

Students' Learning Interest in Citizenship Education Courses in the Food Nanotechnology Study Program at AKA Bogor Polytechnic

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ABSTRACT

Education is a deliberate activity designed to foster positive attitudes and personalities among students, enabling them to utilize their potential to play a role in society. Education is a conscious and planned effort to create a learning environment and process that allows students to actively develop their potential, fostering spiritual and religious strength, self-control, personality, intelligence, noble character, and the skills needed for themselves, society, the nation, and the state. This study aims to determine students' interest in civics courses. The results are expected to broaden their knowledge and understanding of matters related to interest in civics courses. Based on the results and discussion, it can be concluded that students' learning interest in the citizenship course in the Food Nanotechnology Study Program at AKA Bogor Polytechnic is low. This can be seen from the percentage results using simple calculations and interpretation guidelines according to Suharsimi Arikunto, which results in the obtained value being in the interval of 41-60%.

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1. INTRODUCTION

Education is a systematic process comprising various interconnected components aimed at achieving educational goals [1]. It is also essential for developing human character and capabilities, from birth to the end of life [2]. Education is a conscious, planned effort to create a learning environment and process in which learners actively develop their potential—cultivating spiritual and religious strength, self-control, personality, intelligence, and noble character, as well as acquiring skills necessary for themselves, society, the nation, and the state [3].

The education referred to here is higher education—the level following secondary education—which encompasses diploma, bachelor's, master's, doctoral, professional, and specialist programs conducted by higher education institutions based on Indonesian national culture [4, 5]. Act No. 12 of 2012, Article 33, paragraph 2, concerning Higher Education stipulates that study programs must possess curricula and learning methods aligned with the specific educational program [6].

Effective course delivery is typically influenced by courses that align with the implemented curriculum [7, 8]. In this context, course planning and organization are tailored to the objectives, content, and instructional materials established by higher education designers. Furthermore, paragraph (3) states that the Higher Education Curriculum referred to in paragraph (1) must include the following courses: a. religion; b. Pancasila; c. civics; and d. Indonesian language.

Effective course delivery is typically influenced by the presence of courses that align with the implemented curriculum. Preliminary observations revealed that the instructional process faces several classroom challenges, such as learning-related emotions, student cognitive engagement [9], resource and time constraints, and disparities in student abilities [10]. Additionally, the instructional process lacks appeal because some courses are perceived as inconsistent with the Food Nanotechnology Department's graduate competency standards at Politeknik AKA Bogor. Based on the background outlined above, this study was designed to determine students' learning interest in the Civic Education course within the Food Nanotechnology study program at Politeknik AKA Bogor.

2. METHOD

This study employed a descriptive quantitative research method [11-14]. The descriptive quantitative approach is a non-experimental method used to describe a phenomenon based on numerical data without manipulating research variables. This approach enables researchers to systematically obtain an overview of the characteristics, perceptions, abilities, or conditions of a population. In educational research, the descriptive quantitative approach has been employed to identify student perceptions, levels of conceptual understanding, and learner abilities [15-17]. Quantitative research produces research results in the form of numbers from statistical calculations. Descriptive quantitative research, on the other hand, analyzes numerical data from descriptions of a phenomenon or event under study to derive its meaning.

Research Subject and Data Sources

Research subjects are data sources, which can be individuals or objects used to obtain accurate information. Data sources are the subjects from whom data can be obtained. There are three types of data sources: 1. Person, which can provide data in the form of verbal answers through interviews or written answers through questionnaires. The person data sources in this study are lecturers teaching learning-based courses and students majoring in Educational Management who have taken courses in learning-based courses. 2. Place, which is a data source that presents images of still and moving objects. The data source comes from the research location, namely students in the 2022/2023, 2023/2024,

and 2024/2025 academic years at the Bogor Polytechnic Food Nanotechnology Study Program.

Data collection technique

The data collection techniques used in this research are: a). Questionnaire, to obtain data, the author distributed a questionnaire to respondents who had taken citizenship education courses, a questionnaire to all samples to be filled in and then the results were analyzed [18]. b). Document study: Data relevant to the problem being researched is then documented. Documentary studies are used to determine student achievement data in civics courses [19-21].

