

## Technological innovation: Instructional communication media in History and Civic Education

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### ABSTRACT

**Background:** The teaching of history and civic education, intended to foster national identity, is not fully achieved due to the absence of technological innovation in the instructional communication media used in high schools. **Purpose:** This research explores the need for ICT among students and teachers as instructional communication media to promote national identity in history and civic education. **Method:** This research used the Research and Development (R&D) method. The initial design involved an exploratory qualitative approach, with data collected through interviews with teachers and students from four high schools in Malang City, along with documentation from the *Kurikulum Merdeka*. The data were then analyzed using interactive analysis techniques to understand the information technology and communication needs of students and teachers for simulating national identity in history and civic education. In the next stage, a development approach was carried out to construct a model for instructional communication media that incorporated technological innovation to simulate national identity in history and civic education. **Results:** The results indicate that instructional communication media for promoting national identity through simulated history and civics education require technological innovation in the form of the NUSANTARA.IN application, which offers: Teaching materials on history and civic education tailored to students' characteristics, A virtual reality feature that provides students with a virtual learning experience in history and civic education, and User-generated content to build a network among students for learning history and civic education. **Conclusion:** NUSANTARA.IN, which includes three distinct features, is a technological innovation designed to serve as an instructional communication media, enabling students and teachers to simulate national identity in history and civic education. **Implications:** The findings from this study contribute to the theoretical advancement of instructional communication media by incorporating concepts such as virtual reality, user-generated content, and student networking in high school education.

**Keywords:** Technological innovation; instructional communication media; high school; national identity; history education

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## INTRODUCTION

Building national identity in the learning of history and civic education is expected to strengthen the character of high school students in facing the hegemony of foreign cultures and ideologies brought by ICT advances (Huang & Liu, 2018; Humaero & Dewi, 2021). However, learning cannot become a panacea for students over the hegemony of foreign cultures and ideologies. Current data shows that high school students are part of Gen-Z ICT users (manifested in social media applications) whose behavior is considered the most disrespectful in the Asia Pacific based on research by Microsoft 2020 (Cempaka, 2021).

Instructional communication can be used to build national identity in the learning of history and civic education for high school students. As explained by (Richmond et al., 2020), instructional communication as a practice provides strategic and effective communication guidance for teachers and students for successful learning in the classroom. Furthermore, Myers (2017) explains that instructional communication for classroom learning involves how student learning strategies, instructor teaching strategies and classroom management practices, instructor and student characteristics, as well as the initiation and maintenance of teacher-student relationships influence the teaching-learning process to achieve learning goals.

The instructional communication process in classroom includes six important elements, namely: teacher (subject who is the source of learning in the classroom), student (subject who gets learning content from the teacher), content (learning content material in the classroom), media/channel instructional strategy (media used by teachers and students in the classroom), evaluation/feedback (feedback from students in the form of verbal/non-verbal, and evaluation of learning achievements) (Richmond et al., 2020; Wahyudi & Laturrahkmi, 2022), and the learning environment (in the form of physical/place and atmosphere where learning takes place) (McCroskey et al., 2004; Oliver & Oliver, 2022).

Six elements of instructional communication in the learning process are used to achieve

students' cognitive aspects (analyzing reasoning/thinking), students' affective (attitudes), and students' psychomotor (behavior/action abilities) (Myers, 2017; Richmond et al., 2020; Wahyudi & Laturrahkmi, 2022). Likewise, the process of building national identity in the learning of history and civic education for high school students should involve the six elements of instructional communication. The six elements of instructional communication are implemented by teachers strategically and holistically into the learning process.

This study focuses on the instructional communication strategy/media elements that can support the national identity simulation process in the learning of history and civic education for high school students. Instructional strategy in the learning process is not only related to how content and messages are delivered by teachers to students, but also related to instructional channels and media used to deliver content and messages (Alhamami, 2023; Richmond et al., 2020). ICT has dominantly become part of instructional communication strategies in the learning process (Baumeister et al., 2021; Yusop et al., 2021).

Empirical problems in four high schools in Malang City show that the transition from the 2013 Curriculum to the *Merdeka Belajar* Curriculum requires ICT, especially to support the implementation of content differentiation, process differentiation, and product differentiation in the learning of history and civic education. Content differentiation refers to what type of content the teacher will teach to students; Process differentiation refers to learning strategies created by teachers and students in the learning process; Product differentiation is in the form of output produced by students in the learning process (Nisa, 2023; Sukmaindrayana & Yulianeu, 2022).

So far, the use of ICT by teachers and students in four high schools in Malang City is still limited to supporting instruments for the learning of history and civic education. Pre-research conducted through interviews shows that teachers still use ICT such as Google Drive, Google Classroom, Google Meet, and Zoom as a medium for transferring knowledge of history and civic education. Even though some of these platforms are used collectively for learning

processes such as collective assignments, sharing learning materials, and collecting assignments - they are not yet used optimally for the instructional communication process (Six Elements from Richmond et al., 2020; Wahyudi & Laturrahkmi, 2022) in the learning of history and civic education.

