

# The Role of Technological Media in the Character Building Education Process for Generation Z: A Literature Review

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**Abstract:** This research aims to determine various technology-based media used in the world of education to shape character for Generation Z. Research design and method should be clearly defined. The method in this research is a literature review of various research studies published in Scopus-indexed journals. This is the basis for researchers to choose general keywords, namely "technology media," "Generation Z," and "character education." These keywords are then used to obtain internal literature data from the Scopus database. The search was carried out in the period 2010 – 2024. The search results obtained 57 metadata, including titles and abstract and analysis was carried out with the help of VOSviewer to find patterns of interrelationship between studies. The result showed learning media, character and character education, and Generation Z began to be discussed in 2020, so research discussing this can still be said to be new research. The visualization image above shows that most of the research that has been carried out discusses students and education. In contrast, more research needs to be carried out regarding learning media. Research on character education and Generation Z is also based on the above visualizations, which previous researchers have yet to carry out much. Based on the research that has been conducted, it can be seen about several benefits from using technology-based learning media, such as AR Alphabet Book, Game Animation Software, Whiteboard Animation Video, Visual Based Learning, Social Media Video Games, Visual Game Character Design Digital Anti-Corruption, Interactive Teaching Physics Materials, and E-Assessment

**Keywords:** Character; Generation Z; Learning media; VOSviewer

## Introduction

The rapid development of technology has significantly influenced the world of education, mainly student character education. Smartphones, which are increasingly sophisticated and constantly in the hands of children, allow them to access various pornographic shows and sadistic games, which, little by little, can instill bad character in children, which can manifest in the form of hate speech, bullying, violence, and various actions. Other criminals (Potard et al., 2021; Havighurst et al., 2022; Lesková et al., 2023).

The negative influence of technological developments has the potential to target Generation Z, which is technologically literate and whose daily lives are inseparable from technological products (Hwang et al., 2013; Kristian, 2019). Generation Z is often

nicknamed "Digital Native" because their daily activities cannot be separated from technology, such as enjoying sharing videos on YouTube or using the Snapchat application for photos. Messaging, using smartphones with multi-touch interfaces for telecommunications media, preferring to listen to streaming music, and being fans and game addicts (Eva et al., 2022). Therefore, to minimize the negative influence of technology on Generation Z, which is permanently attached to technology, technology-based learning media, especially games, should be used for character education for Generation Z students.

Technology-based learning media can create a positive learning atmosphere in the classroom, such as high learning motivation, and are easier to observe and understand so that the learning process becomes much more effective for Generation Z students (Dukut, 2019).

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Digital-based learning media can be focused on an effort to make it easier for students to understand subject matter, such as the use of picture books and digital animation to make it easier to learn vocabulary and how to pronounce Z students when learning English, the use of animated videos blackboard to teach about vitamins to generation Z students (Purwaningsih & Anggraeni, 2021), as well as the use of Augmented Reality (AR) technology to teach alphabet letters in kindergarten (Dayang Rohaya Awang Rambli et al., 2013) and Augmented Reality (AR) in the form of The Edupark Game application for biology subjects, especially the theme of biodiversity (Pombo & Marques, 2019).

One of the characteristics of Generation Z is that they like playing games. Learning media can utilize online games to learn across themes like Science. Games can also be made specifically to support learning that contains character education values, such as Hajjgame, which is a game about the rituals of Hajj which instills transcendental and social character so that you become a person who is obedient to Allah SWT, humble and inclusive who does not look down on fellow humans (Ardhian Agung et al., 2010), a video game featuring classical music and drama with a message about the character of honesty of the soul and harmony in life (Hery Supiarza & Sarbeni, 2021), visual games to educate Generation Z students to have an anti-corruption character, and various games about environmental awareness amidst global warming and ecological damage (Rahman et al., 2020). This research aims to analyze bibliometrically using VOSViewers to describe the research on the use of technology-based learning media to carry out character education for Generation Z students. This research aims to determine various technology-based media used in the world of education to shape character for Generation Z Research design and method should be clearly defined.

**Method**

The method in this research is a literature review of various research studies published in Scopus-indexed journals (Figure 1).

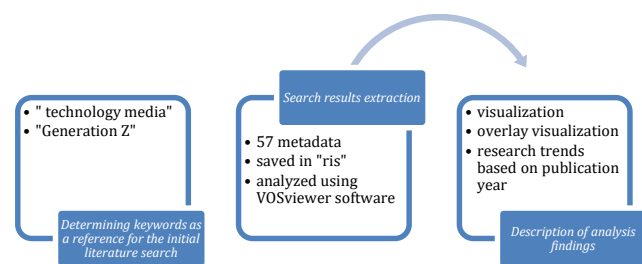


Figure 1. The research flow chart

The literature review stages in this research include three steps. The following are the stages in detail:

*Determining keywords as a reference for the initial literature search*

This research aims to determine various technology-based media used in the world of education to shape character for Generation Z. Therefore, the literature search focused on studies on technology-based learning media and character-building education for Generation Z. This is the basis for researchers to choose general keywords, namely "technology media," "Generation Z," and "character education." These keywords are then used to obtain internal literature data from the Scopus database. The search was carried out in the period 2010 - 2024.

*Search results extraction*

The search results obtained 57 metadata, including titles and abstracts. Next, an initial analysis was carried out with the help of VOSviewer to find patterns of interrelationship between studies. The selected literature is then saved in "ris" form so that it can be read and analyzed using VOSviewer software. VOSviewer is software for visualizing connections between research based on keywords researchers define (Shinta et al., 2024). This software can be downloaded for free (<https://www.vosviewer.com/>).