In determining the scoring of research results, each statement is given a value. The Likert scale is used as a measure of the attitude scale with four categories as follows [22, 23]:

Table 1. Alternative scores of student questionnaire answers

Category	Answer Score
Completely Agree	5
Agree	4
Neutral	3
Disagree	2
Completely Disagree	1

Population and Sampling

The population of this study was 149 (one hundred and forty-nine) students from 2022/2023, 2023/2024, and 2024/2025 academic years of the Food Nanotechnology Study Program at AKA Bogor Polytechnic. Of the 149 (one hundred and forty-nine) respondents who completed the online questionnaire, 42 (forty-two) were used as the sample and were used as the sample. The response rate for this study was $42/149 \times 100\% = 28.1879\%$, as detailed in the following table:

Table 2. Population and Sample

No	Academic Year	Population	Sample
1	2022/2023, 2023/2024, 2024/2025	149	42
	Total	149	42

Instruments and Data Collection

This study used primary data. Data were collected using a questionnaire that provided written statements to respondents. Respondents then responded to the statements. This questionnaire was closed-ended, with answer choices provided. This closed-ended questionnaire used a Likert scale. This Likert scale is used to assess the attitudes, opinions, and perceptions of individuals or groups regarding social phenomena. This scale uses negative response alternatives with scores of 5, 4, 3, 2, 1, and positive responses with scores of 1, 2, 3, 4, 5. Respondents simply mark their answers with a cross (x). The following is a sample questionnaire for students' learning interests:

Table 3. Student Learning Interest Questionnaire Research Instrument Outline

Variable	Indicator	Item Number
Interest	1. Feelings of Enjoyment	1,2,3
	2. Attention in Learning	4,5,6
	3. Interest	7,8,9
	4. Understanding the Benefits and Functions of Learning Materials	10,11,12
Total		12

Table 4. Statements and Answers for the Student Learning Interest Questionnaire Research Instrument

No.	Statement of	Answer				
		SD	D	U	A	SA
1.	Feeling Happy and Enthusiastic During the Citizenship Lectures					
2.	Feeling Happy During the Face-to-Face Citizenship Lectures					
3.	Enjoying citizenship because it relates to the values of Pancasila, the 1945 Constitution of the Republic of Indonesia, the Unitary State of the Republic of Indonesia, and Bhinneka Tunggal Ika					
4.	Not wanting to be distracted during face-to-face citizenship lectures					
5.	Never Late for Face-to-Face Citizenship Lectures					
6.	Always attend face-to-face citizenship lectures					
7.	Civics lectures would be more interesting if they were implemented in real life situations					
8.	Face-to-face civics lectures are an interesting subject for me					
9.	Civics lectures are always interesting because they relate to social, national and state life					
10.	Civics lectures are compulsory lectures in the university curriculum					
11.	Civics lectures serve to shape students' character and morals, fostering a sense of patriotism					
12.	Civics lectures discuss the values contained in Pancasila as a guideline for life in society, the nation, and the state					
Answer Choices						
SD		: Strongly Disagree				
D		: Disagree				
U		: Undecided				
A		: Agree				
SA		: Strongly Agree				

Analysis Techniques

The data analysis process begins by reviewing all data collected from various sources, processed through the distribution of questionnaires. The collected data is then analyzed, interpreted, and summarized in language that is easy to understand, logical, and in line with the research being discussed [24-26]. To analyze the data obtained through the questionnaire distribution, the following steps were taken:

Validity Test

According to Nana Syaodih, "instrument validity indicates whether the results of a measurement reflect the aspect being measured." In other words, validity testing is conducted to determine the extent to which the data contained in the questionnaire can measure the level of validity of the questionnaire. A questionnaire is considered valid if the questionnaire's statements are able to reveal what it is measuring.

Reliability Test

According to Nana Syaodih, reliability relates to the level of consistency or consistency of measurement results. Reliability testing is used to determine the trustworthiness of test results. A test can be said to have a high level of trustworthiness if it can produce consistent results.

Percentage

The research results are intended to obtain an average score for each aspect of the study based on the data obtained through the questionnaire, thus determining the general level of student learning interest in the personality development course. Therefore, the interpretation guidelines according to Suharsimi Arikunto are as follows:

Good, if the obtained value is in the 81-100% interval.

Adequate, if the obtained value is in the 61-80% interval.

Inadequate, if the obtained value is in the 41-60% interval.

Poor, if the obtained value is in the <40% interval.

Data Analysis

Data analysis in this study was assisted by the Statistical Product and Service Solutions (SPSS) program.

3. RESULTS AND DISCUSSION

The research results have been summarised in Table 5. Table 5 presents the percentage score for each questionnaire item, the average score for each indicator, and the corresponding category based on the predetermined interpretation criteria. This presentation allows a clearer understanding of how each dimension of learning interest contributes to the overall result

