Generation Z's Response to The Use of *Gen.Zas* (Electronic Game-based Health Promotion Media) to Prevent Bullying Behavior in Generation Z

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ARTICLE INFO	ABSTRACT
	Bullying can lead a mental health issues among Generation Z. Preventive efforts can be implemented using modern technological approaches. Online games are particularly popular among Generation Z and have the potential to influence behavior when played frequently. This study aims to develop an online game Gen.Zas, as a preventive measure against mental health problems caused by bullying. A quantitative and developmental descriptive research design was used. In the first stage, the online game was developed, followed by a perception test in the second stage, conducted with 90 Generation Z respondents from Malang city. Three indicators were evaluated: feasibility of presentation, graphic, and storyline feasibility. The results showed that the perception-test has percentage feasibility score of 86.04% (highly valid and well received) for presentation, 70.74% (valid and feasible) for graphics, and 60.5% (valid and feasible) for the storyline. In conclusion, the Gen.Zas game serves as an educational adventure game that addresses bullying in school environment while incorporating assertiveness techniques to help Generation Z manage bullying behavior effectively.

1. **INTRODUCTION**

In 2023, Generation Z (Gen Z) made up the largest young population in Indonesia, accounting for 27.94% of the total population (Antara, 2021). The rapid growth of Gen Z has led to various societal challenges and negative impacts. These issues arise due to the distinct social, cultural, ethical, and behavioral patterns of this generation (Tarigan et al., 2022) One of the key differences between Gen Z and previous generations is their strong technological proficiency and ability to adapt quickly (Andino, et al, 2024). However, this reliance on technology has also contributed to an increase in mental health issues, including anxiety, stress, depression, suicidal tendencies, and early psychosis (Gaete et al., 2021).

Mental health problems in Gen Z are influenced by their coping mechanisms and problem-solving approaches. For instance, Gen Z tends to express dissatisfaction more openly when facing challenges (Wei et al., 2023). Additionally, their dependence on technology, particularly smartphones, makes individual coping strategies less effective in addressing these issues. Another significant concern is the prevalence of cyberbullying, or online harassment, which has become increasingly common among this generation (Mahmud et al., 2023).

Bullying among Gen Z can be categorized into two types: verbal and nonverbal. However, the most prevalent form is cyberbullying, a type of nonverbal aggression (Euajarusphan, 2021). Cyberbullying involves repeated aggressive behavior through electronic media targeting individuals or groups (Mihelič et al., 2023). A 2020 study found that 47% of Gen Z in Indonesia had been victims of cyberbullying, with social media being the most common platform (71%), followed by chat applications (19%) and online games (5%) (Herman et al., 2020). Moreover, 36% of bullying cases in Indonesia are attributed to Gen Z (Priscillia et al., 2022).

The impact of bullying on mental health affects both perpetrators and victims. Perpetrators may develop aggressive tendencies and become addicted to repeated bullying behavior, while victims are at risk of experiencing anxiety, stress, depression, low self-esteem, suicidal thoughts, and early psychosis (Schonfeld et all, 2023). To address this issue, effective bullying prevention models are needed to mitigate mental health risks. Assertive training has been identified as a key strategy in preventing bullying behavior and reducing the likelihood of risky behaviors among adolescents (Golshiri et al., 2023; Avşar & Ayaz Alkaya, 2017). Some developed countries have explored the use of games as a method to prevent mental health problems. Given Gen Z's strong attachment to mobile gaming, online games can serve as a preventive tool to promote mental well-being (Alfianto & Jayanti, 2020).

Online games are widely used by Gen Z on their mobile devices (David et al., 2021). However, excessive gaming can lead to negative consequences such as behavioral disorders, sleep disturbances, and mental health issues, including stress and depression (Khamida et al., 2020). Current research focuses on developing an online game model that serves as a health promotion medium. This approach is particularly beneficial for Gen Z in preventing mental health problems caused by bullying. The objective of this study is to develop an online game, *Gen.Zas*, as a preventive measure against bullying-related mental health issues by incorporating assertive training for Gen Z.

