

## Formulation of Technology-based Interactive Learning Media to Revitalize Citizens' Political Awareness

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### ABSTRACT

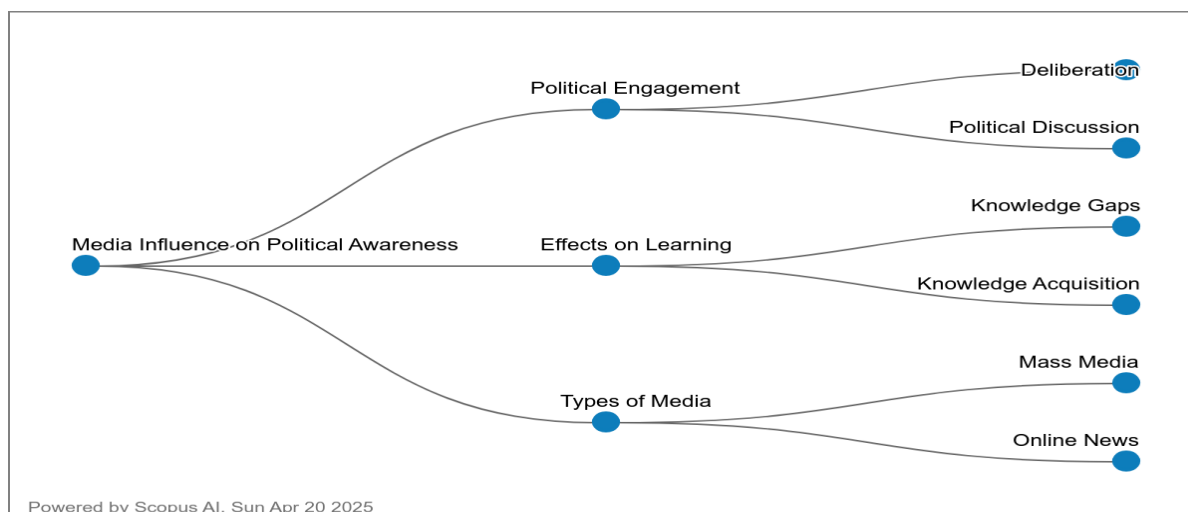
**Objective:** As a dynamic educational orientation, efforts to fulfill political awareness require the latest methodological updates. This research offers an ideal media formulation that can help accelerate efforts to revitalize political awareness. **Method:** To achieve this, the research method applied goes through at least three interrelated stages; 1) qualitative exploration by reviewing research developments in the literature in a study of aligned themes; 2) objective measurement of research subjects (young citizens) using the verbal rating scale (VRS), numeric rating scale (NRS), and graphic rating scale (GRS) methods. The data obtained from these two methods is then used to determine the ideal formulation for realizing political awareness (conceptual framework development, CFD). **Results:** The measurement results show that the political awareness profile of young citizens is increasingly diverse and shows new trends. The formulation of the best political education media at least fulfills the ideal learning media according to aspects; content, completeness of information, ease of information transactions, and navigation of its use. **Novelty:** This research offers an innovative framework that can be adapted to evolving socio-political contexts, making it a significant advancement in the field of political education. The positive coordination between awareness (as a learning objective) and the use of technology is a relationship addressed in this study. Concerns that the progressive development of technology might undermine political awareness can be resolved through the analytical findings of this research. Engaging interactive digital tools, such as social media, holds significant potential to be developed as a means of enhancing political awareness.

## INTRODUCTION

The internalization of political awareness programs is important to study because it is related to the quality of the social response of each citizen. Awareness can be said to be the totality of knowledge and understanding of a conceptual assessment (Al-Khaza'leh & Lahiani, 2021). This shows the tendency of consciousness to be an entity with significant elements that influence specific social responses from a person. However, from another point of view, awareness can also arise from environmental influences (Al-Khaza'leh & Lahiani, 2021; Al Faituri, 2020; Hermosa, 2021). The description, as explained above, shows the tendency that there is a diversity of scientific perceptions in viewing the concept of political awareness. The first perception has a tendency to decide that greater political awareness is influenced by internal motivation. On the other hand, other perceptions show a bias towards the external influence of political awareness.

