



Optimization of Digital Platforms in Character-Based Education Civics Engagement to Grow Citizens' Concern

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ABSTRACT

Objective: This research is here to offer character education media that can be used to face the digital era. **Method:** This research uses an approach method. The method used in this research is research and development (R&D) in the Borg & Gall model. The subjects involved in the research were 1968 students at the Indonesian University of Education. The research subjects involved were Indonesian University of Education students conducting community service program activities. By using simple random sampling, This research involved 1,968 students. **Novelty:** This research presents the novelty of empirical data that concludes a deviation between the attitude and behavior indexes. In terms of engagement, the citizen behavior index is better than the attitude index. Second, the obstacles to developing citizen involvement in the digitalization of character education are due to citizens' low level of awareness regarding the importance of their contribution to character education, not because of a lack of skills. Third, thus, the construction of optimizing digital platforms in character education must be made possible by raising citizen awareness.

INTRODUCTION

The current dynamics of extreme social change indicate an expansion of the role of citizens to embrace increasingly broad social concepts. In other words, citizens need to contextualize their roles by adjusting their contributions according to the current social situation (Cox et al., 2022; Munté-Pascual et al., 2022; Rosa et al., 2023; van der Meer & Jonkman, 2021). Theoretically, extreme social change always occurs in excessive change. After the pandemic that occurred in 2019, the social order of society changed to an increasingly uncertain situation (volatility). Several studies prove extreme changes after the pandemic. Among several researchers who support this argument, for example, Al-Omoush et al. (2020), Alizadeh et al. (2023), Chakraborty and Maity (2020) even confirm that the COVID-19 pandemic is the greatest crisis since the Second World War II that has dramatically challenged the human society. Post-pandemic social changes not only lead to health developments but also to complex social changes. Data taken from WHO (2021) shows that more than 630 million people have confirmed cases of COVID-19, of which more than 6.5 million have died. In general terms, this fact indicates significant social destruction. Motamed-Jahromi and Kaveh (2021) stated that these (pandemic) consequences have manifested more prominently in the social sphere. The research arguments, as explained above, strengthen the argument for evidence of significant social changes after the pandemic.

In principle, the Industrial Revolution has proven a change in the social paradigm toward modern culture. The aim of modern culture is digitalization. This phenomenon

was explained by Kohli and Melville (2019), who explained the following in their research: Nowadays, firms are constantly pressured to use digital technologies and adapt their business models to this new reality. Then, Reis et al. (2020) justified that digitalization has been identified as the most significant technological trend changing society and business. However, social life is an aspect that is conditioned to change and develop. It cannot be denied that the digitalization process is increasingly becoming a typical situation in modern society (Agustian et al., 2023; Amankwah-Amoah et al., 2021; Faraj et al., 2021; Heeks, 2022; Larsson, 2021). Thus, every treatment Social media must be formed to adapt to the current social situation.

On the other hand, citizen involvement is important to ensure a successful social transition that is implemented wisely. In the grammar of civic science, this concept of citizen involvement is known as civic engagement. Draft civic engagement that is at least in line with the concept of citizen involvement. For example, several opinions were expressed by Azizah and Sari (2023), who agreed that civic engagement can be interpreted as community involvement, referring to how residents participate in community life to improve the conditions of others or help shape the community's future. The author will explain the meaning of each specification in their opinion. In several other studies, it has been confirmed that several variables have an influence on the citizen engagement index. All forms of civic engagement are positively associated with subsequent income and education level (Ballard et al., 2019). Policy implications and future directions for research to leverage civic engagement as a coping strategy for the positive development of minority children and their communities (Causadias et al., 2022; Fenn et al., 2024; Tan et al., 2023; Willis et al., 2022). Civic engagement programs and opportunities should center on local issues and allow for multiple forms of engagement (Wray-Lake & Abrams, 2020). From the research conclusions above, we can justify that various diverse concepts influence the variables influencing citizen involvement.

