Game Based Learning, 1(1), 2025, 39-44

Do design and emotions in games play a role in shaping player perceptions? A systematic literature review

Amethyst Hasna Nurul Zara, Agus Juhana*

Universitas Pendidikan Bandung, Dr. Setiabudi St. No.229, Bandung, West Java, 40154, Indonesia
*Corresponding author, email: agus.juhana@upi.edu

Article History
Received: 11 April 2025
Revised: 25 May 2025
Accepted: 26 May 2025
Published: 1 June 2025

Keywords
Character design
Emotional
Emotional character
Emotional design
Game

Abstract
The importance of audience's online response to broadcast media in the digital era and the role of emotions displayed by game characters in enhancing player engagement. Although game characters can trigger various emotions, systematic research on specific design features that influence player emotions is still limited. Using the Systematic Literature Review (SLR) method, this study discusses character emotions in games and their effects on players. The research shows that well-designed characters have the potential to remain memorable to players even after they no longer appear in the game. Additionally, moderately cartoon-style character designs have been shown to be more effective in enhancing positive emotional experiences compared to designs that are slightly realistic or overly exaggerated. Character personalization can also influence player emotions, especially in the context of MMORPGs, where creating a character that reflects one's ideal self can increase engagement and gaming addiction. This study concludes that character design and displayed emotions have a significant impact on players' experience and engagement in games.

1. Introduction

In the digital era, online responses to broadcast media have become an essential element of audience interaction. However, despite the significant role they play, the timing aspect of audience online responses has not been widely studied (Beaunoyer & Guitton, 2024). One important factor supporting player engagement is the emotion displayed by characters. Characters capable of expressing various emotions can add depth to the story and make players feel more connected to the game's plot. Although digital games offer various design elements that can influence player emotions, systematic research on specific game design features that can trigger emotions is still limited (Plass, et al., 2020).

According to Bosse and Zwanenburg (2013), their research on the impact of player emotions towards Anna (a virtual opponent designed to resemble a human with emotions and expressions) demonstrated that emotions in characters can enhance players' perception of engagement. In that study, Anna, who displayed emotions of hope and fear, influenced players' enthusiasm for the game. Other research also shows that emotional identification, narrative impact, and emotional responses to character states play important roles in shaping the player experience (Andreean, et al., 2023). Their findings show that when characters express joy, 40% of players reported feeling inspired and happy. Furthermore, Tinwell et al. (2011) explain that in virtual characters, a lack of character expression when speaking exacerbates discomfort by hindering effective communication of felt emotions. Therefore, to enhance the player experience, game designers should consider the emotional impact of game characters when designing games (Andrean, et al., 2023).

Another important factor that can support player engagement is character design, which includes body shape, identity, race, and other aspects. Even in films, costumes are often used intentionally for narrative purposes, either to reveal or conceal elements related to the storyline, functioning as a key element in cinematic storytelling. Costume design becomes an important part of character formation (Kalmakurki, 2018). If applied in games, character design becomes an equally important aspect, as it can make the game feel more lifelike and create an impression of interaction with the player. Players who play video games with personalized game characters experience more emotional stimulation and may develop greater addiction than when playing with impersonal or default characters (Fischer, 2010; Mancini, 2019). However, certain considerations are necessary when entering the field of education. Character design in educational games with a moderately cartoonish style is more effective in enhancing positive emotional experiences than character designs that are slightly realistic

© 2025 The Authors
This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

or overly exaggerated (Segaran, et al., 2021). This can serve as further consideration for game designers to pay attention to their intended audience.

In addition, paying attention to character design in games can also benefit cultural preservation efforts. In the research of Yingfang, et al., (2020), a somatic-based computer game was developed that focused on 3D character design and demonstrating Lu-style Xinyi Quan movements. This approach includes exploring artistic styles, model design, and 3D model creation for the purpose of preserving cultural heritage digitally. This shows that character design in games can also be connected to cultural preservation. In this modern age, various media are needed to engage younger generations in cultural preservation efforts, one of which is incorporating cultural elements into game character design.