In this study, researchers scientifically review the views of those who recognize external influences on political awareness. That is what the researchers considered in deciding that learning media can be justified as having an influence on the quality of education in revitalizing political awareness. awareness in politics becomes a basic needs, because the formation of political awareness in society regarding various vital and important events and issues will help the development of society and become the basis for active civil society institutions in society, which requires continuous effort. (Al-Khaza'leh & Lahiani, 2021). Social media must be considered as one that can influence a particular learning process (Jiang et al., 2023). With the development of network society, college students' lives are enveloped by network society, and there are more and more channels for them to contact various types of information, which brings new challenges to their ideological and ideological behavior (K. Li et al., 2021). Thus, political awareness must be considered as a concept that must be considered in determining the potential of social movements. This must be considered because this condition can significantly impact the social sector.

Data development continues to grow in line with rapid technological changes. This certainly has an influence on the trend of social change in all fields. This phenomenon has an impact on the presence of several challenges in various fields, including political and ideological education (Wang & Liu, 2017). Ease of use and usability is significantly related to behavioral intention to use online education systems (Bag et al., 2020). This shows that digital natives have become a new social transaction style in various forms of interaction. On the other hand, strengthening digital skills as a response to this phenomenon still requires a solution, because there are still various information problems from students who cannot directly consume media as a learning instrument (Janschitz & Penker, 2022).



**Figure 1.** Research trend analysis according to variable theme

Research tried to analyze several articles collected by Scopus AI. Since 2024, throughout the world there are at least 60 countries facing political parties that are crucial moments in democratic and political life (Darian-Smith, 2024). In other studies, the impact of social media is said to have an influence on political learning, with various different concepts regarding the degree of impact. (Amsalem & Zoizner, 2023). Thus, this study is important to bring in the next generation who are wise in political and democratic attitudes (Yu & Wang, 2025). This issue is also increasingly developing as studies on the political awareness of young people in several regions in the Middle East. (Keinan-Cohen et al., 2025). In this concept, the perspective of leadership character has also been studied (Kilgallon & Wright, 2025). In other variables, several recent

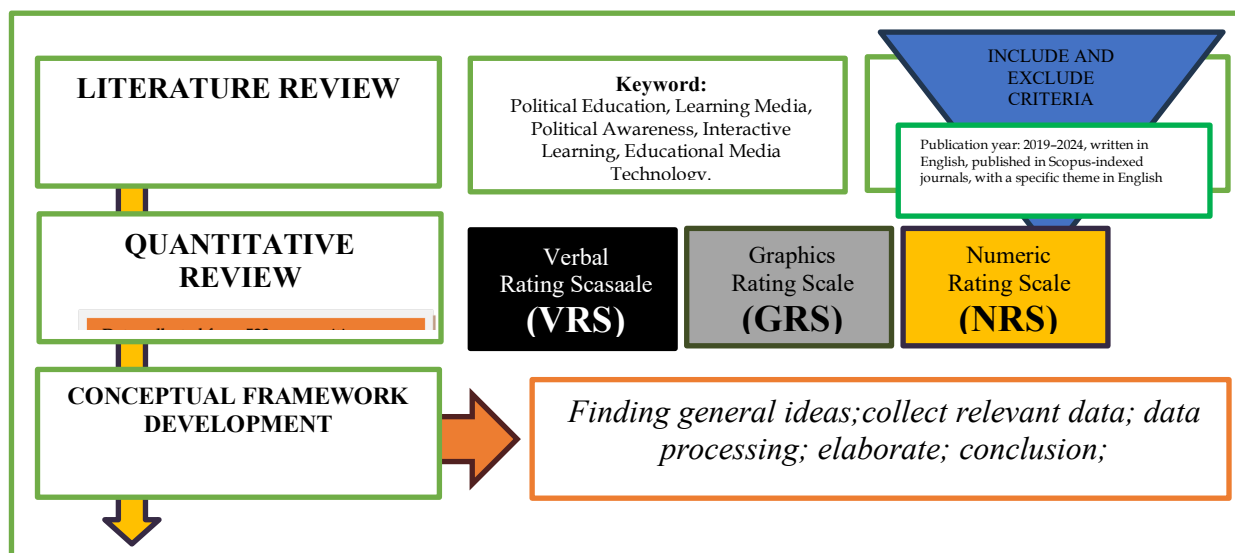
articles also examine social media as an interactive platform that can be used in the learning process. (Chen, 2024; Han, 2025).