This research involves at least two variables to test their correlation. These two variables are First, the use of digital platforms in character-based education civic engagement and second, citizen concerns (Harrison, 2024; Harrison & Polizzi, 2022; Prayogi et al., 2024; Roidah Lina & Qiyadah Robbaniyah, 2024). These two variables prove the need for citizen contributions in a character learning process. The hypothesis present in this research is that citizen involvement has implications for the preparation of participatory character learning media. Thus, this research also considers citizens as capital for developing character learning media to realize citizen concerns. Researchers can justify the problem statement with several points when interpreting factual situations. First, the digital era has resulted in more complex social needs. Second, Character education requires contextualization efforts based on digital situations. Third, the potential for developing digital character education models has not yet been found in an ideal situation. Fourth, there is potential for citizen involvement (civic engagement), which can be used as capital for character development. Based on the background, researchers will discuss the importance of optimizing digital platforms in character education to embody citizenship engagement and create a caring character in citizens.

Based on the analysis through VOSviewer, character education has become the main focus in various studies, especially in relation to "character building, moral education, and student character ."The results of the literature review above are still limited in

exploring how "digital platforms" can be optimized in character education based on citizen involvement. Previous studies have discussed character education more in "formal education" without highlighting how "e-learning, online learning, and social media" can increase citizen involvement in building a caring character for others. Therefore, the novelty in this study lies in the digital approach that allows active community participation in character education, not only through classroom learning but also in the broader digital ecosystem. In addition, "civic concern" has not been the main focus in previous studies on character education. Most studies still focus on "individual development," such as increasing "self-efficacy, motivation, and learning process," without emphasizing how caring character can be instilled through digital interaction and technology-based social engagement. In this context, optimizing digital platforms can be used to develop empathy and social awareness through "online discussions, collaborative projects, and social campaigns" that allow citizens to actively contribute to building broader character values.

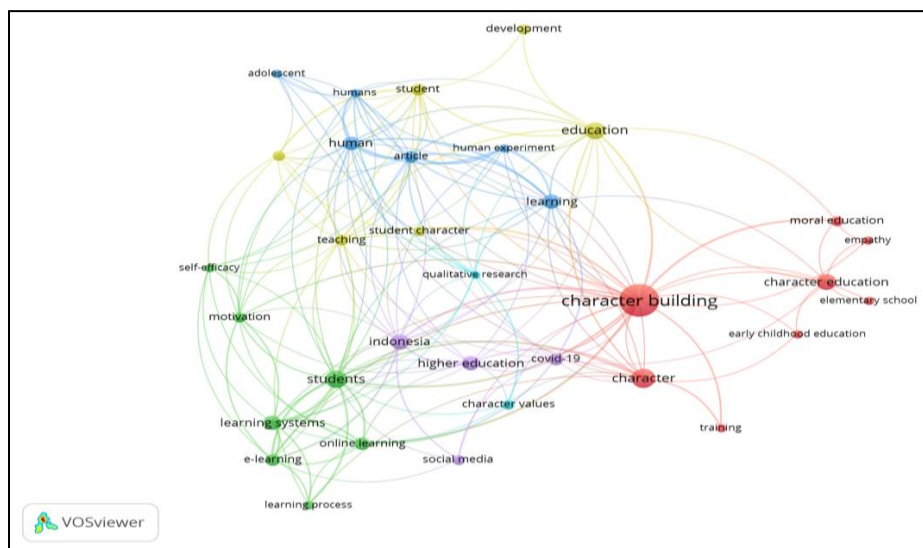


Figure 1. Trends and developments in the concept of research variables.

The COVID-19 pandemic has driven significant changes in the education system, including the increased use of technology in learning. However, previous literature reviews have mostly discussed the impact of the pandemic on "higher education and online learning" without directly linking it to character education. Therefore, this study offers a novelty in seeing how character education can adapt to the post-pandemic era through digital platforms to create a more inclusive and socially engaged learning experience. However, previous studies examine character education only from perspectives such as "teaching, qualitative research, and learning systems" without integrating a multidisciplinary approach. This study offers a new perspective by combining "educational technology, social sciences, and educational psychology" to create a more effective digital-based character education strategy. Thus, this study enriches studies on character education and presents innovative solutions for fostering citizen concern through optimizing digital platforms.

