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Developing students' civic responsibility using blended learning model with an asynchronous system

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Abstract

The development of technology and the world of education today requires complex thinking. Technology can be used to make the learning process easier, more interesting, and more enjoyable. However, learning must continue to focus on the elements of competency achievement that must be achieved and the humanist element. The blended learning model with synchronous and asynchronous systems is one model that can be used in today's technology-based learning era, especially asynchronous systems. This study aims to determine the effectiveness of asynchronous learning in increasing the students' civic responsibility at one of the universities in Bandung City. Experiments in research are considered more appropriate for answering the research objectives. The research subjects were students of the environmental engineering study program (experimental class) and food engineering study program (control class). The results showed that asynchronous learning was more effective for increasing students' civic responsibility, with an average post-test score of 91.50.

Keywords: Asynchronous; blended learning; civic responsibility

Introduction

The development of Internet technology had a significant influence during the Industrial Revolution 4.0, which served as the initial entry point into the era of Society 5.0. The use of



Internet media is now inextricably linked to various human lives around the world (Surahman, 2013). Education is one of the areas of life that is currently required to be adaptable to the use of the Internet in learning. The world of education is one aspect of life that is heavily reliant on the development of Internet technology today. The development of the Internet in the world of education is used in the learning process as a learning resource, learning media, and evaluation media. The use of internet technology in learning is known as TPACK (Technological Pedagogical Content Knowledge), which implies that a framework that identifies knowledge is required for teachers to teach effectively with a technological framework. According to Herring et al. (2016), TPACK is a framework for understanding and describing the type of knowledge required by a teacher to streamline pedagogical practice and understand concepts by integrating technology into the learning environment.

The use of Internet technology in the learning process has led to many learning models being developed to integrate the learning process, including teacher-student interactions. One of the relatively new learning models in the field of education, particularly higher education, is blended learning. This learning model combines a face-to-face learning system with e-learning that can be accessed by anyone, anywhere, and at any time (Sudarman & Mulawarman, 2018). Blended learning uses various methods in the learning process, including the use of learning technology, to get the best results. Combining online and face-to-face learning is a good learning strategy to use, to help students, develop skills and simplify the learning process (Setiyani, 2019). This refers to the learning process in various settings, including face-to-face and online. When it works well, this combination of different types of learning accelerates and improves the learning process (Jumaini et al., 2021)

Blended learning has various learning patterns in its implementation, one of which is synchronous and asynchronous learning patterns. This is based on the constructive approach theory of blended learning theory (Chaeruman, 2013). Blended learning systems, both synchronous and asynchronous, can be used in the learning process at all levels of education. Synchronously, learning occurs with others at the same time. Asynchronously, the learning process can be carried out independently (Fahmi, 2020). The synchronous learning pattern can be defined as a learning process that occurs simultaneously but in different spatial dimensions, such as video conferencing, audio conferencing, and chatting. Virtual synchronous is an extension of live synchronous in which technology is used to participate in online learning. Meanwhile, asynchronous learning can be defined as a learning process that takes place in different dimensions of space and time (anytime and anywhere) using learning media that allows students to learn independently, such as print media in the form of books, magazines, modules, and so on, and digital media in the form of .doc, .ppt, .pdf, .html, .flv, and so on (Chaeruman, 2013).

Blended learning, which includes synchronous and asynchronous learning patterns, can be applied to all learning processes, including Civic Education courses in tertiary institutions (Cahyono et al., 2022). Each university must respond positively to the complexities posed by online learning challenges at the higher education level to ensure the development of high-caliber graduates (El-Rumi, 2022). Through civic education, each needs to develop knowledge, attitudes, and skills to be prepared to face the larger context of social life (Belladonna & Anggraena, 2019). Civic education is one of the subjects that emphasizes three abilities in students: civic knowledge, civic skills, and civic disposition. According to (Erwin, 2011), students must master the following competencies when learning citizenship education.

First, students can demonstrate civic knowledge. In other words, those who have had civic education can understand nationality and citizenship. Based on the National Standards and Civics Framework for the 1988 National Assessment of Educational Progress (NAEP) in Branson (1998), this component of civic knowledge is manifested in the form of five critical questions that must be asked regularly as a source of learning about civic education. The five questions are as follows: (a) What is the life of citizenship, politics, and government? (b) What are the basic principles of the political system? (c) How does the constitution's government

embody the goals, values, and principles of democracy? (d) How is a country's relationship with other countries and its position in international affairs? (e) What is the role of citizens in a democracy?