Table 5. Mean Indicator Values and Value Categories

Indicator	Value Item (%)	Mean (%)	Category Value
Feeling of Pleasure	1. $26/42 \times 100 = 61,90$	53,97	Less
	2. $21/42 \times 100 = 50,00$		
	3. $21/42 \times 100 = 50,00$		
Attention in Learning	4. $21/42 \times 100 = 50,00$	50,00	Less
	5. $21/42 \times 100 = 50,00$		
	6. $21/42 \times 100 = 50,00$		
Interest	7. $22/42 \times 100 = 52,38$	57,14	Less
	8. $26/42 \times 100 = 61,90$		
	9. $24/42 \times 100 = 57,14$		
Knowing the benefits and functions of the learning materials	10. $22/42 \times 100 = 52,38$	54,76	Less
	11. $22/42 \times 100 = 52,38$		
	12. $25/42 \times 100 = 59,52$		

Based on the simple statistical calculations above, it can be seen that the learning interest in the Citizenship lectures among students in the Food Nanotechnology Study Program at the Bogor AKA Polytechnic is in the low category. The explanation of the percentage values for each learning interest indicator is as follows:

1. Enjoyment is in the low category, as seen from the percentage results using simple calculations and interpretation guidelines according to Suharsimi Arikunto, which resulted in 53.97%.
2. Attention to learning is in the low category, as seen from the percentage results using simple calculations and interpretation guidelines according to Suharsimi Arikunto, which resulted in 50.00%.
3. Interest is in the low category, as seen from the percentage results using simple calculations and interpretation guidelines according to Suharsimi Arikunto, which resulted in 57.14%.
4. Understanding the benefits and functions of the subject matter is in the low category, as seen from the percentage results using simple calculations and interpretation guidelines according to Suharsimi Arikunto, which resulted in 54.76%.

3.1 Results

Figure 2 shows that 26 (twenty-six) respondents, or 62%, agreed that they felt happy and enthusiastic during the citizenship lectures.

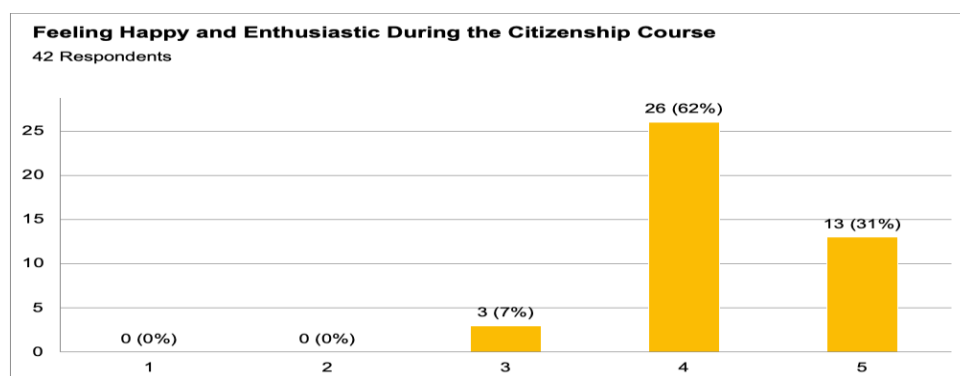


Figure 2. Feeling Happy and Enthusiastic During the Citizenship Lectures

Figure 3 below shows that 21 (twenty-one) respondents strongly agreed that they felt happy during the face-to-face citizenship lectures.

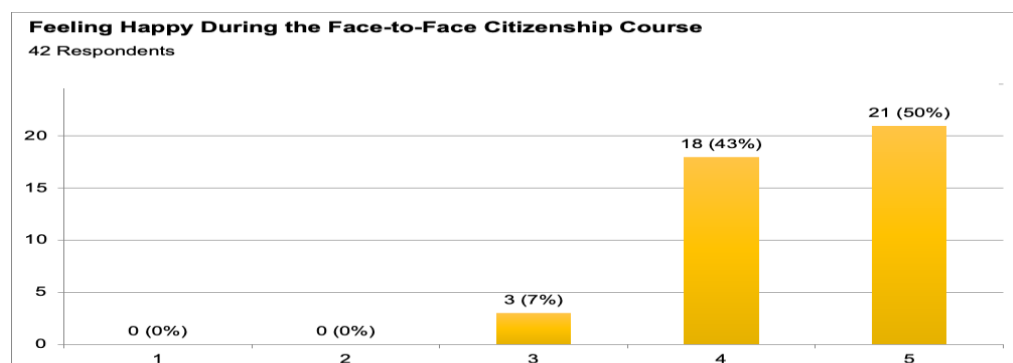


Figure 3. Feeling Happy During the Face-to-Face Citizenship Lectures

Figure 4 shows that 23 (twenty-three) respondents agreed that they felt interest and enjoyment while studying citizenship.