Based on the description of the study as explained above, researchers can conclude various phenomena as a combination of these situations. First, political awareness must be considered a concept in educational development. Political awareness has a potentially significant influence on other social situations. This condition is one of the considerations that political awareness needs to be considered as a competency that needs immediate attention in the world of education. Second, the trend in educational activities is towards programs being developed through increasingly rich interactions. The rapid digitalization situation also needs to be considered. Third, the availability of learning media that can strengthen political awareness needs to be optimally developed. The points above are strong considerations in confirming a study regarding the Formulation of Technology-based Interactive Learning Media to Revitalize Citizens' Political Awareness. The starting questions to direct the discussion in the article include; 1) how is the development of research on learning media to raise political awareness; 2) how is the formulation of interactive learning media in strengthening political awareness; 3) what are interactive media can be considered as an alternative to practically increasing political awareness among citizens?.

## RESEARCH METHOD

The research method applied goes through at least three interrelated stages; 1) qualitative exploration by reviewing research developments in the literature in a study of aligned themes; 2) objective measurement of research subjects (young citizens) using the verbal rating scale (VRS), numeric rating scale (NRS), and graphic rating scale (GRS) methods. The data obtained from these two methods is then used to determine ideal formulations for realizing political awareness (conceptual framework development). A solid conceptual framework helps you critically articulate and examine specific phenomena of their context and export and refine your sense of context at multiple levels (Ravitch & Riggan, 2016). Two basic stages of this research are presented to produce a complete study that can answer the problem fundamentally. These two stages are collaborated to create an ideal translation regarding the contextual situation.

Scientific measurements through literature studies with secondary data as indicators help broader studies and uncover a lot of data and facts that previous researchers have discovered. However, scientific analysis of secondary data cannot be used entirely as a moment of complete justification. Thus, this research also follows up on the literature data with empirical measurements on closer subjects. Empirical measurements are carried out using a quantitative approach to present nominal data that can be translated factually. The above stages will then lead to the complete translation of data about how this research collects factual evidence. The information collected is then considered in more depth to determine the ideal learning media design for forming ideal political awareness. At least, the scheme described above can be understood with the research syntax structure in the Figure 2.



**Figure 2.** Research methods

Figure 1 shows research employs a systematic methodology consisting of three main stages. First, a literature review is conducted to gather general ideas, collect relevant data, and process information related to political education, learning media, and political awareness. This stage includes a selection process based on inclusion and exclusion criteria, focusing on publications from 2019 to 2024, written in English and sourced from reputable academic journals. Second, a quantitative review is performed using two evaluation methods: GRS and NRS. Data from approximately 1000 participants is analyzed to measure political awareness objectively based on predetermined indicators. Finally, the findings from both qualitative and quantitative analyses contribute to the conceptual framework development, aiming to formulate an ideal political education media. This stage involves data processing, elaboration, and conclusion drawing to create a compelling and adaptive learning model for enhancing political awareness.

## RESULTS AND DISCUSSION

### Results

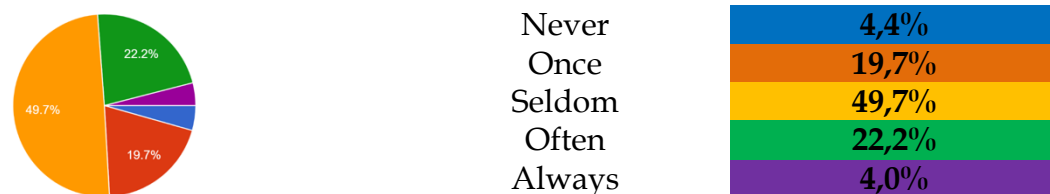
To get an analytical picture of previous research, the researcher describes several studies that align with the themes of learning media, social media, digital media, and citizens' political awareness. From several of these concepts, the researcher accumulated several scientific articles that can be used as secondary sources to determine the boundaries set by previous researchers regarding the relationships between the variables discussed in this research. To be able to present it more systematically, the researcher will describe several distributions of the main findings submitted by several researchers regarding the justification for each of their findings. It needs to be clarified that the findings described in this table are not entirely what the researchers took by reposting. Researchers try to conduct reduction analysis to determine the data needed to provide information that enriches studies in other research. In other words, the researcher selects several findings from each research result that are in line with the research data needs according to the correlation of the variables sought and attempted to be explained.