Second, students must improve their civic dispositions, as individuals who understand the complexities of nationality and citizenship will be able to apply their civic knowledge in everyday life. Civic disposition can also refer to a citizen's personality or character. Quigley & Bahmueller (1991) define civic disposition as the citizen's attitudes and habits of mind that are conducive to the democratic system's healthy functioning and common good. Civic disposition includes concepts of characteristics such as civility (respect and civil discourse), individual responsibility, self-discipline, civic-mindedness, open-mindedness (openness, skepticism, recognition of ambiguity), compromise (conflict of principles), and loyalty to the nation and its principles (Quigley & Bahmueller, 1991). The development of civic disposition will enable the political process to run effectively to advance the public interest and contribute to the realization of the fundamental ideas of the American political system, such as the protection of individual rights. In this concept, civic responsibility is a component of the development of civic disposition that a citizen must possess.

Third, students must improve their ability to act the most, namely in civic skills, where those at this level have been able to apply it in the form of skills such as people who can play a role in making public policies that can be useful for many people, such as legislators, or people who can supervise the running of government, such as activists of non-governmental organizations. Branson (1998) describes that civic skills include intellectual skills and participation skills.

1. The intellectual skills expected of citizens in learning civic education include:
2. The ability to identify allows citizens to recognize something that is still hazy.
3. The ability to differentiate and compare.
4. The ability to clarify something that has a common thread.
5. The ability to determine the origin and essence of something.
6. The ability to describe objects, processes, institutions, functions, objectives, tools, and qualities in both clear and vague terms, as well as to make written and verbal reports about their characteristics.
7. The ability to explain well the results of identification, descriptions, and clarification about the incident's causes, nature, purpose, function, role, and meaning.
8. The ability to evaluate positions to use criteria or standards to make decisions about the strengths and weaknesses of the position of a particular issue, the purpose of the position, and the means achieved to achieve that goal, and take an attitude/position by using certain criteria or standards to determine choices or make new choices in social and state life, put forward arguments on attitudes taken, and respond to non-agreed-upon arguments.

Meanwhile, participatory skills include:

1. The ability to collaborate and participate in decision-making and policy formulation.
2. The ability to explain an important issue clearly in front of decision-makers or policymakers.
3. The ability to form political alliances, negotiate, compromise, and reach an agreement.
4. The ability to deal with conflict.

Based on the explanation, this study focuses on developing the character of civic responsibility, which includes forms of civic disposition, more specifically the character of student responsibility in the civic education learning process in tertiary institutions through a blended learning process with an asynchronous system. Improving students' responsibility in

the civic education learning process focuses on increasing student's sense of responsibility for completing their performance assignments and being skilled in being accountable for the results of their assignments in the concept of their rights and obligations as citizens, which is one of the important components to becoming a good citizen. This aspect of civic knowledge is concerned with academic-scientific abilities derived from various political, legal, and moral theories or concepts (Mulyono, 2017).

The content of the character of being responsible in learning civic education in tertiary institutions concerns nine aspects, namely: 1) implementing the rule of law, 2) respecting the rights of others, 3) having information and attention to the needs of the community, 4) exercising control over the leaders they choose in carrying out their duties, 5) communicating with representatives in schools, government, local government, and national government, 6) participating in an election, 7) paying taxes, 8) testifying in court, and 9) being willing to serve in the military (Center for Civic Education, 1994). Therefore, this study aims to determine the development of civic responsibility character through blended learning with an asynchronous system or independent and collaborative online learning.

Method

This study used quasi-experimental research with two classes as data collection materials, namely Class A from the environmental engineering study program and Class C from the food technology study program in the engineering faculty at one of the universities in Bandung City. Class A received treatment by implementing citizenship education courses using an asynchronous learning pattern, whereas Class C received treatment by implementing a synchronous learning pattern on the same material, namely the material on citizens' rights and obligations. According to Creswell (2013), a quasi-experimental design is an experimental design that is carried out without randomization but involves placing participants into groups; the design of the quasi-experimental approach used is a one-group pretest-posttest design.

Therefore, the main data in this study were pretest and post-test results of learning outcomes with the application of synchronous and asynchronous blended learning models in the civic education course, to determine which mode is most effective in increasing civic responsibility in students of food engineering and environmental engineering study programs at one of the universities in Bandung City.