Apart from that, another problem that occurs in four high schools in Malang City is a passive atmosphere in the learning of history and civic education, so interaction between teachers and students does not take place well in the classroom. As explained by student and teacher informants, the interactive atmosphere is determined by a teacher's pedagogical ability to liven up the atmosphere in the classroom. In line with this, a study by Dhillon & Kaur, (2021) revealed that teachers' pedagogical abilities determine students' interactivity and motivation in learning in the classroom. An interactive, creative, and collaborative atmosphere is needed in the learning of history and civic education to be able to build a national identity.

We assume that ICT can support the *Merdeka Belajar* Curriculum in implementing differentiation of learning content, processes, and products - as well as supporting a more interactive classroom atmosphere in the learning of history and civic education. However, ICT innovation is needed to support an independent curriculum and create a more varied-interactive classroom atmosphere even though it is tailored to the needs of students and teachers, so that the feasibility aspect of using ICT can match the targets and needs of its users. As explained by Ghane et al., (2024), feasibility is needed for ICT innovation so that it can be used appropriately to solve problems.

Recent studies regarding the use of ICT in learning show that ICT is an instrument to support the learning process. As shown by Rutkowski et al., (2011), three national education systems, namely South Africa, the Russian Federation, and Thailand, have schools based on the consistent use of ICT in 21st-century teaching activities. Even though ICT helps the learning process in the classroom, Drossel et al., (2017) revealed that the use of ICT in the learning process requires collaboration between teachers to become an important predictor in the success of implementing digital media in education, as

occurs in six education systems in Europe.

Furthermore, the use of ICT in learning is also used to create a Virtual Learning Environment (VLE) for students. As a study from Li et al., (2022) shows, most of the innovations that support VLEs (such as virtual classrooms and interactive quizzes) were abandoned or faded before new learning and teaching practices occurred (COVID-19 times). The study by Singh et al., (2021) provides an in-depth review of the use of blended learning methods, the evolution of hybrid teaching models, and the readiness of teachers in terms of experience in dealing with the COVID-19 situation. As a result, support from educational institutions is needed to continue to provide teacher facilitation and support, both in the use of technology and pedagogical design, to help teachers develop the meaning of action as a priority (Li et al., 2022; Oliver & Oliver, 2022).

ICT is also an innovation in the learning process in various forms such as game-based learning. The study by Banihashem et al., (2023) synthesizes existing literature (Scopus, WoS, ERIC, IEEE) to provide a conceptual framework for how learning analytics can improve online game-based learning practices in higher education. The study by Cantoia et al., (2023) found that teachers in Italy use ICT to support GBL (Game Based Learning) to encourage student engagement and academic continuity in times of crisis, but also as a flexible and effective environment to encourage strategies active learning in both face-to-face and distance education.

From instructional communication studies and ICT, as shown by Singh (2021) ICT can act as a teacher of the teaching-learning process, and allow for the development of new pedagogical tools in the classroom. However, a study from Yu et al., (2023) explains that teacher competence is needed to use ICT appropriately for pedagogical media, so that it has a correlation with student abilities. Apart from teacher competence in using ICT, teacher collaboration is also needed in using ICT to support the learning communication process in the classroom (Drossel et al., 2017). Thus, the use of ICT to support the instructional communication process requires competence and collaboration from teachers who act as

instructors and facilitators of learning.

The experience of students using ICT as a communication media in learning, shown in a study by Yasya et al., (2022) revealed the use of mobile communication had a positive impact on the learning and experience of Filipina students, especially how communication helped them continue their education even though it was disrupted by the Pandemic. There are barriers such as poor connections, English language skills, and language affecting their academic performance. Meanwhile, a study from Mielikäinen & Viippola (2023) revealed that students perceive project-based learning in an online setting positively. However, there are problems in social interaction and actual application of the knowledge and skills learned. The challenges of using ICT in task management and scheduling, as well as receiving feedback, harm the learning experience.

Not much different from the findings of a study from Wagler (2019) revealed that ICT-based communication is the priority for students to support the learning process, but on the other hand it causes the boundaries between personal and professional life to become blurred. In addition, ICT creates a layer of physical separation between students, lecturers, and lecture content – they do not have to meet face-to-face and interact physically in the classroom. The findings from Wagler (2019) are in line with McLuhan (1964) concept of technological determinism with the main premise that the presence of technology will change the way human life communicates, and are in line with the concept of a network society from Castells (2023) which places ICT as a means for a networked society without barriers physique.

Abendschein et al., (2021) explain that ICT is not just a learning medium, but can be a communicator, namely a teacher in the form of a social robot who interacts directly with students and provides knowledge to students. According to Abendschein et al., (2021), reconstruction is needed that places teachers as humans and ICT as social robots to collaborate in classroom learning, because the expertise of teachers and social robots/ICT can provide extensive knowledge to students. Likewise, Kim (2021) study explains that there is potential for machine agents in education that can help

create a more positive and meaningful teaching and learning environment for students. ICT as a machine agent acts as a source-communicator that transmits knowledge content to students.

More meaningful learning can be created through the use of ICT with VR features, as revealed by a study by Laine et al., (2023) that student experiences are mostly positive with various physical, cognitive, and emotional abilities being actualized. Students who use VR for learning get the experience of time travel to an imaginary space. In line with this, Alam & Mohanty (2023) study explains that the application of immersive VR, accompanied by textual cues or scaffolding, can be beneficial for young students because it provides a different meaning to their imaginary experiences. Meanwhile, a study from Vallade et al., (2021) revealed that students felt the benefits of using VR in terms of positive and negative emotional reactions which could act as additional facilitators and barriers to technology adoption in learning.