RESEARCH METHOD

The research approach used in this research is a mixed method. This method was chosen based on the need for research data to understand the process of optimizing digital platforms as concept-based character education media citizenship engagement. With this approach, the quantitative approach presents the factual situation regarding the initial pre-treatment conditions. A factual explanation of the situation can be described with certain classifications to translate into the pre-research situation. Data obtained from the quantitative data collection process can describe the factual situation regarding the factual condition of the research subject and its correlation with the research variables. Meanwhile, the qualitative approach in this research plays a role in recording the condition of the research subjects in more depth. Obtaining qualitative data in research will clarify the picture of factual data in a more descriptive manner so that the data picture can be visualized precisely and clearly. The research subjects involved were Indonesian University of Education students conducting community service program activities. This research involved 1,968 students using simple random sampling. The profile of each respondent is likely in Figure 2.

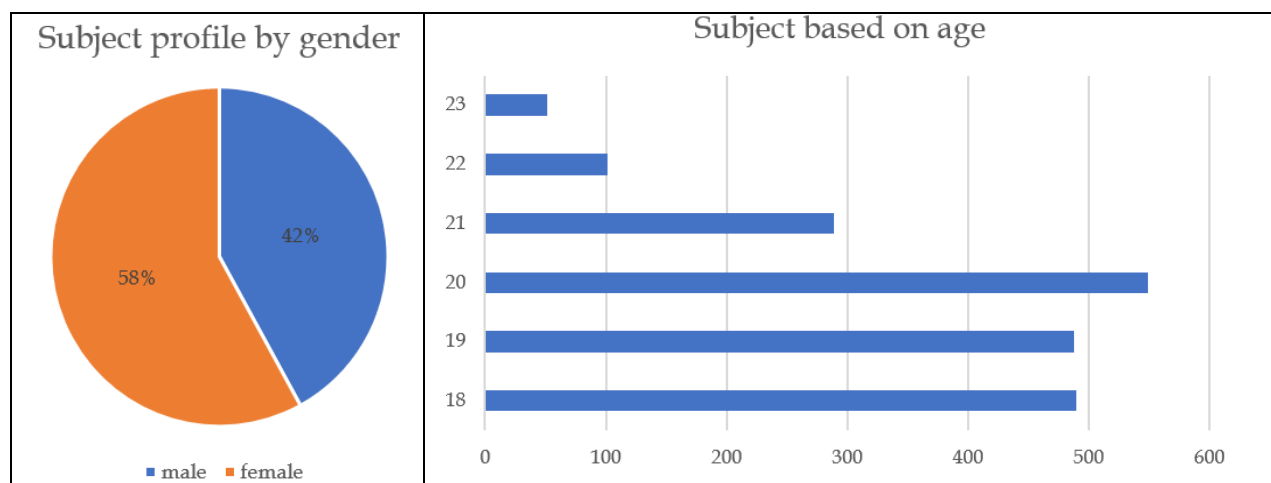


Figure 2. Research subject profile by category.

The research stages in Figure 3 are explained in the following description. **First**, researchers will record the actual conditions regarding using digital platforms in character education. In the first part, the researcher also explains the foundations of the problems in using digital platforms in character education. The citizen involvement variable (civic engagement) will be reviewed as a potential to optimize the digital platform. **Second**, to understand the problem, researchers will collect information using literature and field study approaches. **Third**, based on the preliminary study as explained above, it will be used as capital for developing a model that can be carried out to optimize digital platforms according to the potential for citizen involvement in giving birth to the caring character of citizens. **Fourth**, the model will be validated theoretically using expert judgment. Please note that this article presents research results up to the fourth stage, which is the initial stage of R&D research.