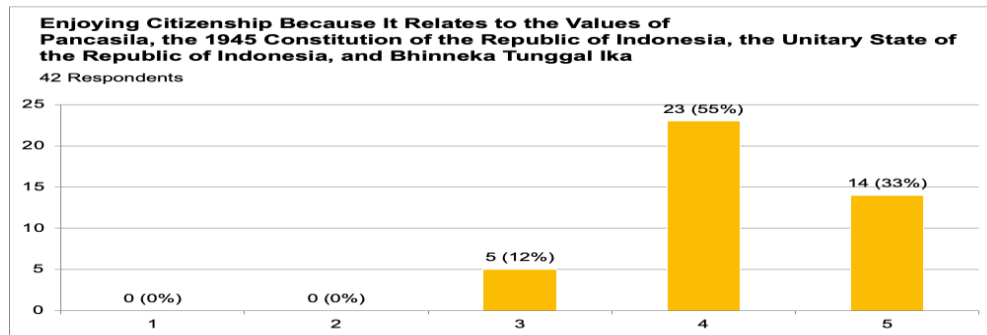


Figure 4. Enjoying citizenship because it relates to the values of Pancasila, the 1945 Constitution of the Republic of Indonesia, the Unitary State of the Republic of Indonesia, and Bhinneka Tunggal Ika

Figure 5 below shows the data on interest and attention in learning. Twenty-one respondents agreed that they did not want to be distracted during civics lectures.

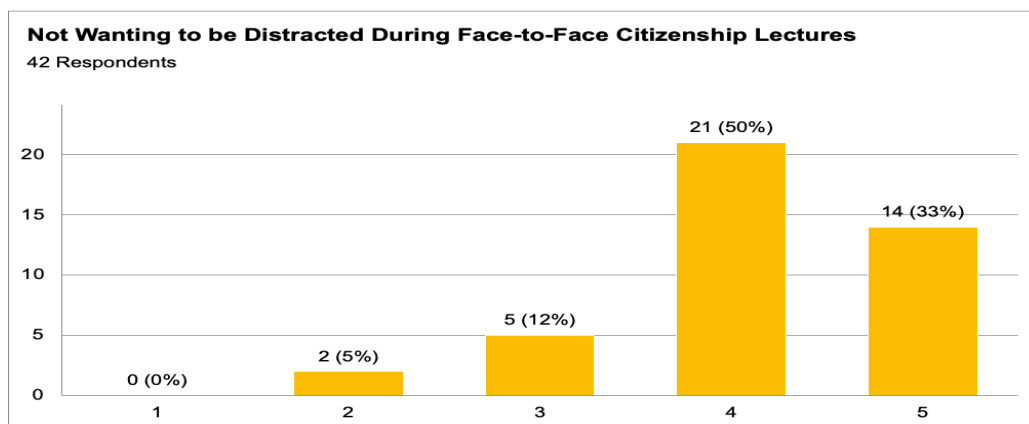


Figure 5. Not wanting to be distracted during face-to-face citizenship lectures

Meanwhile, regarding their interest in learning, 21 (twenty-one) respondents, or 50% of the total respondents, strongly agreed that they were never late for face-to-face citizenship lectures. Figure 6 below shows this.

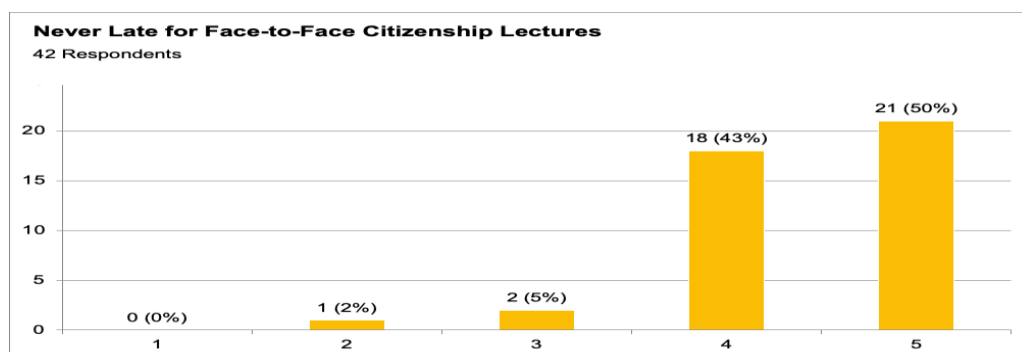


Figure 6. Never Late for Face-to-Face Citizenship Lectures

Figure 7 below shows the number of respondents interested in learning who stated they always attend face-to-face citizenship lectures. Twenty-one respondents strongly agreed.