This study aims to answer several questions regarding emotions and character design in games. These questions include the types of character emotions in games, how they can affect players, the importance of character emotions in games, and the kinds of character design that can support player emotions.

2. Method

The approach applied in this research is the Systematic Literature Review (SLR). A literature review is an effective method for synthesizing research findings to provide evidence at a meta-level and to identify areas requiring further study, which are crucial elements in developing theoretical frameworks and creating conceptual models (Snyder, 2019). This literature review aims to verify, explain, and address the following research questions:

a. The types of character emotions in games.

b. How important are character emotions in games?

c. What types of character design can evoke emotions in games?

In conducting the literature review, the authors filtered sources from the Publish or Perish (PoP) database, resulting in publications from eight publishers: Springer, Wiley Online Library, Sage Publishing, IEEE Publishing, Science Direct, Emerald, and IOP Publishing. Articles from the past 10 years (2014–2024) were selected using keywords such as "character design" OR "emotional" OR "emotional character" OR "emotional design" AND game.

3. Results and Discussion

The initial search yielded a total of 101 articles. From these, articles were filtered based on the type of source (only articles were included, excluding books, websites, papers, etc.). Based on this criterion, 60 articles did not meet the requirements. The remaining 41 articles were further screened based on titles relevant to the research topic, resulting in 41 articles deemed relevant. These 41 articles were then filtered again based on their abstracts, yielding a total of 24 articles that met the criteria. Finally, the author reviewed the full content of each article, resulting in a final selection of 15 articles that met all criteria.

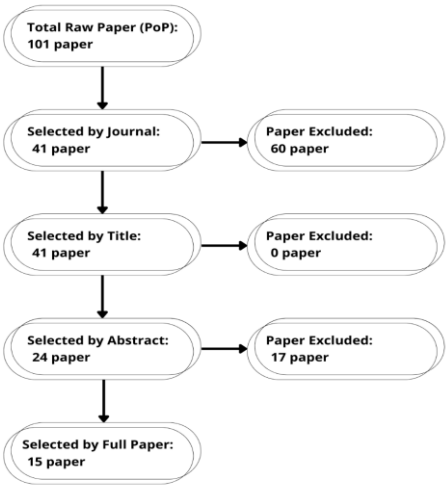

Figure 1. PRISMA table

In this study, the researcher used the PRISMA table concept, and the results are shown in Figure 1. Additionally, several criteria were established for the paper selection process, as detailed in Table 1

Table 1. Inclusion and Exclusion Criteria

Inclusion	Exclusion
Source from article	Book, paper, thesis, website
Study focus on character emotion in game	Study focus on human character emotion
Publisher are from Springer, Wiley Online Library, Sage Publishing, IEEE Publishing, Science Direct, Emerald, dan IOP Publishing	Publisher are not from Springer, Wiley Online Library, Sage Publishing, IEEE Publishing, Science Direct, Emerald, dan IOP Publishing
International article	National article

In the inclusion column, the author only included sources in the form of articles, excluding books, papers, theses, or websites, to simplify the search process. The study focused solely on character emotions in games, not on human emotions. During the search, many studies appeared that focused on human character emotions; therefore, Table 1 was made more specific. The articles included by the author were from publishers such as Springer, Wiley Online Library, Sage Publishing, IEEE Publishing, Science Direct, Emerald, and IOP Publishing. Articles from other publishers were not included. The author also restricted the search to international sources to maximize the number of relevant results.

It is also essential to note that, as shown in Figure 1, the results represent the initial search using keywords "character design" OR "emotional" OR "emotional character" OR "emotional design" AND game, yielding a total of 15 fully-reviewed articles. Subsequently, the author conducted an additional search using separate keywords and added SLR OR “systematic literature review" as keywords, yielding the following results.