**Table 1.** Analysis of findings in research related to the variables in this study

Article Identity	Analysis of findings related to the variables in this study
Huang, Y., Lin, M., & Liu, X. (2024). Digital media and interactive E-learning applications in art teaching processes are based on big data platforms. <i>Entertainment Computing</i> , 51. <a href="https://doi.org/10.1016/j.entcom.2024.100737">https://doi.org/10.1016/j.entcom.2024.100737</a>	The use of digital media can provide a positive color to efforts to improve the quality of facilitating the distribution of educational resources (Huang, 2024)
Boonchutima, S., Chongkolrattanaporn, T., & Kongchan, W. (2023). Cognitive Load Theory in Online Education: Leveraging Interactive Media, Testing, Interaction and Enhancing Engagement and Active Learning. <i>TENCON 2023 - 2023 IEEE Region 10 Conference (TENCON)</i> , 2-9. <a href="https://doi.org/10.1109/TENCON58879.2023.10322455">https://doi.org/10.1109/TENCON58879.2023.10322455</a>	The use of diverse interactive media tailored to the learner's level increases participation but also reveals potential weaknesses such as student fatigue. (Boonchutima et al., 2023)
Skulmowski, A., & Rey, G. D. (2020). Subjective cognitive load surveys lead to divergent results for interactive learning media. <i>Human Behavior and Emerging Technologies</i> , 2(2), 149-157. <a href="https://doi.org/10.1002/hbe2.184">https://doi.org/10.1002/hbe2.184</a>	Studies that assume that media outside of learning content can be a burden for learning are assumptions that need to be proven (Skulmowski & Rey, 2020)
Li, Q., Luo, T., & Wang, J. (2022). The role of digital interactive technology in cultural heritage learning: Evaluating mid-air gesture-based interactive media of Ruihetu. <i>Computer Animation and Virtual Worlds</i> , 33(3-4). <a href="https://doi.org/10.1002/cav.2085">https://doi.org/10.1002/cav.2085</a>	The impacts that emerge from various learning media on strengthening cultural heritage
Son, J., Sun, J., & Lee, J. (2018). Interactive learning through social media for large classes in the clothing and textile curriculum. <i>International Journal of Fashion Design, Technology and Education</i> , 12, 1-11. <a href="https://doi.org/10.1080/17543266.2018.1534002">https://doi.org/10.1080/17543266.2018.1534002</a>	The use of social media can be efficient with several activities, namely peer collaboration (Son et al., 2018)
Pérez-Escoda, A., Martínez-Otón, L., Frnández, E. O., & Pedrero-Esteban, L. M. (2024). Social Media as Learning Environments: University Students Perceptions. <i>26th International Symposium on Computers in Education, SIIE 2024</i> , (July), 10-13. <a href="https://doi.org/10.1109/SIIE63180.2024.10604583">https://doi.org/10.1109/SIIE63180.2024.10604583</a>	These digital environments have become naturalized spaces for socializing, entertainment, information, communication, work, and even education (Pérez-Escoda et al., 2024)

### Factual Findings

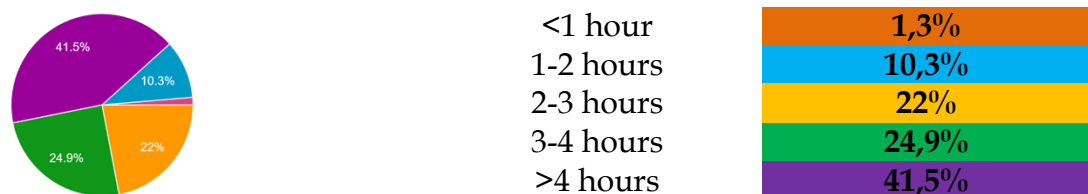
In factual findings, this research also tends to conclude that social media is very likely to be considered a medium for information transfer. Data collected from 523 young residents with a diverse distribution of domiciles and regional origins shows that only 23 people have never sought political information via social media. In addition, almost half of respondents have sought political information several times through social media.



**Figure 3.** Do respondents look for information through social media?



Figure 2 shows more than 40% of respondents justified that they regularly search for information about politics on social media. This data shows that social media is worthy of consideration as one of the media that may have a good influence as a distributor of information related to political themes. This information was collected from respondents with a homogeneous age background, within a reasonably young age range, namely 19-24 years. They stated that social media with high interactive features is often said to be the platform they use to search for information on socio-political themes. Researchers see this data as enjoyable, as citizens can quickly receive political information from their immediate environment.



