusus Asah Ketajaman Otak Anak Melejitkan Daya Ingatnya*. Diva Press. Wawan. (2022). *Program Guru Penggerak Sebagai Sumber Belajar*. Institut Agama Ma'arif NU Metro Lampung.

Zulfikar, M. F., & Dewi, D. A. (2021). Pentingnya Pendidikan Kewarganegaraan Untuk Membangun Karakter Bangsa. *JURNAL PEKAN : Jurnal Pendidikan Kewarganegaraan*, *6*(1), 104–115. https://doi.org/10.31932/jpk.v6i1.1171