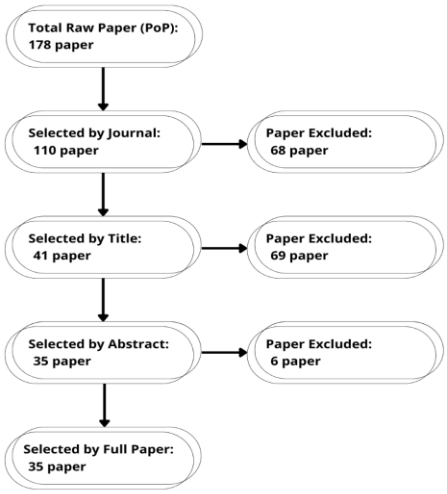

Figure 2 Adding Research

With a total of 50 articles found using the keywords "character design" OR "emotional" OR "emotional character" OR "emotional design" AND game AND SLR OR “systematic literature review”, the following sections provide a discussion of each research question.

3.1. RQ1. Types of Character Emotions in Games

The emotions of hope and fear displayed by game characters (avatars) have a positive impact on players' enthusiasm for chess games, making players more engaged and immersed in the game's atmosphere (Bosse & Zwanenburg, 2013). Additionally, characters that display joy can inspire and uplift players (Andreean, et al., 2023).

Certain types of character emotions have been shown to increase player enthusiasm. Even when characters display simple emotions like happiness, these emotions can draw players further into the game. Furthermore, this can make players feel as though they are interacting with a real character, rather than a pre-programmed system without emotions, making the game feel more alive. Often, what causes players to lose interest in solo games is the lack of interaction with in-game characters, especially if those characters fail to show a variety of emotions.

3.2. RQ2. How Important are Character Emotions in Games?

Andreean et al. (2023) found that 75% of 100 participants believed character emotions in games significantly influenced their feelings and mood. The researchers added that when a game character showed joy, 40% of players reported feeling inspired and happy. On the other hand, 10% of players felt annoyed or angry, which was influenced by the negative emotions of game characters. Furthermore, well-crafted game characters can continue to be remembered and discussed by fans even after they die in the game, leaving a lasting impact (Beaunoyer & Guitton, 2024).

These findings suggest that character emotions play an essential role in building player empathy. As previously noted, even after a character's death, they can remain vivid and engaging for fans, due to a strong emotional connection that was established between the character and the fan.

3.3. RQ3. What Character Designs Can Build Emotion in Games?

Character design can affect players' emotions. For example, research by Segaran et al. (2021) titled "Does Avatar Design in Educational Games Promote a Positive Emotional Experience Among Learners?" found that moderately cartoon-styled characters are more effective in enhancing positive emotional experiences in educational games compared to slightly realistic or exaggerated designs. In addition, certain visual attributes of character design can trigger emotions in players, supporting the learning process or enhancing high emotional stimulation to aid in developing cognitive skills (Plass et al., 2020).

However, character personalization can also influence players' emotions. The negative impact of playing violent video games on aggressive behavior may be heightened when players create their own characters, as opposed to using existing or default characters (Fischer et al., 2010). In MMORPGs, when players create avatars that reflect their ideal self, they are more likely to identify with these avatars, become deeply involved, and potentially experience addiction to the game (Mancini et al., 2019).

In game development, selecting an appropriate character design is crucial depending on the type of game being created. For educational games, simpler and cuter designs are often more appealing and motivating than complex, realistic designs.

4. Conclusion

In the digital era, audience responses to broadcast media have become highly significant, though the timing aspect of these responses remains underexplored. Emotions displayed by characters in games play a crucial role in enhancing player engagement and deepening the storyline. Although design elements that can affect player emotions exist, research on specific features that trigger these emotions is still limited. Findings show that characters displaying positive emotions, such as joy, can inspire players, while negative emotions can diminish their gaming experience. Well-designed characters, including personalization elements, can enhance players' emotional experience, yet pose risks in violent game contexts. In MMORPGs, creating characters that reflect players' ideal selves can strengthen their connection to and interest in the game. Therefore, character design and displayed emotions have a substantial impact on player experience and engagement in games. This study hopes to encourage game designers to pay closer attention to character design and emotion to enhance the player experience.