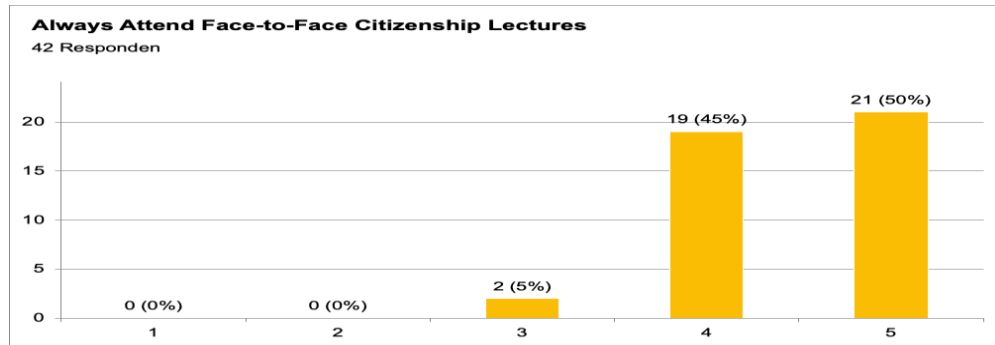


Figure 7. Always attend face-to-face citizenship lectures

The level of interest can be seen in Figure 8 below. Twenty-two out of 42 respondents agreed that civics courses would be more interesting if they were implemented in real-life situations.

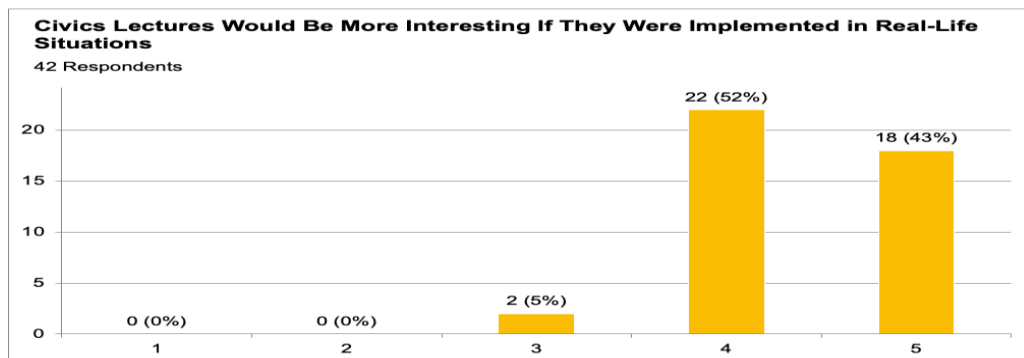


Figure 8. Civics lectures would be more interesting if they were implemented in real-life situations.

Twenty-six respondents agreed that face-to-face civics courses are an interesting subject for them, as shown in Figure 9 below.

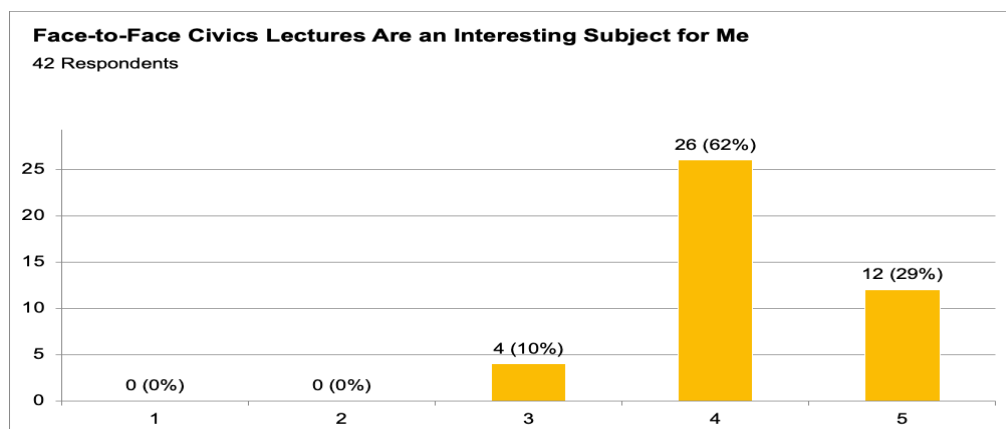


Figure 9. Face-to-face civics lectures are an interesting subject for me

The interest expressed by those who agreed that civics courses are always interesting because they relate to social, national, and state life is shown in Figure 10 below, with 24 (twenty-four) respondents agreeing.