The experiment was carried out in a civic education course on the relationship between citizens' rights and obligations. The experiment lasted only one day, on Wednesday, 21 September 2022, from 07.00 - 08.40 in Class C (food engineering) using the synchronous learning model and until 23.00 in Class A (environmental engineering) using the asynchronous learning model. The pretest and post-test questions were the same, and they were given to Class A, which had 42 students, and Class C, which had 37 students. The questions took the form of nine essay questions designed to evaluate students' understanding of citizen responsibility. According to Center for Civic Education (1994), the nine essay questions were developed in response to five achievement indicators of civic responsibility, namely.

1. Are you used to enforcing the rule of law?
2. Do you respect the rights of others?
3. Do you have information about and concern for the needs of the community?
4. Do you have authority over the leaders who select to carry out their duties?
5. Do you communicate with representatives from schools, local governments, and national governments?
6. Have you ever voted in an election?
7. Do you pay taxes?
8. Do you testify in court?

9. Do you want to serve in the military?

Furthermore, it is presented in Table 1 on the results and discussion. The nine essay questions were tested for validity and reliability in advance by 20 students from the Pancasila and Civic Education study program to look at the percentage of similarities between the respondents' answers and the answer keys. The criteria for validity testing were to compare r_{count} to r_{table} (0.344). If $r_{\text{count}} > 0.344$, the item is said to be valid. The instrument validity test results showed that there were seven questions with r_{table} values greater than 0.344 than r_{count} , indicating that the questions were valid, but there were two questions with r_{count} less than 0.344, indicating that the questions were invalid namely questions 6 and 9. The two questions were invalid because the question sentence was too broad, resulting in multiple interpretations from respondents; however, the question was still used by changing the question sentence. Furthermore, Cronbach's alpha is used in the reliability test. According to (Sugiyono, 2016), If the reliability coefficient (Cronbach's Alpha) is greater than 0.60, the statement is considered reliable. Cronbach's Alpha for the reliability test was 0.802, indicating that all instruments were reliable. The pretest and post-test results are then processed using the N-Gain test, which is defined by (Sundayana, 2018) as the difference between the pretest and post-test values. The N-gain test was carried out to find out the average difference between synchronous and asynchronous blended learning on the increase in civic responsibility of students of environmental engineering and food engineering at one of the universities in Bandung City.

Results and Discussion

Based on the results of the study and the processing of research data, the following can be presented.

Table 1.
Average Post-test Results

Indicators of Civic Disposition	Results of Blended Learning			
	Class C (Synchronous)		Class A (Asynchronous)	
	Pretest	Post-test	Pretest	Post-test
The ability to enforce the rule of law,	47.92	82.38	56.85	92.07
The ability to respect the rights of others	58.73	87.80	60.30	88.02
The ability to have information and concern for the needs of the community	58.89	89.83	55.78	91.80
The ability to have authority over the leaders he selects in carrying out his duties	61.78	86.98	68.87	89.58
The ability to communicate with representatives from schools, local governments, and national governments.	64.75	90.86	70.89	95.80
The ability to vote in an election	58.73	87.80	60.30	88.02
The ability to pay taxes	47.92	82.38	56.85	92.07
The ability to testify in court	47.00	82.12	56.13	90.23
The ability to serve in the military	64.15	90.83	70.83	94.80
Average	56.65	86.77	61.86	91.37

The study was conducted by providing nine questions about citizen relations with the state, which were derived from indicators of civic responsibility based on (Center for Civic Education, 1994), namely: 1) Are you used to enforcing the rule of law? 2) Do you respect the rights of others? 3) Do you have information about and concern for the needs of the community? 4) Do you have authority over the leaders he selects to carry out his duties? 5) Do you communicate with representatives from schools, local governments, and national governments? 6) Have you ever voted in an election? 7) Do you pay taxes? 8) Do you testify in court? 9) Do you want to serve in the military? The table above shows that blended learning with an asynchronous system resulted in a higher average civic responsibility character value than a synchronous system.

Based on the data presented above, it can be explained that developing the character of citizens can be achieved using blended learning with an asynchronous system, as evidenced by the average posttest score of students in the Civic Education course on citizen relations with the state, which was equal to 91.37, compared to 86.77 for the synchronous system. This indicates that blended learning with an asynchronous system had a significant influence on increasing students' civic responsibility, particularly in the civic education course. This statement was supported by the average post-test score of students in the civic education course using the blended learning model with an asynchronous system, 91.37, which could be broken down by achievement of civic responsibility indicators as described below.