Author Contributions

All authors have equal contributions to the paper. All the authors have read and approved the final manuscript.

Funding

No funding support was received.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

Anderson, K. A. (2022). Moral distress in The Last of Us: Moral agency, character realism, and navigating fixed gaming narratives. *Computers in Human Behavior Reports*, *5*, 100163. https://doi.org/10.1016/j.chbr.2022.1001633

Andreean, A. F. F., Anugrah, M. F., & Tho, C. (2023). Exploring of emotional character in online games toward player. *Procedia Computer Science*, 227, 743–752. https://doi.org/10.1016/j.procs.2023.10.579

Beaunoyer, E., & Guitton, M. J. (2024). Temporality of online reactions to fictional characters' death. *Entertainment Computing*, 52, 100813. https://doi.org/10.1016/j.entcom.2023.100813

Bosse, T., & Zwanenburg, E. (2013). Do prospect-based emotions enhance believability of game characters? A case study in the context of a dice game. *IEEE Transactions on Affective Computing*, 5(1), 17–31. https://doi.org/10.1109/T-AFFC.2013.27

Chen, C. Y., & Zhuang, X. Q. (2023). The image ratios for designing cute nonhuman anthropomorphic characters. *Entertainment Computing*, 47, 100586. https://doi.org/10.1016/j.entcom.2023.100586

Fischer, P., Kastenmüller, A., & Greitemeyer, T. (2010). Media violence and the self: The impact of personalized gaming characters in aggressive video games on aggressive behavior. *Journal of Experimental Social Psychology*, 46(1), 192–195. https://doi.org/10.1016/j.jesp.2009.06.010

Hein, K., Burleigh, T. L., Gorman, A., Prokofieva, M., & Stavropoulos, V. (2024). Proteus effect avatar profiles: Associations with disordered gaming and activity levels. *Addictive Behaviors Reports*, 20, 100562. https://doi.org/10.1016/j.abrep.2023.100562

Heritage, F. (2022). Magical women: Representations of female characters in The Witcher video game series. Discourse, Context & Media*, 49,* 100627. https://doi.org/10.1016/j.dcm.2022.100627

Islam, M. T., Nahiduzzaman, K. M., Why, Y. P., & Ashraf, G. (2010, October). Learning character design from experts and laymen. In *2010 International Conference on Cyberworlds* (pp. 134–141). IEEE. https://doi.org/10.1109/CW.2010.66

Kalmakurki, M. (2018). Snow White and the Seven Dwarfs, Cinderella and Sleeping Beauty: The components of costume design in Disney's early hand-drawn animated feature films. *Animation*, 13(1), 7–19. https://doi.org/10.1177/1746847718759829

Kaplan, K., Grant, J., Güçlü, K., Ünal, Ç., & Yakupoğlu, E. (2014). An example for 3D animated character design process: The Lost City Antioch. *Procedia - Social and Behavioral Sciences*, 122, 65–71. https://doi.org/10.1016/j.sbspro.2014.01.1292

Koskinen, A., McMullen, J., Ninaus, M., & Kiili, K. (2023). Does the emotional design of scaffolds enhance learning and motivational outcomes in game-based learning?. *Journal of Computer Assisted Learning*, 39(1), 77–93. https://doi.org/10.1111/jcal.12674

Li, E. C., Liang, Y. W., Lu, H. N., & Chen, J. Y. (2019). The effect of character design on character identification for mobile games. In Proceedings of the 20th Congress of the International Ergonomics Association (IEA 2018) Volume VII: Ergonomics in Design, Design for All, Activity Theories for Work Analysis and Design, Affective Design 20 (pp. 97–106). *Springer International Publishing.* https://doi.org/10.1007/978-3-319-96071-5_10