The method used in this research is Research & Development (R&D). As the name suggests, Research and development are understood as research activities that start with research and continue with development. Research activities are carried out to obtain information about user needs (needs assessment), while development activities

are carried out to produce learning tools. The stages in research and development (R&D) in this research operationally adopt the Borg & Gall (2003) model, which consists of 1) Potential and Problems; 2) Collect Information; 3) Model Development; 4) Model Validation; 5) Model Revision; 6) Model Testing; 7) Model Revision; 8) Wider Trial; and 9) Final Model Revision. It needs to be justified that in taking the Borg & Gall model, we have a primary orientation to document the factual situation in this study. This is done to ensure that the model built aligns with the acceptance of data from potential problems regarding citizen involvement. Thus, the phase implemented in this study is up to phase 4, namely validation (through experts).

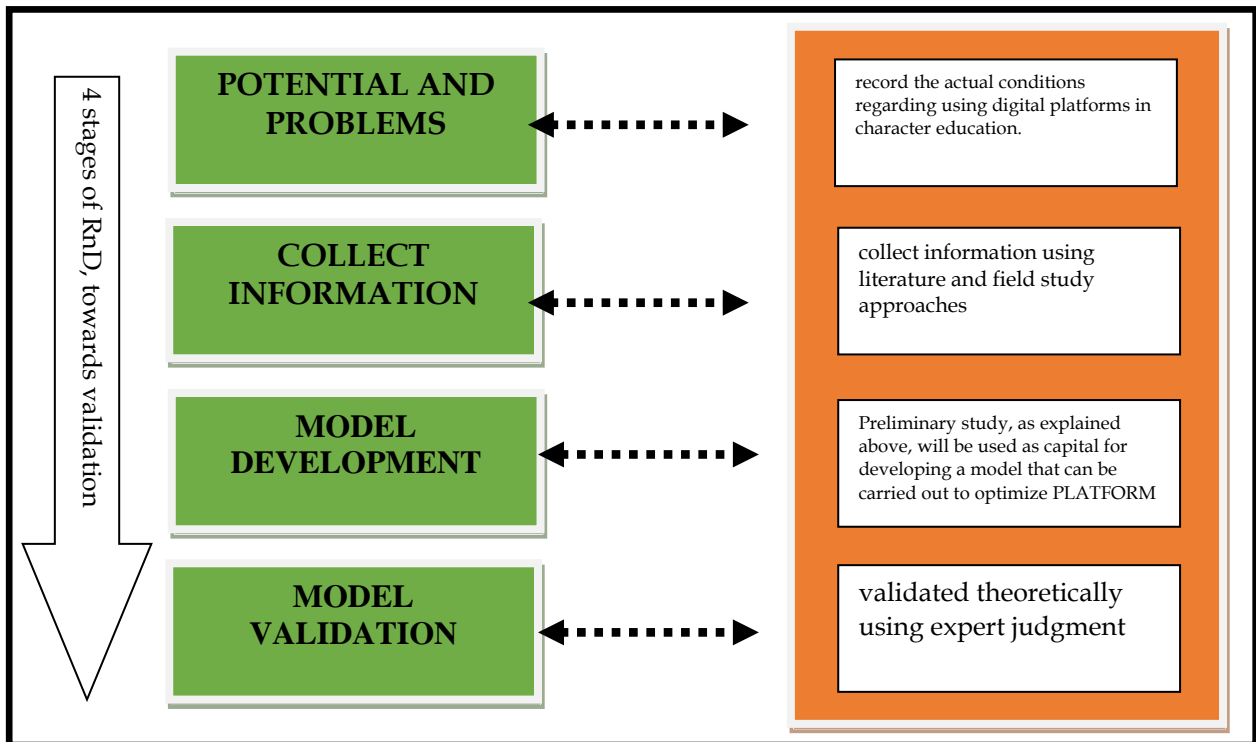


Figure 3. Description of practical steps of research.

Researchers used a survey method with descriptive percentage data analysis at the first stage of translating the conditions of perception civics engagement. As explained (Azahrah et al., 2021), three steps can be taken in this analysis. Scoring, namely collecting the data needed to categorize research subject responses quantitatively. Next, the scoring data is added up. Finally, the data resulting from the sum of the scores is calculated according to Arikunto (2021) with the measurement formulation as in Figure 1.

$$P = \frac{f}{n} \times 100\%$$

P : percentage
 f : score of frequency
 n : maximum score from maximum frequency

Figure 4. Measurement formulation.