Although study trends show that the use of various ICTs can support the learning process, it is necessary to underline the study findings from Leung & Cheng (2021) that the use of ICT in learning requires students who have grown up with electronic devices and are adept at navigating the virtual world (digital natives), so they can utilize ICT as a practice tool for virtual simulations to support the achievement of learning outputs. In line with a study from Suyatna (2020) revealed that students' ability to use ICT for learning simulations through e-modules and video media has a positive correlation with improving students' cognitive abilities. Therefore, this research seeks to present ICT innovations to simulate national identity in the learning of history and civic education for high school students in Malang City.

Based on empirical problems regarding the need for ICT to build national identity in the learning of history and civic education in high school, well as trends in ICT studies in learning and instructional communication, this research fills the existing research gap by exploring the need for ICT innovation as an instructional communication media to build national identity in the learning of history and



civic education in high school. Therefore, this study asks a research question in the form of 'How is the need of students and teachers for ICT as an instructional communication media in the learning of history and civic education in high schools in Malang City?'.

This research provides academic contributions to instructional communication studies, especially the instructional communication media section by including technological innovation in the learning of history and civic education for high school students. Then practically, this research contributes by producing a technological innovation model (basic research - qualitative exploratory) to be used as an instructional communication media (applied research) to build national identity in the learning of history and civic education for high school students in Malang City.

## RESEARCH METHOD

This research uses the Research and Development (R&D) method to fulfill research objectives regarding the needs of students and teachers for ICT as an instructional communication medium for simulating national identity in history and civic education. The initial design used an exploratory qualitative approach to obtain data regarding the need of students and teachers for technological innovation to build national identity in history and civic education. As stated by Neuman & Robson (2018), the use of exploratory qualitative methods to explore social phenomena is useful for understanding the behavior of a social phenomenon. This method is the initial stage for constructing empirical knowledge. Exploratory qualitative methods were used to explore data in four high schools consisting of three state schools and one private school in Malang City.

Data collection was carried out in four high schools using semi-structured interviews with teachers (Six Informants – Initial of Y1-Y6) and students in grades X-XII (Nine Informants). The semi-structured in-depth interview technique prioritizes the ethical dimension by hiding the identity of the participants and obtaining permission to interview students in

grades X-XII. The operationalization of semi-structured in-depth interviews is carried out by preparing an interview guide (list of questions) first, and then the list of questions will develop following the answers from the informants (Denzin & Lincoln, 2018). Interviews with high school student informants were carried out with the assistance of teachers from each school, the aim was to maintain research ethics with informants who were under 17 years of age (keeping the informant's identity confidential).

Data collection was completed with documentation techniques by collecting data from *Merdeka Belajar* Curriculum documents used by four high schools in Malang City. According to Denzin & Lincoln (2018), documentation techniques in qualitative research are carried out to obtain notes or documents that can explain the behavior of research subjects, namely in this study teachers and high school students in Malang City. The data obtained from the documentation is not supporting data from in-depth interview data, but rather data to complement each other regarding the need for ICT innovation to simulate national identity in the learning of history and civic education in high schools.

Data analysis uses interactive field analysis from Miles et al., (2014) with the following stages: 1) Data condensation, carried out by compressing the data, which is then coded, and used to compile data categorization/grouping; 2) Data display is carried out by narrating the data which has been categorized into sub-themes according to the research objectives; 3) Verification/drawing conclusions, carried out by reflecting on data that has been summarized and categorized, is useful for obtaining saturation of field data that answers research questions and fulfills research objectives.

Data on ICT innovation needs for teachers and students was generated through interactive field analysis (Miles et al., 2014), then followed by a development approach to construct learning communication media models (Richmond et al., 2020; Wahyudi & Laturrahkmi, 2022), that can be used to simulate national identity in history learning and citizenship education. The results of the development approach are in the form of model illustrations that researchers model for ICT innovation as a communication medium for

learning to simulate national identity in history learning and citizenship education for high school students and teachers in Malang City.

## RESULTS AND DISCUSSION

The learning of history and civic education, play an important role in counteracting the hegemony of foreign ideologies disseminated by ICT (Huang & Liu, 2018; Humaeroh & Dewi, 2021). However, five teacher informants (Y1-Y5) stated that it is not easy to make history and civic education learning an antidote to the hegemony of foreign ideologies and cultures, because foreign cultures themselves are more popular with high school students. Of the 9 students interviewed, 7 students stated that they have a preference for foreign (non-Indonesian) films, rather than Indonesian history and civics films. This further confirms that the learning of history and civic education has not received a high preference from students to be a filter for foreign cultural hegemony.

The learning of history and civic education plays an important role in shaping students' national identity. As research by (Huang & Liu, 2018; Humaeroh & Dewi, 2021) demonstrated, national identity can be formed through the learning of history and civic education with the right curriculum and learning methods for students. Indonesia's national identity can be simulated through the entities of nationalism, national history, regional and national languages, culture, socio-geographical conditions, and national knowledge (Humaeroh & Dewi, 2021).