*Description of analysis findings*

The analysis results are then re-selected based on keywords deemed appropriate to the researcher's needs to achieve the research objectives. The analysis in this research focuses on keyword network visualization, overlay visualization, and research trends based on publication year.

**Result and Discussion**

Learning media is a tool that teachers use as an intermediary to convey learning material to students. Learning media can be digital or non-digital. Examples of digital media are interactive videos, animations, digital games, and audio, while examples of non-digital media are books, modules, and teaching aids (Nainggolan et al., 2019; T Ningsih et al., 2021; Pradibta, 2018). Technological developments that continue to be updated make it easier for every field to carry out its duties. Technology can help make it easier for teachers to process student grades and student data and determine student groups or majors. Generation Z is a generation born between 1995 and 2015 that has the characteristics of being technologically literate, creative, and like to express, but has high levels of anxiety and stress and is easy to complain and self-proclaimed





will help them reach the next level. Digital animation can also be applied through animated videos such as research (Purwaningsih & Anggraeni, 2021), which developed whiteboard animation videos in class X Culinary Vocational School material discussing vitamins in nutrition science subjects. The research results show that the learning media developed is considered very suitable by validators for use as learning media. Visual-based learning also makes it easier for students to understand the material presented. Visual learning media can help students imagine their learning and provide a more direct experience than conventional learning through books (Min et al., 2016).

Generation Z has the characteristics of being technology literate or often interacts with gadgets every day. One of the uses of gadgets for Generation Z is to play social media. Research (Susilawati et al., 2021), which uses social media as a PAI learning medium, reveals that social media is a very relevant medium in teaching Generation Z. This application is considered very appropriate with teacher supervision because Generation Z is very familiar with social media their portion of the virtual world is larger compared to the portion of the real world.

Apart from being familiar with social media, Generation Z is also known to play video games often. This is a reference for developing a video game containing students' learning material. Like research (Shliakhovchuk et al., 2021) that applies a video game to English language learning. The research results show that video games can attract students' attention because they are fun and can also educate students. Using video games in learning can strengthen knowledge of English, informatics basics, strategic thinking, teamwork, cultural knowledge, perspective change, and creativity when using gameplay videos. Character education through video games can also be applied to teach anti-corruption attitudes. Research (Eva et al., 2022) which develops anti-corruption digital games. The game being developed has characters with different backgrounds and stories, where the characters are based on the true story of a slightly modified corruption case. This game is played in teamwork to represent the value of traditional games where players have their roles. With this game, players can feel like heroes who can catch corruptors who have damaged the country's human resources. Based on various studies that previous researchers have conducted, it is known that the application of game-based learning can increase students' interest in learning, focus, and motivation to learn, skills, understanding of the material, and teamwork abilities. This is certainly very suitable if applied in learning to improve mastery of material and shape the character of Generation Z students because they are used to rapid technological developments,

making them accustomed to interacting with gadgets (Ardhian Agung et al., 2010; Chang & Chen, 2023; Couceiro et al., 2013; Florou et al., 2009; Ma et al., 2023; MacKinnon et al., 2015; Pombo & Marques, 2019; H Supiarza & Sarbeni, 2021).

Interactive learning media can be created with the help of Ms. Power Point and Macromedia Flash, which are like research (Murtiani et al., 2019) which develops interactive physics learning media that contains character education. This media is known to be very suitable for application in learning because the validity test results reached 86.4 %, and the practicality test reached 93%. The application of interactive learning media can increase students' interest in learning physics and achieve the demands of the 2013 curriculum with character values.

The application of technology in the education sector can also include e-learning and e-assessment. Digitalization has the characteristic of being able to be manipulated and replicated in the network area. The digitalization of learning media is increasingly visible along with increasingly rapid technological developments (Trisiana, 2021). Learning can be digitalized by applying technology, namely media, used as a tool in education or the learning process to make it more effective and easier for students to understand. The aim is to solve learning problems to improve student learning outcomes (Kim & Jeong, 2018; Sudarsana et al., 2019). Examples of the application of technology in learning are e-learning and e-assessment. E-learning is a learning media that utilizes electronic tools online; e-learning provides services for uploading learning videos, learning materials, quizzes, and a place to collect assignments (May et al., 2012). E-assessment is a platform that is almost like e-learning but more focused on collecting and giving student assignments. Learning was carried out online due to the COVID-19 pandemic some time ago; of course, e-assessment helped make it easier for teachers to give or receive student assignments. Research results also revealed that using e-assessment can help improve students' reading skills (Tutuk Ningsih et al., 2021).

## Conclusion

The search results obtained 57 metadata, including titles and abstract and analysis was carried out with the help of VOSviewer to find patterns of interrelationship between studies. The result showed learning media, character and character education, and Generation Z began to be discussed in 2020, so research discussing this can still be said to be new research. The visualization image above shows that most of the research that has been carried out discusses students and education. In contrast, more research needs to be carried out regarding

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### Author Contributions

Conceptualization, Shinta and Muh. Azhar; methodology and software, Shinta; validation, Partino and Muh. Azhar; formal analysis, Muh. Azhar; investigation, Shinta.; Resources, Shinta; data curation, Fitriah M. Suud; writing—original draft preparation, Shinta; writing—review and editing, Muh. Azhar; visualization, Shinta.; Supervision, Muh. Azhar. All authors have read and agreed to the published version of the manuscript.

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### Conflicts of Interest

The authors declare no conflict of interest.

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