The results of percentage measurements that emerge from calculations using the formulation above are then translated using the technique of identifying score measurement criteria by taking the opinion of the formulation of identification of score assessment criteria as explained in Table 1.

Table 1. Score assessment criteria.

Percentage	Score Justification
0.00%	There is not any
>0.00% - ≤24.00%	Fraction
>24.00% - ≤49.00%	Less than half
>49.00% - ≤51.00%	Half of it
>51.00% - ≤75.00%	More than half
>75.00% - ≤99.00%	Most of the
>99.00% - 100.00%	The whole thing

Quantitative data analysis with the above formulation will then define the quantity of attitude and behavior perception scores in civics engagement. This data will then be used as justification capital to identify answers for further research, namely defining the obstacles in optimizing digital platforms as character-based education media and civic engagement in raising citizen awareness. In the section defining obstacles, researchers use data analysis to conclude qualitative research data. Data collection using the numeric graphics scale (NRS) approach model.

RESULTS AND DISCUSSION

Results

Potential and Problems

Several pieces of information become research data to justify the study results. The research subjects explained their perceptions of the research variables. In general, the following is a specific explanation of the findings from this research. This section will present the findings in a structured manner so that the stages of explaining the findings are based on the research methods described in the previous section. Table 2 shows the factual conditions regarding the research subject's perception of the optimization of digital platforms for use in the character education process.

Table 2. Attitude index survey civic engagement.

Indicator	Score (%)
I realize the responsibility to be involved in the community in carrying out service (volunteerism)	75.90
I believe in the responsibility to build regional (village) communities	77.72
I am committed to providing services (citizens' services)	77.20
I am responsible for solving problems effectively and efficiently	77.79
I care about understanding the situation of social communities	77.58
I am aware of the need to contribute financially to the community development movement	74.62
Attitude index score civics engagement of young citizens	76.75

Table 2 concludes that affective involvement scores 'mostly' Effendi & Maning (1989). Thus, these data explain that, in general, the research subjects have a good attitude index to be involved in their contributions as citizens. This data can justify the potential

for citizens' attitudes to be involved in contributing to a particular community. However, this research also measures factual conditions regarding citizens' behavior in their social environment.

Table 3. Behavioral Index survey civic engagement.

Indicator	Score (%)
I am involved as a structured volunteer in the community	81.92
When working with others, I make positive changes in society	81.77
I actively help with every KKN group program	93.14
I always get information about events in the community where I do KKN	88.85
I actively participate in discussions that raise national issues (SDGs/Developing Villages)/stunting	85.46
I contribute to social activities related to national issues (SDGs/Developing Villages)/stunting in society.	88.06
Young citizens' civics engagement behavior index score	86.53

Let us compare the index of attitudes and behavior of citizen involvement by explaining the above-mentioned findings. It shows a significant gap in the attitudes and involvement behavior index. The difference between engagement attitudes and engagement behavior is 9.78%. In essence, this gap does not change the conclusion that citizen involvement, both as an attitude and behavior, can potentially answer actual problems. However, this gap still gives the impression of a gap between the perception of interpretation (attitude) and the perception of reaction (behavior). Based on the interpretation of the data above, the researcher concluded that the interpretation perception score (attitude) tends to be lower than the reaction perception score (behavior). Gregory's Theories explain the relationship between perception and behavior, and a positive correlation exists between attitudes and behavior. This correlation can be described by the conclusion that 'perception follows behavior.' Thus, this research can best answer the causes of these data gaps. The following discussion is to answer the obstacles that arise and may cause the gap in attitudes and behavior in citizen involvement. In another study, a justification stated that digital storytelling can create a non-judgmental attitude (Chan, 2019). Another research concluded that teacher development, namely teaching, can increase students' citizenship attitudes from the inside out.