**Figure 4.** Intensity of social media use in research subject profiles

Its shows respondents from diverse components have a relatively homogenous social media usage profile. Before we justify the meaning of the data above, we need to know that 56% of the research subjects came from rural areas, and the remainder came from urban areas. However, 76.5% of the research subjects are domiciled or reside in urban areas. We deliberately wanted to explain this at the start to justify that urbanity cannot be justified as having a correlation with social media use. That is why researchers claim that the profile of social media use is quite significant for both urban and rural subjects. This data further reinforces that social media needs to be considered so that it can become an information platform that can be effective in touching on specific aspects of citizens.

As explained above, the findings can be a factual basis for determining the ideal learning media formulation to facilitate programs to strengthen political awareness. In this way, this research does not want to be closed only to the meaning of learning media formulations in schools. The learning media referred to, and the formulation sought in this research, is learning media, which is considered adequate in whatever form it is in so that it can be used as a platform for providing effective information to young citizens to increase their respective political awareness. We will explain further explanation in the discussion section by sorting the theoretical and factual findings so that they become a comprehensive study.

## Discussion

### The development of research on learning media to raise political awareness

To carry out systematic research, the author will try to describe the data found in the literature. This aims to present secondary data that can contribute to a more complete understanding by complementing other studies referring to the same theme and starting with a study of interactive learning media variables. Huang (2024) in their research concluded that the use of digital media can provide a positive color to efforts to improve the quality of learning facilitating.

However, we can also criticize this research by examining other studies that consider digital media in learning from the perspective of Cognitive Load Theory (Boonchutima et al., 2023). It turns out that studies on the same theme have previously been carried out with the implication that studies that assume that media outside of learning content can be a burden for learning, is an assumption that needs to be proven with more in-

depth instruments (Skulmowski & Rey, 2020). Thus, these two considerations show that the impact of digital media on learning interactivity gives a mixed impression. From this point of view, we should start to have the perception to be open to the possibility that negative effects might occur in the digitalization of learning media.

Topics that are also important to review are: Does digital media interactivity need to be used in learning programs oriented towards strengthening specific social values? This question can be answered through a study conducted by Q. Li et al. (2022) in their research which examined the impacts that emerged from various learning media on strengthening cultural heritage. In their study, they explained that the results of participants' learning about This cultural heritage differs significantly in the three experimental conditions. In this study, the media that can be suggested is that providing video-based information must be combined with and preceded by multimedia interactive exhibitions to improve memory and understanding enthusiasm in developing tolerance value education (Anggraeni et al., 2022). Furthermore, the author carried out another secondary study examining social media as an important instrument in developing digital literacy as a learning medium. In this formulation, previous research shows that using social media can be efficient with several activities, namely peer collaboration and information search activities through study formats carried out by students in the instrument (Son et al., 2018). This is also in line with other research justifications that these digital environments have become naturalized spaces for socializing, entertainment, information, communication, work, and even education (Pérez-Escoda et al., 2024). Thus, as explained above, the study generally referred to the conclusion of a positive relationship to the hypothesis that social media makes it possible to be considered a medium for learning values. However, cognitive load theory must also be considered to test its correlation with the hypothesized concepts proposed in this research.

### **How to Formulate Ideal Learning Media?**

Learning media is a singular thing, so it is difficult to determine the justification for ideal learning media in a particular learning orientation without knowing the quality of the environment and other learning factors. In other words, learning media is highly correlated with learning factors, both internal and external. From a communication science perspective, this has been proven by significant changes in media consumption patterns, freeing content from device specialization and allowing easier platform exchange (Mitra & Das, 2024). Accuracy in choosing learning media is a decision that the teacher should make by paying attention to the present structure and learning situation. The sentences we convey above are a disclaimer that the learning media we will try to propose in this article may not be the best media for every field of the learning process. However, we are trying to conceptually summarize an ideal learning media that can be carried out towards a fairly specific orientation, namely citizens' political awareness. It does not stop there, our onboarding specifications also boil down to the process of providing information digitally. Thus, the learning media that will be compiled in this concept are digital learning media that can be used efficiently to achieve political awareness.