The issue underlying the low preference for history and civic education learning is that the learning pattern is still monotonous. It is not as interesting as watching films or enjoying contents on social media. According to the majority of the students, the monotonous learning of history and civic education is related to the way teachers teach in the classroom. Likewise, three teacher informants mentioned that interactive and enjoyable learning for students is closely related to the teaching ability of teachers. Interactive learning can be created through instructional communication strategies with a relational approach, so that interaction and emotional closeness are created between

teachers and students in learning (Aloia, 2021; McCroskey et al., 2004).

Teachers have an important position in the learning of history and civic education, which is preferred by students to be a filter of foreign cultural hegemony. Y1 (History Teacher) and Y2 (History Teacher) from two different schools explained that innovation in learning is one of the strategies that can be used by teachers to improve the classroom atmosphere. Learning innovation can be manifested in the use of technology that is of interest to students, for example documentary films and graphics (Mishra, 2018). Likewise, all student informants stated that the learning of history and civic education, although it is made interactive with the use of interesting learning media, does not always rely on reference books and written exams.

Technological innovation for learning history and civic education is no longer the desire of teachers and students, but has become a necessity for implementing *Merdeka Belajar* curriculum in high schools. As stated by Y1, Y2, Y3, and Y5 teacher informants, *Merdeka Belajar* curriculum prioritises learning differentiation which refers to the diversity of services to accommodate the different characteristics of students in the learning process. Technological innovation can be presented to support learning differentiation in ICT, so that technological innovation can be compatible with the curriculum and the needs of teachers and students. As McDiarmid & Zhao (2023) state, technology in education must be based on needs and have a significant impact in changing education.

Teacher and student informants expect that technological innovations for history and civic history are simple or not too complicated, but have features that are important to support learning. According to three teacher informants, not all history and civic education teachers accept technological innovations, especially if the technology is complicated to use. They will accept if the technological innovation is easy to use and helps their work as a teacher. Pragmatism in learning technology innovation must be prioritized, and technological innovation for the learning of history and civic education for high school teachers and students

must fulfill the element of desirability according to the needs and desires of its users (Pansera & Fressoli, 2021).

The desirability of technological innovations needed by teachers and students in the learning of history and civic education includes three main aspects, namely the provision of credible teaching materials packaged in VR format, flexibility for teachers and students in creating history and civic education content, and networking between students from each school to interact together related to history and civic education content. The three aspects were obtained through in-depth interviews with research informants from the teacher and student sides, and examining teaching documents related to the use of technology in the learning of history and civic education.

The first is the provision of credible teaching materials on history and civic education. According to four history teacher informants, credible teaching materials are needed in learning history because this aspect is related to students' knowledge and perspective on the identity of Indonesia. With credible teaching materials on history and civic education, students' knowledge and perspective on national identity will align with the facts and philosophy of the nation (Sujoko et al., 2021). Conversely, if the teaching materials for history and civic education are not credible, students' knowledge and perspectives on national identity can be problematic. According to Y3 and Y1, history teacher informants, history learning materials cannot be taken carelessly from sources that are not credible, because the truth of history can be problematic. Likewise, civic education teaching materials need good credibility to be given to students. Therefore, a feature is needed that provides credible teaching materials on history and civic education in a technological innovation.

Y4 and Y5 civic education teacher informants expect teaching materials or materials about civic education presented in technological innovation to no longer be in the same format as the physical books, because this means only moving books from physical to digital format. Nine student informants also stated that they have less interest in reading

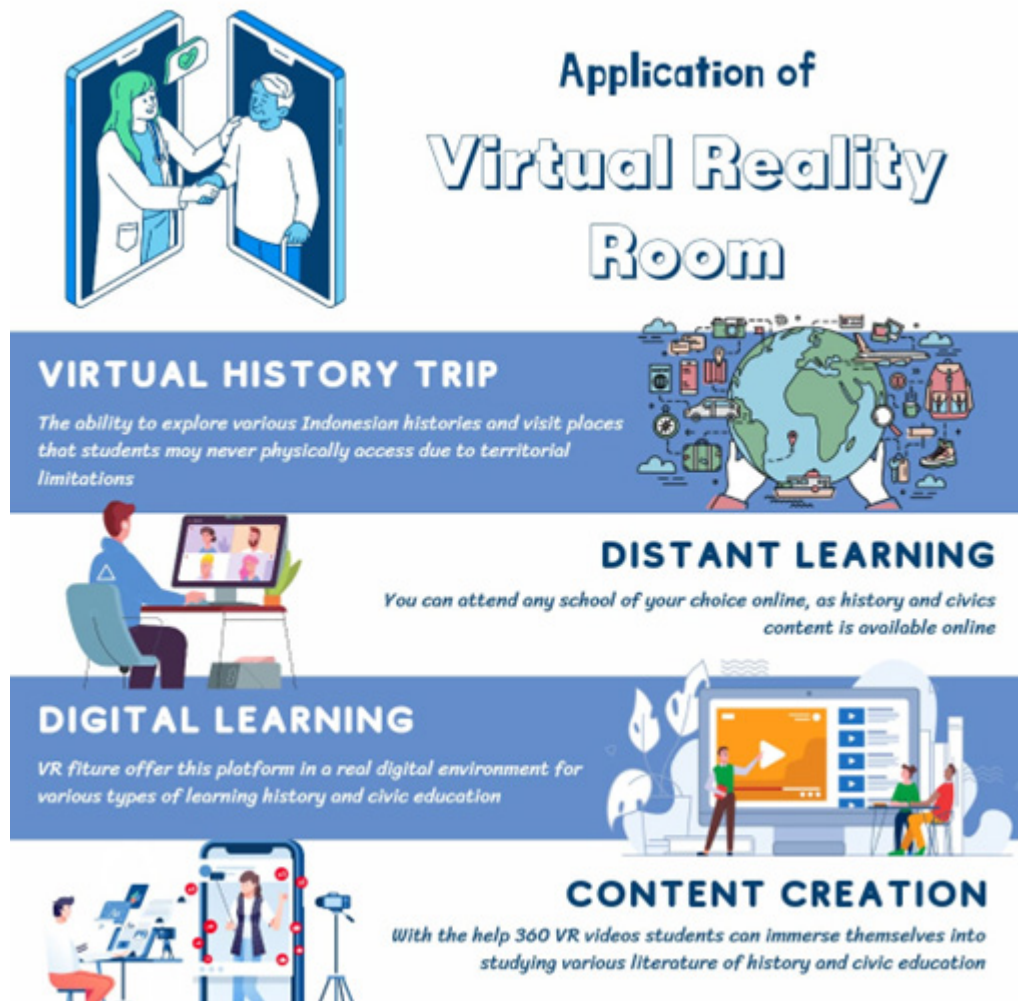
civic education and history books. They prefer materials packaged in other forms such as infographics, visuals, and film documentaries (Mishra, 2018). Y1, a history teacher informant, also stated that history literature so far is still dominated by textbooks, requiring innovation to support RTC which allows teachers and students to be creative in the learning process.