Collect Information

Contextually, character education has become an increasingly popular terminology in modern educational studies, especially after the inauguration of the values education program as the estuary of character education. Snook (2007) explains how values education began thinking about the need for values from 1960 to 1970. In the following, the author will quote the statement in more detail, *'During the 1960s and 1970s there were new demands for what was variously called Moral Education; Personal, Social and Moral Education'*. This terminology has developed so much that it has given rise to various expansions of the definition of character education. Berkowitz and Bier (2015) then developed several models of character education. Character education is a habit that requires the community to build character, such as families and schools. Character education defines aspects of character in two aspects: 'character is an innate condition

that humans cannot reject' and 'character is an individual's ability to master this condition.'

Practically, character education before and after character education experiences various developments. Thus, these developments impact different situations in the character education process. Problems include the students showing defiance to the necessary authorities and stubbornly refusing or rejecting the prescribed behavioral lessons of that period. This situation illustrates that the tendency of character education problems in the pre-pandemic period was related to the internal situation of students. In a pandemic, the problems that arise are slightly developing, as explained by (Aristeidou and Cross, 2021). This situation then opens up space for educational researchers to develop effective character education models, including by utilizing digital platforms, in line with the explanation by Lima (2020) that the primary purpose of a digital platform is to establish communication between users and to facilitate the exchange of goods, services or social currency, thus allowing the value creation for all participants.

The following definition of civic engagement is interpreted as political movements (political involvement). This definition limits the term's meaning to activities that are collective and political (i.e., involving government action). Civic engagement differs from the civic engagement ethic of individual service, which directs individual efforts toward collective action in solving problems through our political processes. Thus, in this meaning, civic engagement has a definition that is very close to political participation. In this meaning, civic engagement is perceived as a movement for social change. David Crowley (in Adler & Goggin, 2005) emphasizes the focus of civic engagement on the elements of social change that exist in civic engagement: Civic engagement describes how a citizen actively participates in community life to help shape its future.

Civic engagement includes making a difference in civic life and developing a combination of knowledge, skills, values, and motivation to make a difference. Young citizens' involvement in providing direction in the combination of capital owned by young people as a person. In their explanation, they stated that youth civic engagement is defined as an effort to make a difference in the civic life of one's society. It also involves developing a combination of knowledge, skills, values, and motivation to make that difference. These activities enrich the lives of young people and are socially beneficial to the community. Four interrelated constructs have been identified in the research literature as necessary for civic engagement.

Thus, this research not only explains perception as a cognitive product but also measures the impact of the perception being explained. This is based on the theoretical meaning that actions can be part of the implications of a reaction. This research report will describe the affective and psychomotor civic engagement situation of the subjects studied. The measurement of these two situations is based on the theoretical explanation of multidimensional citizenship presented by Gordon & Hampton (2016), which states that youth civic engagement is defined as working to make a difference in the civic life of one's community. That, too, involves developing a combination of knowledge, skills, values, and motivation. Based on these considerations, researchers justify the need for comprehensive measurements that translate affective and psychomotor situations into civic engagement. The measurement classification of these

two elements can explain, more specifically, the perception situation of the research subject.

Model Development

Specifically, this section attempts to outline the obstacles that arise so that citizens' engagement attitudes are lower than their engagement behavior index. These obstacles are then used as problems to be solved in the process of optimizing the role of citizen involvement to develop digital platforms as a medium for character education. Based on the research findings, the research subjects explained that the cause of the lack of strong attitudes toward civic engagement was their low awareness of the importance of civic engagement. Further explanation of the obstacles to citizen involvement in efforts to optimize digital platforms can be understood in Figure 5.