2. METHOD

2.1 Research design

This study employs a quantitative descriptive research and development approach. It consists of two stages: the first stage involves designing the *Gen.Zas* application (*Electronic Game Based on Mental Health: Assertive Behavior in Preventing Bullying in Gen Z*), while the second stage focuses on testing Generation Z's responses to the application.
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2.2 Setup and Samples/Participants

This study includes 90 respondents, selected using purposive sampling techniques. The inclusion criteria are as follows: participants must be Gen Z (aged 18–24 years old), have experience as either a victim or perpetrator of bullying, and own a smartphone.

2.4 Measurement and Data Collection

The development of this game follows the multimedia development concept proposed by Sutopo, which consists of six stages: (1) Concept stage, this stage defines the purpose of the program, the target audience, and the type of application being developed.; (2). Design stage, in this stage specifications related to the program's architecture, style, appearance, and material requirements are created; (3). Material collection, whole necessary materials are gathered according to the design specifications; (4). Assembly, multimedia objects and materials are developed based on the predetermined design; (5). Testing, after development is complete, the application undergoes testing to identify errors. This phase, often referred to as alpha testing, is conducted by the application developer in a controlled environment; (6). Distribution as the final stage, the completed application is stored in a designated storage medium for distribution.

2.5 Data analysis

The data obtained was analyzed using percentage calculations to determine the extent of Gen Z's response to the use of *Gen.Zas*. The percentage of student responses is calculated using the formula below:

$$\text{Percentage} = \frac{\text{Number of scores obtained x 100\%}}{\text{The ideal score of the entire items}}$$

The feasibility interpretation is based on the percentage score: A score greater than 84 is considered very valid; a score between 68 and 84 is considered valid; a score between 52 and 68 is considered quite valid; and a score of 52 or below is considered less valid. Meanwhile, the percentage of respondents' responses is as follows: A score between 81% and 100% indicates a very good responses; a score between 60% and 80% indicates a good responses; a score between 41% and 59% indicate moderate responses; a score between 20% and 40% indicates adequate responses; and a score below 20% indicates a poor responses (Alfianto et al., 2023).

2.7   Ethical considerations

This research received ethical and feasibility approval from the Health Research Ethics Committee of the Chakra Brahmanda Lentera Institute with No. 059/31/VII/EC/KEP/LCBL/2024.

3. **RESULTS**

Generation Z Response on the Feasibility of Game Presentation (n=90)

The results of Generation Z's response to the feasibility of the *Gen.Zas* game, as shown in Table 1, indicate a score of 86.04%, which is categorized as very valid and highly feasible for use as a bullying prevention game.

Table 1. Results of Generation Z Response on the Feasibility of Game Presentation (n=90)

No	Questions	Answer	
		Yes	No
1	Is the language used in the game easy to understand?	82	8
2	Do you enjoy learning about bullying through games?	89	1
3	Does using *Gen.Zas* Game make it easier for you to play?	87	3
4	Is the use of *Gen.Zas* Game useful in recognizing and preventing bullying behavior?	87	3
5	Does *Gen.Zas* Game motivate you to learn about bullies?	67	23
6	Does *Gen.Zas* Game make learning about bullying more interesting?	84	6
7	Is using *Gen.Zas* Game media more effective in conveying information about bullying?	73	17
8	Do you think it's harder to convey information about bullying when you're playing games?	62	28
9	Do you agree that the *Gen.Zas* game app is being developed again to introduce more about bullying behavior?	66	24
	Maximum Score	810	
	Number of correct scores	697	
	Final percentage	86,04%	
	Validity percentage	Very Valid/Very Worthy	

Generation Z Response on the Feasibility of Game Graphics (n=90)

The results of Generation Z's response to the feasibility of the *Gen.Zas* game, as shown in Table 2, indicate a score of 70.74%, which is categorized as valid and feasible in terms of game graphics for use as a bullying prevention game.