Technological innovation not only presents features containing credible teaching materials for history and civic education, but also innovates history and civic education teaching materials to be closer to students as Gen-Z, so that these teaching materials can be used by high school student users. The teacher and student informants expect the history and civic education materials to be packaged more simply, not only text-based, but combined with graphics, audio-visuals, and film documentaries. However, Y2 and Y7 history teacher informants suggested that textual materials on history and civic education are still presented in technology features. The aim is to make students have a reading preference. Textual material is no longer transferring material that has been in the book of classroom learning, but it can be done through adaptations from credible scientific journals.

The latest technology that can be used for learning history and civic education is VR (Virtual Reality). Teachers and students who became informants welcomed the use of VR for History and Civic education learning in the classroom, which they had never done before. According to Lege & Bonner (2020), VR offers an active learning experience that goes beyond passive reading, as students interact and apply their language skills, resulting in better cognitive and experiential learning for students. Research and development regarding the use of VR in classroom learning also found the results that the level of feasibility of VR as a learning medium is in the feasible category and is able to improve students' ability to analyse changes and sustainability of historical events, and how much VR is developed on practical assessments and easy to use for both students and teachers in schools. The following illustrates the use of VR in classroom learning that has been developed previously (Figure 1).

All teachers and students in this study





Source: Research Result, 2024

**Figure 1 Virtual Reality for History and Civic Education in Instructional Communication Media**

also want VR in learning History and Civic education, so that they get another experience in the classroom. The use of VR in learning History and Civic education will also be able to support the main objective of this research to develop educational applications for high school students to simulate by copying reality (empirical and simulacrum) of historical knowledge and identity of Indonesia. However, the application development will consider two other elements of innovation, namely feasibility (ability to develop it with resources) and viability (sustainability of the innovated application).

The second is the UGC (User Generated Content) feature for teachers and students to

create learning content on history and civic education. This UGC concept is used based on the needs of teachers and students to share-create knowledge content about history and civic education in Malang City. Through the UGC concept, teachers and students can create the history and civic education content they want and then upload it into the technological innovations or features provided. According to Li et al., (2023), UGC in educational applications will allow users to actualize their thoughts and knowledge in the form of digital content.

Informants Y4 and Y6, history and civic education teachers, revealed that the UGC created can increase student creativity to create