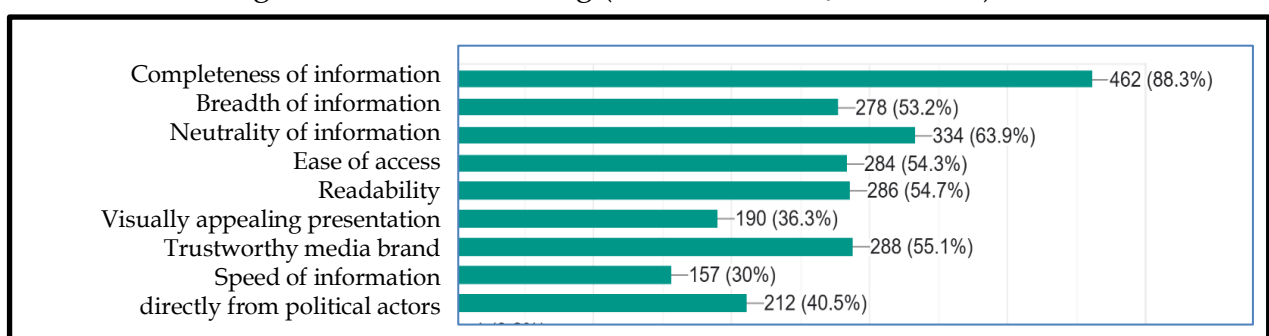
An interesting study was conducted by Alismaiel & Cifuentes-faura (2022), who studied online learning and social media technology from a constructivist perspective. The study presented a finding that interactive learning is one of the important things to do to achieve a positive impact. Thus, a good learning process can be fulfilled with interactive media and in line with the needs of the learning process. For this reason, we have compiled a concept that comes from several studies to justify what possible

instruments need to be considered by learning media makers so that educational subjects, namely students, can functionally use them.

Before determining the ideal learning media criteria, several things need to be considered as instruments for determining the media. In his research, Reigeluth (2023) took several key instruments for research results on learning media, among the instruments used were 1) type of media knowledge; 2) forms of media knowledge; 3) research methods that convey knowledge, and; 4) suggestions for editors and reviewers to embrace new media knowledge. Based on this definition, the type of knowledge and type of media used are important elements that must be considered when formulating a particular learning media.

The findings of other research formulations provide several considerations that need to be considered when compiling learning media from the perspective of implementing education, especially students as subjects. Other research provides quite an important proportion of the external values of an educational subject, namely students so that they can be considered one of the things that can influence the quality of the learning media itself. Media education interventions focused on screen time management and content-related digital skills can be effectively incorporated into daily teaching and relevant to students' well-being (Gui et al., 2022). This shows that external factors are elements that also need to be considered for the preparation of learning media that not only facilitate the learning process but also help learning programs to effectively and efficiently meet their instructional objectives.

Other research shows that cooperative learning makes it possible to use the latest media to be involved in the learning process (Hamadi et al., 2020). The media intended to be used is social media. As we know, empirically, social media has become an instrument of social activity used by almost everyone. The heterogeneity of the characteristics and attitudes of a culture does not significantly limit social media because almost all people with their diversity use social media as one of the applicable media to support their activities. This fact should be used as information for all researchers included in this research to consider social media as an alternative in the process of formulating ideal learning media. Based on these considerations, the researcher considered that good learning media is easy to use and has navigation so that it can be used interactively in learning. Apart from that, learning media must also fulfill pedagogical elements to fulfill the values of an effective learning process. The concept of interactive learning involves the direct application of knowledge (Krusche et al., 2020). Applying this model can help teachers develop the attitudes and skills needed for more meaningful interactive learning (Stieler-Hunt & Jones, 2019).