Li, J., & Liu, Q. (2024). Application of generative artificial intelligence AIGC technology under neural network algorithm in game character art design. *Journal of the Knowledge Economy*, 1–32. https://doi.org/10.1007/s13132-024-01624-5

Mancini, T., Imperato, C., & Sibilla, F. (2019). Does avatar's character and emotional bond expose to gaming addiction? Two studies on virtual self-discrepancy, avatar identification and gaming addiction in massively multiplayer online role-playing game players. *Computers in Human Behavior*, *92*, 297–305. https://doi.org/10.1016/j.chb.2018.11.003

Martins, N., Williams, D. C., Ratan, R. A., & Harrison, K. (2011). Virtual muscularity: A content analysis of male video game characters. *Body Image*, *8*(1), 43–51. https://doi.org/10.1016/j.bodyim.2010.10.002

Nakashima, F., Fujimoto, N., & Yamanishi, R. (2023). Do appearances represent personality of created characters. *Procedia Computer Science, 225,* 1776–1785. https://doi.org/10.1016/j.procs.2023.01.198

Plass, J. L., Homer, B. D., MacNamara, A., Ober, T., Rose, M. C., Pawar, S., & Olsen, A. (2020). Emotional design for digital games for learning: The effect of expression, color, shape, and dimensionality on the affective quality of game characters. *Learning and Instruction, 70*, 101194. https://doi.org/10.1016/j.learninstruc.2019.101194

Segaran, K., Mohamad Ali, A. Z., & Hoe, T. W. (2021). Does avatar design in educational games promote a positive emotional experience among learners? *E-Learning and Digital Media*, *18*(5), 422–440. https://doi.org/10.1177/2042753021994337

Şengün, S., Mawhorter, P., Bowie-Wilson, J., Audeh, Y., Kwak, H., & Harrell, D. F. (2022). Contours of virtual enfreakment in fighting game characters. *Technological Forecasting and Social Change*, *180,* 121707. https://doi.org/10.1016/j.techfore.2022.121707

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104,* 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Suan, S. (2017). Anime's performativity: Diversity through conventionality in a global media-form. *Animation*, *12*(1), 62–79. https://doi.org/10.1177/1746847717691013

Teng, C. I., Huang, T. L., Huang, G. L., Wu, C. N., Cheng, T. C. E., & Liao, G. Y. (2024). Creatability, achievability, and immersibility: New game design elements that increase online game usage. *International Journal of Information Management*, *75,* 102732. https://doi.org/10.1016/j.ijinfomgt.2023.102732

Tinwell, A., Grimshaw, M., Nabi, D. A., & Williams, A. (2011). Facial expression of emotion and perception of the Uncanny Valley in virtual characters. *Computers in Human Behavior*, *27*(2), 741–749. https://doi.org/10.1016/j.chb.2010.10.018

Vara, M. D., Baños, R. M., Rasal, P., Rodríguez, A., Rey, B., Wrzesien, M., & Alcañiz, M. (2016). A game for emotional regulation in adolescents: The (body) interface device matters. *Computers in Human Behavior, 57,* 267–273. https://doi.org/10.1016/j.chb.2015.12.047

Wu, H., Wen, S. J., & Yang, J. H. (2022). Multimedia character modeling design and modeling of cartoon animation based on Bayesian sequence recommendation algorithm. *Computational Intelligence and Neuroscience*, 2022, 9205227. https://doi.org/10.1155/2022/9205227

Yingfang, Z., Ding, Q., & Shen, D. (2020). Character design of somatic game from perspective of intangible heritage digital protection. *In Journal of Physics: Conference Series* (Vol. 1584, No. 1, p. 012053). IOP Publishing. https://doi.org/10.1088/1742-6596/1584/1/012053