Source: Research Result, 2024

**Figure 2 UGC concept for history and civic education in instructional communication media**

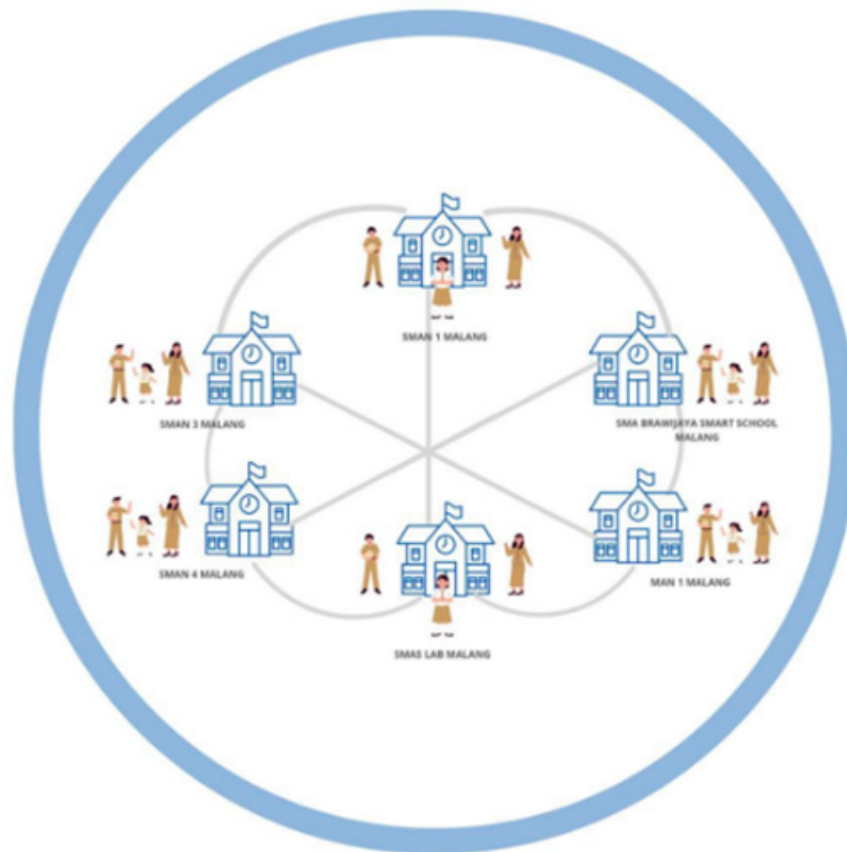
product differentiation in implementing the *Merdeka Belajar* curriculum in history and civic education learning. So far, the product differentiation produced by high school students in history and civic education learning is still limited to conventional dissemination such as printed in the form of posters or graphics to be presented in the classroom. The use of new technology for the dissemination of product differentiation still uses social media such as Instagram and Youtube. The weakness is that the content is mixed with multi-pattern contents, such as entertainment, sports, etc. It cannot be specific about history and civic education content. With UGC, students can upload learning products into technological innovations to support the building national identity.

The advantages of using UGC will support the sustainability of technological innovation in learning history and civic education, because participatory content in technological innovation will be filled by UGC from students and teachers. As Almgren & Olsson (2015) and Putri (2022) explained, UGC can maintain the sustainability of communication media while empowering its users, because the content in communication media is produced by users in a participatory manner. UGC will also make the simulation of history and civic education in technological innovation more diverse, because

the content created by teacher and student users will be adjusted to their preferences and desires in creating content. The scope of history and civic education includes their local, regional and national environment, to material about World History and Globalisation.

The weakness of UGC in technological innovation is that the content created by the app users is difficult to control, so that the content of history and civic education is of doubtful credibility, and has the potential to distort national identity. According to Jean Baudrillard, technological media with simulation capabilities can obscure empirical facts due to the construction of reality in the simulation process (Kaneva, 2018); Li et al., (2023) stated that UGC can present two types of content, namely expressive content for self-actualisation and destructive content because users have the freedom to create content according to their preferences. To overcome the weakness of UGC, technological innovation will have a gatekeeping mechanism, so that the content produced by high school student users can be protected from negativity. The following is a simulation model with UGC features (Figure 2).

The third is student networking feature for sharing history and civic education knowledge content. The student networking feature follows the previous UGC feature that



Source: Research Result, 2024

**Figure 3 Student Network Concept in Instructional Media Communication**

creates content from students published in technological innovations for learning history and civic education. Student networking in this technological innovation seeks to adopt Manuel Castells' concept of network society which explains that modern society is interconnected by the presence of technology (Castells, 2023). The student network to be facilitated through this application innovation will be a digital community network to simulate knowledge of history and civic education.

All student informants in this study stated that the network formed will be able to make them excited in learning history and civic education, because they can interact with friends or students from other schools. Y4, one of the student informants, expected that the network formed can become a community that studies history in Malang City, with students creating content about the history of Malang City, and getting responses in the form of comments and likes from other student users. The formation of a virtual community that can study history and

civic education is also expected by Y1 and Y2 (teacher informants) to make learning no longer monotonous in the classroom. It can become interactive by connecting with students in other schools.

The need for technology or educational applications that accommodate student networks was expressed by Y5, a civic education teacher, because so far students have been networking through social media whose content is far from the dimensions of civic education and knowledge of history. In addition, student networks in studying history in Malang City have actually been formed, but the scope is still at three schools namely High School 1, 3, and 4 Malang City or better known as *SMA Tugu Malang*. With the technology that accommodates virtual networking, the network consisting of students will expand, in accordance with the characteristics of communication technology that eliminates physical barriers and allows users to connect or network (Castells, 2023).

High school students want the network

to not only share History and Civic education knowledge content, but they can also interact interactively such as commenting on posts or uploads of other student users. Interactivity in student networks also enables them to develop their intelligence in socializing, as well as developing a learning process that has differentiation such as in the *Merdeka Belajar* curriculum. Y6, a Civic education teacher informant, explained that the student network is established in technological innovation even though it is carried out, because it is a necessity for the students themselves to be able to obtain learning experiences other than in the classroom. In addition, Y1 and Y2 teacher informants stated that student networks even though they are formed with a positive competitive culture, meaning that when students network, it is in accordance with the purpose of creating the network.