**Figure 5.** Things that need to be considered when compiling political information media

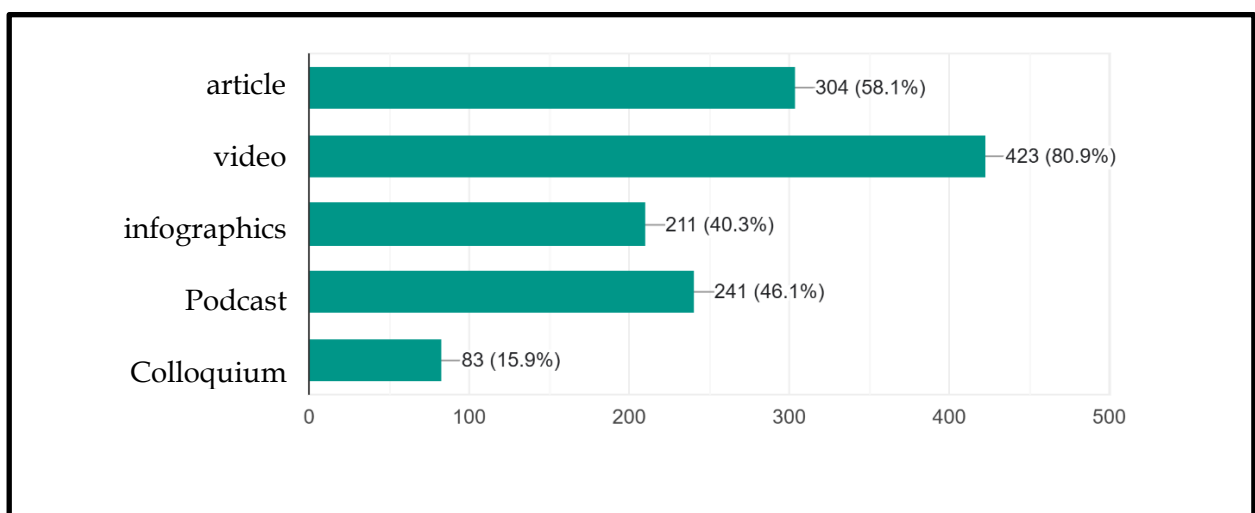
Factually, we collected information data from subjects regarding the information media criteria expected by research subjects. In general, research subjects expect information content that has good integrity. Information is the most important element



in news, so the subject emphasizes it more than other aspects. Information speed, readability, and accessibility are several instruments considered good information media indicators. However, this does not reduce the essence of the urgency of content and information as one of the main instruments. That is why the research subjects emphasized that the most important element is the comprehensiveness of information.

Contextually, this research also measures the expectations of information desired by the subjects. The neutrality of information was quite important for the subjects. In fact, neutrality is the second highest instrument of completeness of information. This shows that partiality towards a group is not what the subjects expected. Neutrality, or balance, is a value that needs to be upheld to ensure that any political information can support the orientation of subjects so that they have the proper awareness in reviewing certain political information. Awareness is not an aspect that arises from the consumption of information alone but exists as a thinking process that is more complex than knowledge. Awareness can also be associated with an understanding by Swart (2023), this can include one's expression of news literacy.

Consciousness is a product domain of thought that is closely related to perception and perspective. This is explained more clearly in research from Chido-Amajuoyi et al. (2023), which explains political awareness and political ideology. As awareness increases, the relationship between group membership and political attitudes becomes more assertive, and the identity gap becomes larger (Jones, 2023). Awareness is something that is closely related to self-regulation (AL-Takhayneh, 2023). This situation has been proven in research findings. These findings also show that increasing political awareness among citizens can be considered a positive intervention needed to change public opinion in favor of women's political empowerment (Dauletova et al., 2022).