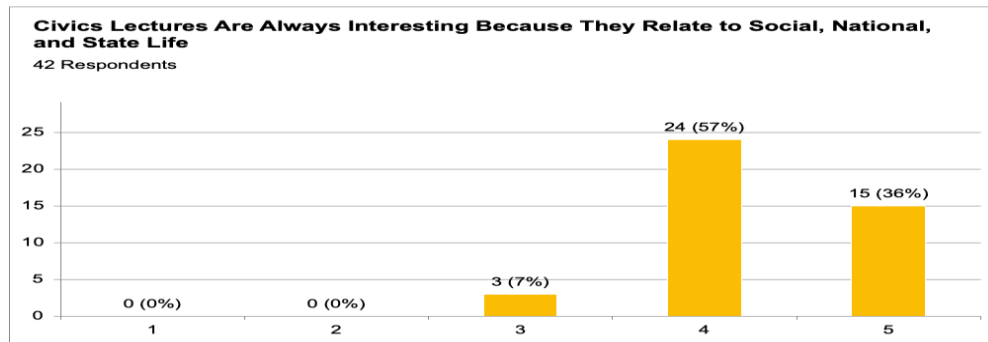


Figure 10. Civics lectures are always interesting because they relate to social, national, and state life

Regarding the statement that civics lectures are mandatory in the university curriculum, respondents indicated they take them out of interest in understanding the subject's benefits and functions. The number of respondents who strongly agreed is shown in Figure 11 below, with 22 (twenty-two) respondents.

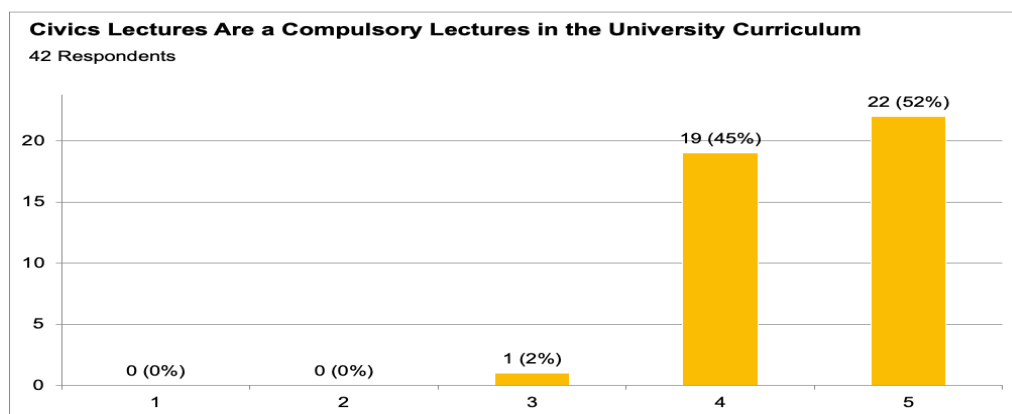


Figure 11. Civics lectures are compulsory lectures in the university curriculum

Figure 12 shows the interest in understanding the benefits and functions of the course material among those who agreed that civics lectures shape students' character and morals, fostering a sense of patriotism. Twenty-two students strongly agreed.

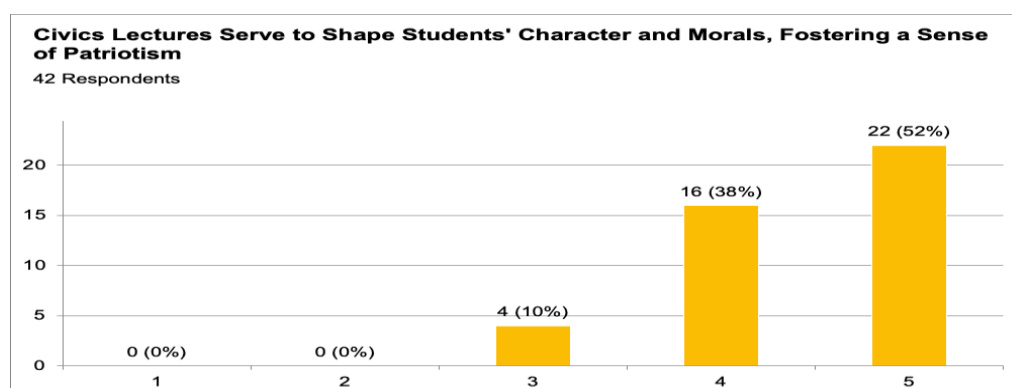


Figure 12. Civics lectures serve to shape students' character and morals, fostering a sense of patriotism

Figure 13 below shows the interest in understanding the benefits and functions of the course material among those who strongly agreed that civics lectures are important.

Twenty-five students discussed the values contained in Pancasila as a guideline for social, national, and state life.