Student informants expressed the need for competition in creating content on History and Civic education knowledge. So, it is not just creating content because of learning assignments from teachers or a form of product differentiation from *Merdeka Belajar* curriculum. More than that, the student network formed in the application will create a competitive atmosphere for high school students as the main users. For example, student content that gets the highest number of likes and comments gets rewards in the form of points or other awards. The following is an illustration of a simulation room for History and Civic education knowledge based on student networking (Figure 3).

The goal of building national identity through History and Civic education learning for high school students with technological innovation encouraged us to conceptualize qualitative data obtained from 6 teacher informants and 9 student informants into an application model that can serve as an instructional communication medium. The application model is based on the features needed by Teachers and Students in learning History and Civic education. We illustrated into an application model named NUSANTARA.IN. Here is the illustration (Figure 4).

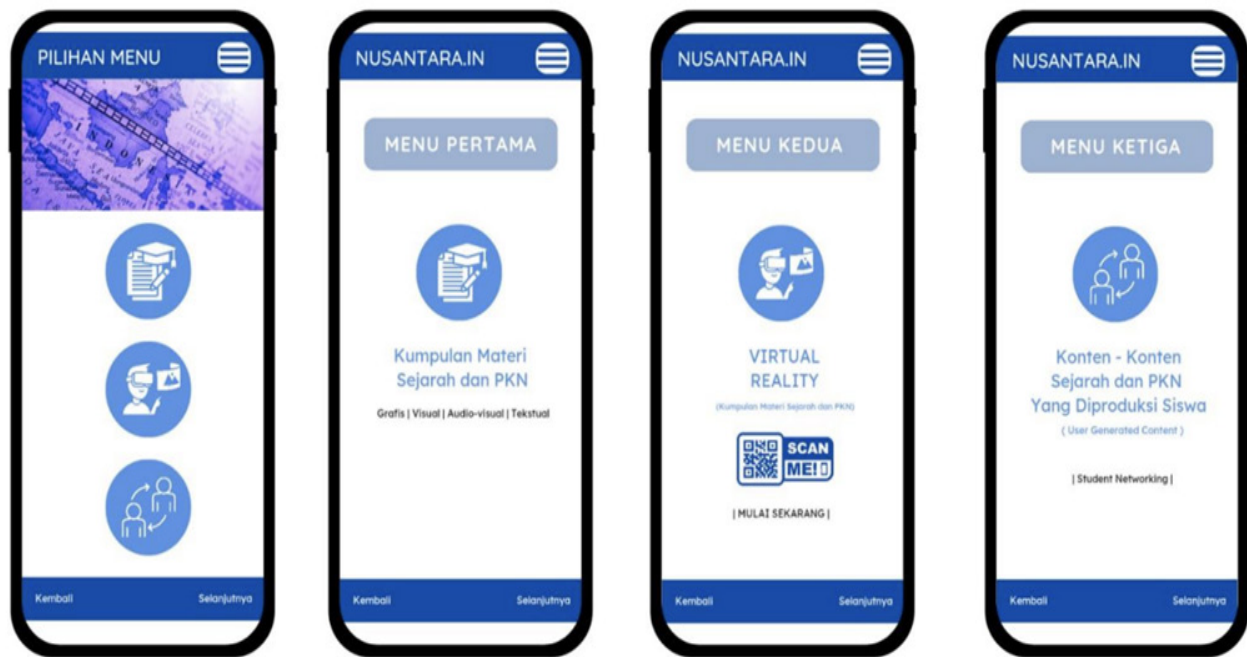
The illustration of the NUSANTARA.IN application presents technological innovation

features needed by teachers and students for simulating national identity in learning History and Civic education. The series of features in the NUSANTARA.IN application are complementary to become instructional communication for simulating national identity in learning History and Civic education for high school students. For NUSANTARA.IN to be an instructional communication media, it displays the following instructional elements.

The front interface of NUSANTARA.IN as an instructional communication media is symbolised by: 1) Paper, ballpoint pen, and *toga* that represent a collection of History and Civic education materials; 2) Symbol of a person using tools and visuals representing the Virtual Reality feature for students to learn History and Civic education; 3) Symbol of two people connected to each other representing the student network that UGC is trying to establish in the NUSANTARA.IN application. The three features are complementary to each other to support teachers and students in learning History and Civic education to simulate national identity for high school students.

The second interface shows an instructional medium element that contains History and Civic education materials that can be used by Teachers and Students in learning in the classroom and outside the classroom. This is because the flexibility of the NUSANTARA.IN App as an instructional communication medium can be used anywhere and anytime as long as the App is operating on the user's Gadget. The flexibility of the application is the main characteristic of Information Communication Technology which is designed to facilitate the needs of its users (Al-Dheleai et al., 2020), namely Teachers and Students to support History and Civic education learning which is useful for simulating national identity.

History and Civic education materials in the knowledge space will be filled by teachers, and History and Citizenship practitioners from universities, as informants Y1 and Y3 explained that to develop technological innovations in learning applications, it is necessary to involve academics as well as practitioners to maintain the sustainability of their innovations. The materials created by teachers and practitioners from universities are used as a form of



Source: Research Result, 2024

**Figure 4 Illustration of Model of Instructional Communication Media in History and Civic Education Learning**

collaboration between academics at the high school and university levels, as well as social engagement to be able to run or maintain the sustainability of the NUSANTARA.IN application, because they will become users who run and produce content in the application (Al-Dheleai et al., 2020).