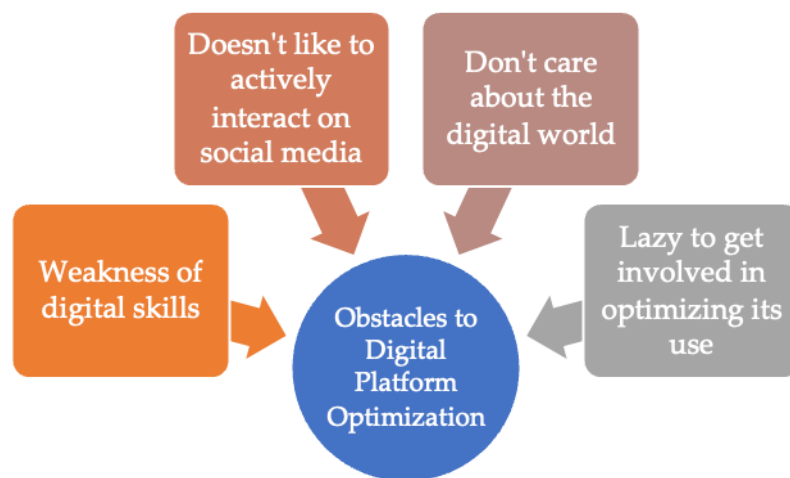


Figure 5. Obstacles to citizen involvement in optimizing digital platforms.

In essence, digitalization brings various problems in the adaptation process. Several previous researchers have confirmed that there are at least several patterns of obstacles usually found in the adaptation process to the digital era, as follows. First, for example, Lewin's (1951) explanation explains that the transition process includes at least three processes as follows:

- Unfreeze, namely the initial period of 'thaw' which opens up opportunities for a person or group to change
- Change/Transit,n; namely the next step of 'thawing,' when the initiation of change begins to be developed and tries to find support in the form of communication modes that can make it successful
- Refreeze is when the stability of change has occurred and is successfully implemented.

Lewin's explanation above justifies that social change must face an adaptation process that is not simple enough. In other words, change requires an adaptation process. Likewise, the digitalization process requires an adaptation process. Digitalization of character education also certainly faces obstacles. Researchers obtain factual information from research subjects based on data taken qualitatively. There are at least several obstacles that researchers can conclude through the data analysis process (data reduction and conclusion drawing). Below is a visual explanation of the obstacles faced when using digital platforms to implement political education.

The above-mentioned obstacles have been explained by the House of Commons: Science and Technology Select Committee (2016), which states that there is a digital skills crisis. Thus, it is appropriate for schools to play a role in filling the gaps in the needs of education to assist in adapting to digitalization in the education sector. In its explanation, the House of Commons: Science and Technology Select Committee (2016) explains that crucially, witnesses impressed upon us that students who were only exposed to digital education in designated ICT classes suffered a distinct disadvantage when compared to those whose schools chose to mainstream technology and digital skills across the curriculum. The wider community must be trained to perceive the potential need for digital media to optimize education, including character education.

Model Validation: Constructing Alternative Ideal Character Education Media that Can Be Implemented on Digital Platforms

Things evaluated in developing learning multimedia are as follows: (1) Subject matter, namely whether the material provided is by the initial objectives of creating the program and whether the depth of the material is appropriate to the level of students who will use the product and whether it is by the objectives to be achieved. Is the content structure appropriate, and is the material presented in the product correct? (2) Auxiliary information, namely additional information not directly related to the material, such as introduction, instructions, help, and conclusion. (3) Affective considerations, namely how this product can motivate students to learn more. (4) Interface: Because the product's appearance is very important, learning multimedia developers must focus on writing text, animation graphics, audio, and video. (5) Navigation: Navigation should be made as easy as possible so that users have no difficulty accessing the program. Navigation must be consistent. (6) Pedagogy must consider methodology, interactivity, cognitive capacity, cooperative learning, learning strategies, user control, questions, answering questions, quality of feedback, and mastery of the material. (7) Robustness or product durability is needed.