The first indicator of civic responsibility was the ability to enforce the rule of law, the student's post-test score was 92.07, indicating that after participating in learning using an asynchronous system, they had a very good understanding of aspects of citizenship life, in terms of obeying the law. This was demonstrated by the average student's post-test answers, which received a score of 92.07. The second indicator of civic disposition was the ability to respect the rights of others, which received a score of 88.02, indicating that students could respect the rights of others. The third indicator was the ability to have information and concern for the needs of the community. Even this third indicator revealed that students' civic disposition was excellent, with a score of 91.80. The fourth indicator, which was about the ability to have authority over the leaders he selects in carrying out his duties, performed very well, with an average post-test score of 89.58. The fifth indicator, which was the ability to communicate with representatives from school, local government, and national government, was also very good, with an average post-test score of 95.80. The ability to vote in an election, the sixth indicator, was also very good, with an average post-test score of 88.02. The seventh indicator, namely the ability to pay taxes, was also very good, with a post-test average score of 92.07. The eighth indicator, the ability to testify in court, was also very good, with a post-test average score of 90.23. The ability to serve in the military, the ninth indicator, was also very good, with an average post-test score of 94.80.

The nine indicators of civic responsibility performed very well when compared to the results of student posttests in the experimental class using blended learning with an asynchronous system. This was influenced by the freedom factor and the freedom of students to work on post questions. Because asynchronous learning allows for greater flexibility, assignments, and test questions can be completed anywhere, with anyone, and at any time according to the time settings established by the supervising lecturer (Cahyono et al., 2022).

This indicated that students could work on test questions under the time set by the supervisor, as well as work on them with their friends, more freely see various types of references, and discuss, so that the answers to the test results had a better tendency than the learning pattern using a synchronous system. This is in line with (Heinze et al., 2007) who stated that Blended learning is a combination of face-to-face and e-learning systems that can be used by anyone, anywhere, at any time. The term blended learning refers to a harmonious and integrated mix or combination of face-to-face and online learning elements. Blended learning with an asynchronous system was an online learning pattern using various types of e-learning that could be used by anyone, anytime, and anywhere, and provide more flexible learning space and work on tests and assignments, and more adaptable than both direct and online synchronous or face-to-face learning patterns. Students were given less freedom to study independently and look for references to work on assignments and test questions as a result of synchronous learning. This was because they also had to focus on studying the material presented and discussed by the supervisor during the synchronous process via video conferencing or virtual face-to-face.

The findings of this study can be used to develop learning, particularly in Pancasila and Civic Education courses at tertiary institutions that combine technology-assisted learning patterns. Hence, the Civic Education course learning process can be carried out in a variety of ways, such as online and offline learning patterns or video conferencing, while still measuring

the achievement of the course's objectives, namely, to make smart and good citizens. Smart citizens are those who can maintain public order, obey the law and the government, and uphold the principles of democratic values. Meanwhile, in this case, good citizens have at least three main indicators: they are good to their God, good to their country, and good to their fellow citizens. With this research, the concept of smart and good citizenship can be trained through a learning process that employs both asynchronous and synchronous modes. The importance of Pancasila and Civic Education in shaping students' values and attitudes cannot be understated. These subjects play a crucial role in promoting critical thinking, tolerance, and good citizenship among the youth. By instilling these values early on, students are better equipped to navigate the complexities of modern society and contribute positively to their communities (Zemmrch, 2020). Despite the significance of Pancasila and Civic Education, the current state of these subjects in schools may not be as effective as desired. This study aims to identify key findings that can help improve learning outcomes in Pancasila and Civic Education. By analyzing the impact of teacher training and curriculum development on student engagement and understanding, we can work towards creating a more robust educational framework that empowers students to become informed and responsible citizens.

Conclusion

Based on the data presentation and discussion of the research results presented above, it is possible to conclude that the learning process of blended learning with an asynchronous system was better than a synchronous learning system. This was demonstrated by the average post-test results of students who met very high criteria across all nine indicators of civic responsibility, namely: 1) Are you used to enforcing the rule of law? 2) Do you respect the rights of others? 3) Do you have information about and concern for the needs of the community? 4) Do you have authority over the leaders he selects to carry out his duties? 5) Do you communicate with representatives from schools, local governments, and national governments? 6) Have you ever voted in an election? 7) Do you pay taxes? 8) Do you testify in court? 9) Do you want to serve in the military? With an average score of 91.37. This implies that blended learning with an asynchronous system can increase civic responsibility character abilities mastered by the students of the environmental engineering study program.

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