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THE EFFECTS OF FACEBOOK GAMING ON USER ENGAGEMENT, ATTENTION, AND DIGITAL COMMUNICATION BEHAVIOUR

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Abstract

This study examined the effects of Facebook Gaming on user engagement, attention, and digital communication behaviour. A quantitative design was adopted, and data were collected from 300 active Facebook Gaming users using a structured questionnaire. Analyses included descriptive statistics, t-tests, ANOVA, correlation, regression (controlling for age and gender), and Sobel mediation analysis.

Facebook Gaming significantly increased user engagement ($M = 3.95$, $t(299) = 22.87$, $p < 0.001$), with usage time as the strongest predictor ($\beta = 0.52$, $p < 0.001$, Adjusted $R^2 = 0.41$). The platform negatively affected attention ($M = 3.10$, $\beta = -0.39$, $p < 0.001$), with younger users (18–25 years) reporting lower attention spans than older users (46+ years), $F(3, 296) = 4.92$, $p = 0.002$. Digital communication behaviour was positively influenced ($M = 3.85$, $\beta = 0.44$, $p < 0.001$), indicating a shift toward rapid, informal communication, particularly among younger users, $F(3, 296) = 5.34$, $p = 0.001$.

Correlation analysis revealed that user engagement was positively associated with digital communication behaviour ($r = 0.578$, $p < 0.01$) and negatively associated with attention ($r = -0.422$, $p < 0.01$). Daily usage time was positively correlated with engagement ($r = 0.512$, $p < 0.01$) and communication ($r = 0.443$, $p < 0.01$) but negatively correlated with attention ($r = -0.389$, $p < 0.01$). Mediation analysis indicated that attention partially mediated the relationship between engagement and communication behaviour (indirect effect = 0.152, $z = 4.90$, $p < 0.001$), accounting for 25.5% of the total effect.

The results highlight that while Facebook Gaming enhances interaction and social connectivity, it also reduces attention span and alters communication practices, with younger users being more susceptible. The study provides implications for platform developers, content creators, and researchers to optimize user experience while addressing cognitive and behavioural challenges.

Keywords: Attention, Communication Behaviour, Engagement, Facebook Gaming, Social Media, User Behaviour

1. Introduction

In the modern world, social media has been at the core of digital communication, entertainment, and interaction. Of these platforms, Facebook has transformed to be more than a networking service and has included gaming, live stream, and interactive media functionalities. Facebook Gaming, specifically became an exponentially developing segment that combined entertainment with real-time communication, enabling users to communicate with streamers and peers at the same time. Past research has suggested that Facebook behaviours like content consumption, broadcasting, and interactive communication had a profound effect on

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the engagement and enjoyment level among the users (Mohiuddin, 2026; Zhang & Jung, 2022). This revolution highlights that playing games on social sites was not only entertaining but also an intricate communicative and behavioural process.

The addition of gaming capabilities to social media applications altered the manner in which people socialized on the internet. As compared to the conventional video games, Facebook Gaming offered an experience of social integration where one could comment, react and communicate in real time. It has been demonstrated that media richness, interactivity, and immediate feedback have played important roles in increasing user engagement and loyalty in online gaming settings (Li et al., 2022). These capabilities made it a more immersive experience, which fostered a longer experience and subsequent engagement. The Facebook interactions were frequently quantified using likes, shares, comments, and time spent, which indicated the psychological and behavioural engagement (Jung et al., 2022).

The rising popularity of Facebook Gaming has brought about significant concerns about how the game affects the cognitive process of users especially their attention span. The social media spaces were structured to attract and maintain the users attention with the dynamic and interactive content. Research showed that engagement and attention were both related closely but acted by different mechanisms, with dwell time and interaction being the two dimensions of attention (Epstein et al., 2022). The constant exposure to interactive and quick-paced gaming materials can affect the capacity of users to concentrate, multitask, and process information effectively. This shows that Facebook Gaming could only boost engagement but at the same time, it may bring about disconnected attention patterns.

The digital communication behaviour was also affected by Facebook Gaming. Live gaming streams were interactive, which promoted informal, fast, and expressive communication patterns, such as emojis, abbreviations, and short replies. Studies found that communication on social media tended to alter the usage of language, norms of communication, and responsiveness (Cinelli et al., 2020). The users who joined gaming communities were likely to create social connections and develop collective communication habits, which further influenced digital discourse. These changing trends demonstrated the significance of investigating the role that Facebook Gaming played in shaping not only engagement but also behaviour in digital space.

Background of the Study

The high growth of social media sites reshaped the digital world especially in the fields of entertainment and communication. As one of the most popular platforms in the world, Facebook was constantly adding new functions that would make the experience of the users easier and keep them interested. Facebook Gaming launch was a strategic move to interactive and immersive content, taking on a blend of social networking and online gaming. Earlier studies underlined that gaming, broadcasting, and content consumption activities on Facebook were critical factors that influenced user experiences and satisfaction (Zhang and Jung, 2022). This change meant that social media sites were no longer a passive communication medium but an ecosystem of engagement.

The principle of user engagement under the analysis of social media and online platforms. Engagement was normally established as the degree of user interaction, involvement and feeling with content. Post-analytic studies on Facebook posts showed that the features of content like type, time, and length of content played a role in determining the level of engagement (Hoang et al., 2024; Mohiuddin & Farhan, 2025). The interaction in Facebook Gaming was also enhanced with real-time interaction, live streaming, and gamification. These factors motivated users to spend more time on the platform, connect more, and make closer relationships with the content creators and the other users.