Teachers and students as users who receive History and Civic education materials expect the format of the material to be different from that in the textbook and in the classroom which tends to be textual. History and Civic education materials are packaged into graphic, visual, audio-visual documentary formats that can create interest for high school students. The materials are obtained from credible scientific journal articles so that they can be used to support the learning of History and Civic education. The credibility aspect of the source material in learning will keep History and Civic education knowledge in trustworthiness, and can be used to building Indonesian national identity for high school students (Rapoport & Yemini, 2020; Sujoko et al., 2021).

The third interface presents VR room instructional media for teachers and students

to use in supporting the learning of History and Civic education. With VR space, it is expected that students get a new experience in learning History and Civic education so that they virtually feel involved in Historical and Nationality events that have been realised into the virtual world (Virtual Reality). The VR room will be a virtual learning space for students to gain knowledge of History and Civic education, so they feel a virtual experience when History and national events take place.

The use of VR in school learning, according to Lege & Bonner (2020), can provide active learning experiences for students that go beyond passive reading, as students interact and apply their language skills, resulting in better learning cognitively and experientially. The use of VR in the NUSANTARA.IN application is expected to be an innovation to attract students to use the application, because so far VR has not been widely implemented into History and Civic education learning in Indonesia.

The fourth interface presents instructional media for the Student Network space for Application users from high schools in Malang City. This feature will offer a space for



students to learn History and Civic education by networking with students in other schools. The network will be equipped with UGC-based content created by students and teachers. They can interact by sharing History and Civic education knowledge content, commenting on it, and communicating with each other based on History and Civic education knowledge. This network is expected to support the simulation of History and Civic education knowledge that is useful in shaping the characteristics of high school students.

The NUSANTARA.IN application as a student networking platform will remove the physical barriers that have prevented students from learning History and Civic education in the classroom. This concept adopts Manuel Castells' network society, which enables technology to network users with each other (Castells, 2023). In addition, NUSANTARA.IN will be another version of McLuhan's (1964) Global Village, as it will be a space that removes the physical barriers between students from one school and students from other schools in learning History and Civic education.

Students' networking in the NUSANTARA.IN App will indirectly lead to digital interactions that provide learning experiences to develop their social and kinesthetic intelligence based on digital space. This will support the KMB that seeks to present kinesthetic intelligence with students who create products from the results of learning History and Civic education and then publish them on the Application to get scientific knowledge through content-based interaction and networking. From their digital interactions, it will also be able to encourage the formation of a digital community that simulates the knowledge of History and Civic education to form the national identity.

## CONCLUSION

The need of students and teachers for ICT to simulate national identity in history learning and civic education - can be facilitated through technological innovation which is realized as an instructional communication media to become virtual learning education in history learning and civic education. The technological

innovation of instructional communication media can be used by students and teachers in history learning and civic education, as well as supporting the implementation of content, process, and product differentiation in the *Kurikulum Merdeka*.

We manifested the needs of teachers and students for ICT instructional communication media into the NUSANTARA.IN application, offers three main features for simulating national identity in history learning and citizenship education, namely: *First*, the feature provides a virtual reality space and content-material learning of history and civic education. Credible teaching materials are provided by teachers from each school and can be accessed by users (teachers and students) from other schools. The virtual reality space contains history and civic education content that is close to students, such as local history in the surrounding environment, regional, and national-international. The benefit is that students gain tiered knowledge about history and citizenship that is close to themselves (local), to national identity and cannot be separated from the construction of national and international historical-civic knowledge.

*Second*, it features the UGC concept for teachers and students to create history and civic education learning content. The UGC concept can support the differentiation process in the learning of history and civic education, because students and teachers from different schools can produce content (assignments) to then upload to NUSANTARA.IN. That way, connections will be created between teachers and students from different high schools who use NUSANTARA.IN.

*Third*, features the Student Network concept to form a virtual community student without physical barriers in sharing knowledge of history and civic education. This feature is a development of the network society concept offered by Manuel Castells. If Manuel Castells assumes that network society is a networked society formed by the presence of ICT (internet) by exchanging information and interacting with each other, then the Student Network assumes that virtual community students are formed by the presence of NUSANTARA.IN by exchanging knowledge about history and civic education.

The advantage of the NUSANTARA.IN as an instructional communication media lies in its features which can provide authentic experiences regarding national identity to students, because it carries out virtual traveling (VR and UGC mechanisms) and virtual communities (student networking mechanisms) in the learning of history and civic education. Meanwhile, the weakness of the NUSANTARA.IN model as an instructional communication media lies in the use of the UGC concept which is vulnerable to historical and civic content that is not validated. Therefore, we need a gatekeeper from history and civic academics behind the NUSANTARA.IN.

This study has limitations in the use of explorative methods, so the data generated is still at the stage of fulfilling the needs of technological innovation for teachers and students to simulate national identity in learning History and Civic education. We suggest that future studies conduct research on the instructional communication process in simulating national identity based on digital technology, by utilizing instructional communication elements such as source/teacher, content/message, instructional strategy/channel, receiver/student, feedback, and instructional context (Richmond et al., 2020; Wahyudi & Laturrahkmi, 2022). Future studies can also conduct research using the SDLC method to create a prototype of technological innovation as instructional communication media.

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