Table 2. Results of Generation Z Response on the Feasibility of Game Graphics (n=90)

No	Questions	Answer	
		Yes	No
1	Does the appearance of this *Gen.Zas* game attract you to play?	71	19
2	Does the *Gen.Zas* game interface look attractive and good?	72	18
3	Does *Gen.Zas*' game design make it difficult for you to understand bullying behavior?	53	37
4	Does the *Gen.Zas* game interface broaden your horizons when it comes to bullying behavior?	67	23
5	If the *Gen.Zas* game had a new version, would you still play it?	70	20
6	Is *Gen.Zas* game hard to play?	49	41
	Maximum score	540	
	Number of correct scores	382	
	Final percentage	70,74%	
	Validity percentage	Quite valid/feasible	

Generation Z Response on the Feasibility of the GEN Game Storyline. ZAS (n=90)

The results of Generation Z's response to the graphic feasibility of the *Gen.Zas* game, as shown in Table 3, indicate a score of 60.5%, which is categorized as valid and acceptable for the game's storyline as a bullying prevention tool.

Table 3. Results of the Generation Z Response on the Feasibility of the Game Storyline (n=90)

No	Questions	Answer	
		Yes	No
1	Does the storyline in *Gen.Zas* Game make it easier for you to understand bullying behavior?	73	17
2	Do you think the storyline in the *Gen.Zas* game is boring?	53	37
3	Does the storyline in the *Gen.Zas* game make it difficult for you to understand the concept of bullying behavior?	47	43
4	Does the storyline in the *Gen.Zas* game make you even more confused in understanding the concept of bullying behavior?	45	45
	Maximum score	360	
	Number of correct scores	218	
	Final percentage	60,5%	
	Validity percentage	Quite valid/feasible	

4. DISCUSSION

Based on a literature review, researchers identified a phenomenon occurring among Generation Z—a moral decline, as reflected in various crimes committed by teenagers, including bullying behavior (Källmén & Hallgren, 2021). Bullying is a form of repetitive aggressive behavior, perpetrated by an individual or group and directed at another individual or group (Voisin et al., 2023). Victims of bullying are often adolescents with low levels of assertiveness, which is frequently characterized by irrational fears, making them vulnerable to anxiety and ultimately unable to defend their personal rights (Menabò et al., 2024). To address this issue, effective health promotion media are needed—especially through a health education approach that is engaging and easy for Generation Z to understand. One such approach is a mental health-based game application (Alfianto & Ekaprasetia, 2023).

The *Gen.Zas* application is an electronic adventure game designed for bullying prevention. It includes various realistic settings, such as school, home, and a psychology room. The game allows players to assume different roles in these environments, starting with daily activities and engaging in assertiveness training to collect points (Ekaprasetia et al., 2018). At the beginning of the game, players are presented with a bullying case and must choose appropriate actions to resolve it. As they progress, they complete tasks related to bullying prevention, ultimately earning scores based on their decisions (Nastiti et al., 2021). Results from a Generation Z response questionnaire, conducted in both limited-scale and wide-scale tests, revealed positive feedback on the use of *Gen.Zas* as an electronic game-based health promotion tool for bullying prevention. Key findings include: the majority of 89% of participants (n=89) reported feeling happy when learning about bullying through the games; 72 participants found the display of *Gen.Zas* games appealing and engaging; 73 participants stated that the storyline in *Gen.Zas* Game help them understand bullying behavior. Role-based 3D simulation games developed using Unity have proven to be effective in raising awareness, teaching empathy, and providing adolescents with social skills to counter the negative effects of bullying (Yosep et al., 2024). Prior study have demonstrated that educational game application can effectively improve children's social skills and awareness of important issues like bullying. This study further supports the idea that educational games can increase adolescents' awareness and understanding of bullying (Prasetyo et al., 2024).

5. CONCLUSION

The *Gen.Zas* game application is an educational adventure game that addresses bullying in the school environment, incorporating assertive techniques to help layers learn how to combat bullying behavior. The study results indicate that *Gen.Zas*—an electronic game-based health promotion tool for mental health and bullying prevention—is an effective alternative for preventing bullying among Generation Z.

6. ACKNOWLEDGEMENT

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