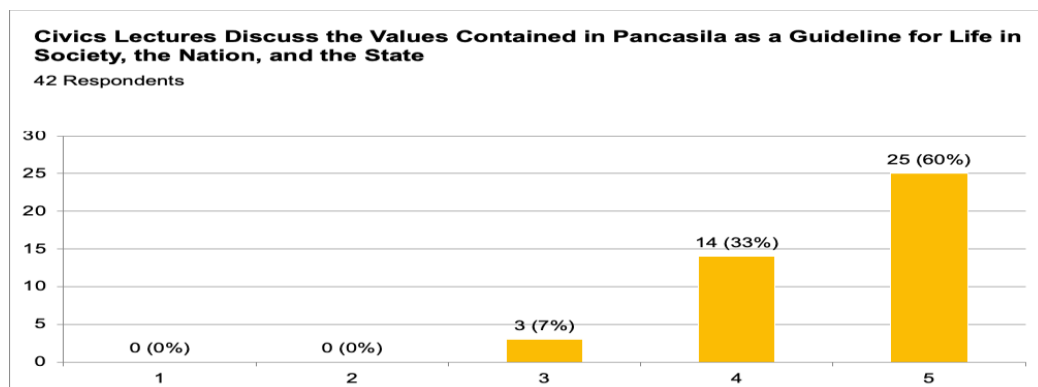


Figure 13. Civics lectures discuss the values contained in Pancasila as a guideline for life in society, the nation, and the state.

The results of the discussion above can be used to determine students' general interest in personality development lectures, as shown in Table 5 below.

Table 5. Mean Indicator Values and Value Categories

Indicator	Value Item (%)	Mean (%)	Category Value
Feeling of Pleasure	1. $26/42 \times 100 = 61,90$	53,97	Less
	2. $21/42 \times 100 = 50,00$		
	3. $21/42 \times 100 = 50,00$		
	4. $21/42 \times 100 = 50,00$		
Attention in Learning	5. $21/42 \times 100 = 50,00$	50,00	Less
	6. $21/42 \times 100 = 50,00$		
	7. $22/42 \times 100 = 52,38$		
Interest	8. $26/42 \times 100 = 61,90$	57,14	Less
	9. $24/42 \times 100 = 57,14$		
	10. $22/42 \times 100 = 52,38$		
Knowing the benefits and functions of the learning materials	11. $22/42 \times 100 = 52,38$	54,76	Less
	12. $25/42 \times 100 = 59,52$		

Based on the simple statistical calculations above, it can be seen that the learning interest in the Citizenship lectures among students in the Food Nanotechnology Study Program at the Bogor AKA Polytechnic is in the low category. The explanation of the percentage values for each learning interest indicator is as follows:

1. Enjoyment is in the low category, as seen from the percentage results using simple calculations and interpretation guidelines according to Suharsimi Arikunto, which resulted in 53.97%.
2. Attention to learning is in the low category, as seen from the percentage results using simple calculations and interpretation guidelines according to Suharsimi Arikunto, which resulted in 50.00%.
3. Interest is in the low category, as seen from the percentage results using simple calculations and interpretation guidelines according to Suharsimi Arikunto, which resulted in 57.14%.

4. Understanding the benefits and functions of the subject matter is in the low category, as seen from the percentage results using simple calculations and interpretation guidelines according to Suharsimi Arikunto, which resulted in 54.76%.

3.2 Discussion

The findings indicate that students' learning interest in the Citizenship Education course in the Food Nanotechnology Study Program at AKA Bogor Polytechnic remains relatively low, based on the interpretation criteria applied in this study. All four indicators were classified in the same category, although some variation was observed among them. The *interest* indicator obtained the highest mean percentage (57.14%), followed by *understanding the benefits and functions of learning materials* (54.76%), *feeling of pleasure* (53.97%), and *attention in learning* (50.00%). These findings suggest that the problem is not necessarily a complete absence of interest in Citizenship Education, but rather that students' interest has not developed consistently across affective, attentional, and perceived-usefulness dimensions. This condition is important because learning interest is associated with students' involvement in the learning process and can contribute to learning outcomes [19]. Therefore, strengthening students' interest in Citizenship Education should be considered an important component of improving the effectiveness of the course.

The first indicator, *feeling of pleasure*, obtained a mean percentage of 53.97%. This result indicates that students have not yet experienced a consistently strong sense of enjoyment during Citizenship Education lectures. Feelings of enjoyment are important because emotional experiences can influence how actively students engage with learning activities. Ma et al. [9] demonstrated that achievement emotions are significantly related to students' cognitive engagement, with positive emotions contributing to stronger engagement in the learning process. In the context of the present study, students may recognize Citizenship Education as an important compulsory course but may not always experience the learning process as personally enjoyable or emotionally engaging. Consequently, lecturers need to create learning situations that promote positive learning experiences through interaction, discussion, collaborative activities, and examples that are closely related to students' everyday experiences. A more engaging learning atmosphere may help students perceive Citizenship Education not merely as a compulsory subject but as a meaningful component of their university education.