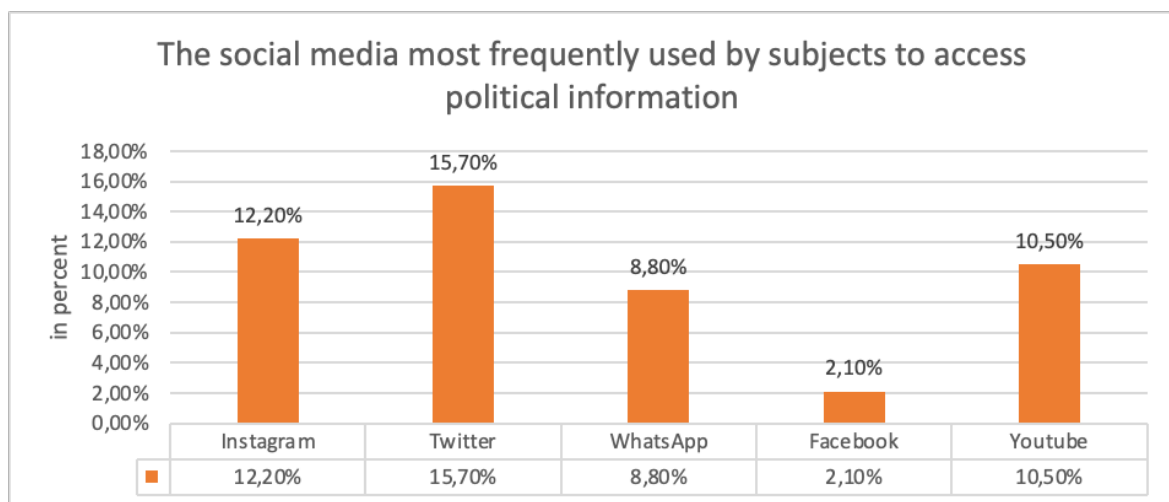


**Figure 6.** The form of information media desired by the research subject

### What information media can be used?

In terms of form, subjects tend towards information provided visually and auditorily. However, writing or articles can also be considered as media content that can be used to convey specific information on a subject. The data, as explained above, shows the preferences of each subject to support the progress of digitalization. Audio-visual has become a learning instrument that is increasingly developing pedagogically analogically. The involvement of information media, which currently transfers infographics in the form of audio-visual and video, can support learning media in getting closer to the subject. Based on data, scientific meetings are no longer an orientation for obtaining popular information. Of course, scientific meetings are needed to test a theory and produce valid information. However, to achieve the need for

massive information transfer, the most appropriate step is to use infographic media in digital instruments to get closer to the subject to be received.



**Figure 7.** Subjects most often use social media to access political information

The information that explains some of the social media choices most frequently used by the subject to access politics, is quite simple to understand because it correlates with data about the tendencies of the form of media expected by the subject. Twitter is the most desired social media. However, more specific data reveals that some societal elements also do not want to search for information on this platform. This situation also actually occurs in several other instruments. The research results show that social media can encourage behavior change (Ghahramani et al., 2022). the data presented is only the percentage of respondents who really want the accessibility of political information from the platforms as attached. It must be acknowledged that social media with high interaction tends to have more bias than other platforms. Researchers pay attention to this in developing learning media to align with the subject's needs and more efficiently encourage political awareness.

In 2019, social media users reached 2.95 billion, which proves that there is active interaction on the media (Hughes et al., 2020). Social media presence will impact influencers, who will become instruments for transmitting political information. Recent findings show that persuasion knowledge does not always hurt advertising outcomes (Chen, 2024). Social media facilitates users to interact with their favorite characters (Muninger et al., 2018). These conditions give rise to the potential for learning interaction, which increasingly provides openness and interaction between one party and another. More than that, the interactivity that emerges is not only related to one or more homogeneous aspects but also gives rise to an effectiveness that increasingly involves traffic between increasingly heterogeneous subjects. As an effort to enrich learning resources, this media is very good for providing complete and increasingly stable information. This is also needed, as the subject explains in the findings section.

However, the practice, as described in the explanation above, does not necessarily provide an ideal learning medium. Several previous research findings indicate that certain elements must be considered when using digital media as a learning medium. The application of media literacy as a medium is very practical and contextual according to the needs of educational subjects with diverse backgrounds (Hobbs et al., 2024). We know that each implementer must come up with a practical solution so that it can create an ideal learning medium. In this case, academics through universities have a potential strategic role in continuing to develop ideal learning media (Klave, Evija; Cane, 2024).

## CONCLUSION

**Fundamental Finding:** This research gives rise to a growing trend regarding the development of learning media by taking the opportunity to strengthen the media by taking advantage of the rush of digitalization. Practically, this research shows that the political awareness profile of young citizens is increasingly diverse and shows new trends. **Implication:** The formulation of the best political education media at least fulfills the ideal learning media according to aspects; content, completeness of information, ease of information transactions, and navigation of its use. Social media can be a platform that needs to be considered when developing learning media. This was decided considering that this platform met several criteria, as previously explained above. **Limitation:** First, the study primarily relies on digital platforms, mainly social media, as a medium for political education, which may not fully capture the perspectives of individuals with limited access to digital resources. Second, the research sample, while extensive, may not represent the broader diversity of young citizens across different socioeconomic and cultural backgrounds. Third, rating scales (GRS and NRS) provide quantitative insights but may not capture the more profound, qualitative aspects of political awareness, such as critical thinking and engagement in political discourse. **Future research** should explore diverse and inclusive approaches by incorporating offline media and traditional educational methods to complement digital learning. Additionally, longitudinal studies could be conducted to examine the long-term impact of digital political education on young citizens' engagement and civic participation.

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