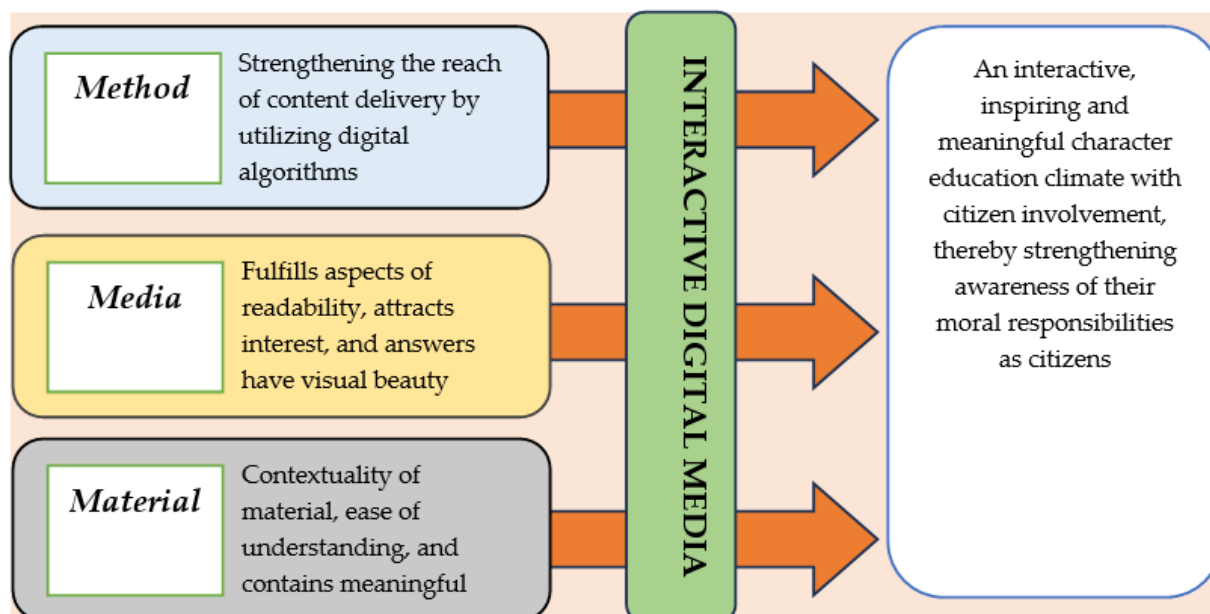


Figure 6. Interactive digital media.

Merril (1996) classifies multimedia software quality criteria into two categories: (1) learning criteria and (2) presentation criteria. Learning criteria refer to pedagogical aspects, teaching techniques, or learning strategies. Merrill says, "Instructional criteria refers to the pedagogical aspect, teaching techniques, or instructional strategies that should be incorporated into an educational computer program." Meanwhile, presentation criteria refer to four main categories, namely: (1) display format, (2) navigation, (3) ease of use, and (4) interaction. Furthermore, to determine multimedia quality, you must consider three things: 1) Method, namely the techniques and procedures used in learning (cooperation, games, presentations, or discussions). 2) Media, namely the media used in learning to attract students' interest (multimedia, video, text, images, and animation). 3) Material, namely learning content, which includes motivation, orientation, information, application, and evaluation. Based on the explanations explained above, the researcher then constructs a model for developing character education media that can be carried out as follows. Based on the visual explanation above, the researcher understands that character education media using digital platforms needs to pay attention to the method's accuracy, the media's beauty, and the material's depth. Thus, the researcher continues the opinion of Newby (2000) that a good learning media needs to be implemented with good placement of methods, media, and materials

CONCLUSION

Fundamental Finding: A minor deviation exists between citizen attitudes and behavior scores. Citizen engagement attitudes have a score of 76.75%, while behavioral engagement reaches a score of 86.53%. Second, the obstacles to strengthening citizen engagement in digitalizing educational characters are more strongly influenced by weak awareness, not a lack of skills. Third, the development of digital platform optimization in educational characters must be very possible by increasing citizen awareness. **Implication:** This research shows a tendency to impact the development of educational studies and their relationship to social programs. Some of the implications can be understood from several points, as follows. First, normative studies of education from the perspective of method science. Second, the development of social capital as a basis for developing methods. **Limitation:** The study's limitations that are worthy of being developed in this research are related to the development of character education, learning methods, citizen involvement, social capital, and citizen awareness. **Future Research:** Another pattern that can be present and developed in this study is an effort to strengthen social capital, such as citizen involvement, to refer to a specific educational orientation. Thus, citizen empowerment can have more functional utility for the world of education.

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