The *attention in learning* indicator obtained the lowest mean percentage, at 50.00%, suggesting that maintaining students' attention represents one of the main challenges in Citizenship Education lectures. Attention is not limited to physical attendance or punctuality; it also involves students' cognitive involvement and willingness to concentrate on and process the learning material. Previous research has emphasized that cognitive engagement is influenced by students' perceptions of the learning environment, their emotions, and the perceived usefulness of learning resources [9]. Therefore, the relatively low level of attention found in this study may indicate that conventional lecture activities alone are insufficient to maintain sustained student engagement. This finding is particularly relevant because preliminary observations in this study also indicated several

challenges in the instructional process, including learning-related emotions, differences in students' abilities, limited resources and time, and perceptions that certain course materials are not closely aligned with the competencies expected from Food Nanotechnology graduates. These conditions may reduce students' willingness to devote sustained attention to the course.

Interestingly, the *interest* indicator achieved the highest value among the four dimensions, with a mean percentage of 57.14%. The questionnaire items in this dimension indicate that students tend to perceive Citizenship Education as more interesting when the material is connected with real-life situations and issues related to social, national, and state life. This finding suggests an opportunity to improve the course through more contextual and student-centered learning strategies. Project-Based Learning (PjBL) and Problem-Based Learning (PBL), for example, provide opportunities for students to engage collaboratively with authentic problems while developing critical thinking, problem-solving, and communication skills [10]. Active learning approaches have also been associated with students' engagement, satisfaction, and academic experiences in higher education [8]. Accordingly, Citizenship Education for Food Nanotechnology students could incorporate contextual cases such as food safety policy, consumer rights, ethical responsibilities in food technology, environmental sustainability, public health, or the social consequences of technological innovation. Connecting civic concepts with issues in students' disciplinary field may make the relevance of the course more visible and strengthen their interest in learning.

The indicator concerning *understanding the benefits and functions of learning materials* obtained a mean percentage of 54.76%. This result deserves particular attention because the questionnaire items show that the course introduces fundamental purposes of Citizenship Education, including understanding Pancasila, developing character and morality, fostering patriotism, and recognizing Citizenship Education as a compulsory component of the higher education curriculum. However, knowing that a course is compulsory or understanding its general objectives does not automatically lead to strong learning interest. Students also need to perceive how the knowledge acquired from the course is relevant to their academic discipline, professional responsibilities, and future roles in society. This issue is consistent with the preliminary observation that some students perceived Citizenship Education as having limited alignment with the graduate competencies of the Food Nanotechnology Study Program. Since perceived usefulness and positive learning experiences can contribute to cognitive engagement [9], lecturers should explicitly demonstrate how civic values are connected with professional ethics, social responsibility, national regulations, sustainability, and decision-making in the food and technology sectors. Such integration could bridge the perceived gap between general education and students' professional fields.

Overall, these findings imply that efforts to increase students' learning interest should focus not only on modifying the content of Citizenship Education but also on optimizing the instructional methods used by lecturers. Learning activities should be more contextual, interactive, collaborative, and connected to real problems relevant to Food Nanotechnology students. PBL, PjBL, case-based discussions, collaborative projects, and

technology-supported learning may provide alternatives to predominantly lecturer-centered instruction [9], [10]. Nevertheless, the findings should be interpreted within the limitations of this study. The research involved only 42 respondents from a population of 149 students, representing a response rate of approximately 28.19%, and was conducted within a single study program. In addition, the descriptive quantitative design and self-reported questionnaire data do not allow causal conclusions regarding why students' learning interest is low. Future research should therefore involve larger and more representative samples and may combine quantitative data with interviews or focus group discussions to explore the factors underlying students' interest more deeply. Experimental or quasi-experimental research could also examine whether contextual and active learning strategies significantly improve students' interest in Citizenship Education.

4. CONCLUSION

This study found that students' learning interest in the Citizenship Education course in the Food Nanotechnology Study Program at AKA Bogor Polytechnic was generally low. All four dimensions of learning interest showed relatively similar results, with *interest* obtaining the highest mean percentage (57.14%), followed by *understanding the benefits and functions of learning materials* (54.76%), *feeling of pleasure* (53.97%), and *attention in learning* (50.00%). These findings indicate that although students demonstrate a certain degree of interest in Citizenship Education, their enjoyment, sustained attention, and perceived relevance of the course have not yet developed optimally. In particular, the comparatively low level of attention suggests a need to strengthen students' active engagement throughout the learning process.

The findings highlight the importance of improving the instructional strategies used in Citizenship Education by adopting more contextual, interactive, and student-centered learning approaches. Connecting civic concepts with real-life issues and topics relevant to Food Nanotechnology may help students recognize the course's practical value while increasing their engagement and interest in learning. However, because this study involved a relatively small sample from a single program and used a descriptive quantitative design, the findings should be interpreted within this context. Future studies should involve larger, more representative samples, incorporate qualitative approaches to explore factors influencing students' learning interest, and examine the effectiveness of contextual or active learning strategies in improving students' engagement with Citizenship Education.

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