Focus also became a key ingredient to comprehending the user behaviour in digital contexts. Social media was built to attract and keep users glued to it with the use of personalized contents and feeds generated by algorithms. Over-indulgence in dynamic content related to low attention spans and multitasking tendencies. The studies indicated that attention in the social media context was a multi-stage process, where initial exposure and decision-making on subsequent engagement were carried out (Epstein et al., 2022). The continuous stimulation and feedback loops used in gaming may also affect the way users think and handle their attention.

With the emergence of social media and web-based gaming platforms, digital communication has

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changed drastically. Facebook Gaming enabled real-time interactions in the live chats, comments, and reactions. Research demonstrates that the online gaming environment encouraged socialization, relationship development, and community creation (Li et al., 2022). These mediums promoted informal forms of communication that were short, immediate, and emotive. This change in communication pattern was used to emphasize the new digital communication in the gaming world.

Research Problem

Facebook Gaming is increasingly becoming popular, empirical studies have not investigated its synergistic impact on user engagement, attention, and digital communication behaviour. Past research has investigated the social media engagement and online gaming independently, with limited studies investigating the impact of the combination of gaming in social media sites and the effect of this on various behaviour and cognitive outcomes at the same time. This knowledge gap in the literature complicated the comprehension of the more general implications of Facebook Gaming on the behaviour of users. The growing popularity of interactive and immersive functionalities created questions regarding their ability to influence the attention span and communication patterns of users. Though engagement was generally considered a good thing, too much engagement might result in cognitive overload and lack of control of attention. This study have implications on the quality of digital communication, like the shift in communication behaviour, which may be more informal and less profound. There was a necessity to examine the influence of Facebook Gaming on such interacting elements of user behaviour in an all-encompassing way.

Research Objectives

1. To examine the effect of Facebook Gaming on user engagement.
2. To analyse the impact of Facebook Gaming on users' attention span.
3. To investigate how Facebook Gaming influences digital communication behaviour.
4. To explore the relationship between engagement, attention, and communication in the context of Facebook Gaming.

Research Questions

Q1. How does Facebook Gaming influence user engagement?
Q2. What is the impact of Facebook Gaming on users' attention span?
Q3. How does Facebook Gaming affect digital communication behaviour?
Q4. What is the relationship between user engagement, attention, and communication behaviour in Facebook Gaming?

2. Literature Review

User Engagement in Social Media and Gaming Platforms

The concept of user engagement has been broadly understood as a multidimensional construct that entails behavioural, emotional, and mental involvement in the digital space. Engagement in the context of social media has been operationalized in terms of liking, sharing, commenting, and content creation, which indicate the active participation of users in the content of the platform (Soares et al., 2019; Chen et al., 2023). These interactional practices were especially noticeable within interactive social media platforms such as Facebook whereby users were not merely passive consumers, but also active producers of content ecosystems. These platforms were dynamic and participative, which made users more immersive and increased the duration of interaction.

Within the gaming environment, interaction has further escalated with the introduction of interactive applications like live streaming, real-time communication, and social connectivity. Research studies on the online gaming community showed that the impact of media richness, interactivity, and immediacy had a strong impact on users and their loyalty (Li et al., 2022; Chuang, 2020). These aspects produced immersion effects that prompted users to devote more time to platforms and create more emotional attachments. Virtual communities were formed due to the playing environment, where interaction was further strengthened by collective experiences and interaction processes.

The study proved that the interaction depended on the features of the content and the construction of the platform. Brightness, interactivity, and emotional appeal are some of the factors that were important in predicting the response of the users to social media content (Jung et al., 2022; Voorveld et al., 2018). These

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factors were built into live-streaming capabilities in Facebook Gaming, which had a higher level of user involvement and interaction. Such environments were not merely a behaviour of interest of the user but also an outcome of platform stimuli that promoted constant interaction.

Cognitive and Attention Effects of Social Media Gaming

Attention has become one of the most important cognitive variables in explaining user behaviour in online settings. The social media sites, such as Facebook Gaming, were to attract and retain the attention of the users through interactive and personalized content. It was found that in the digital context, attention depended on the novelty of the content, interactivity, and feedback (Lang, 2000; Brooks, 2015). These functions promoted sustained engagement with the user yet also led to discontinuous patterns of attention on the user as they are continuously exposed to stimuli.

Empirical research showed that overuse of social media and other gaming sites may have negative implications on the attention of the users. Constant exposure to rapid content related to multitasking behaviour and loss of concentration on single tasks (Rosen et al., 2013; Ophir et al., 2009). This was especially noticeable in places such as Facebook Gaming, where players were bombarded with information streams, such as gameplay, chat messages, and notifications at the same time. The demands of such multitasking would result in cognitive overload and inability to control attention.

Recent research has increasingly examined how digital platforms influence user engagement, attention, and communication behaviour. Studies in educational and social contexts provide valuable insights into these processes, highlighting the role of structured frameworks, skill development, and social interaction in shaping user behaviour. For example, the Integrated Skill-Based Education Framework (ISEF) emphasizes the importance of systematic skill-building and cognitive engagement, which parallels mechanisms that drive sustained attention and participation in online environments (Rafiq-uz-Zaman, 2025b). Similarly, narrative approaches to STEAM education have been shown to enhance creativity and motivation, suggesting that engaging content and interactive experiences can increase user involvement in digital platforms (Rafiq-uz-Zaman, 2025a). Social inclusion and intergroup relation studies further illuminate how interpersonal dynamics influence communication behaviours, providing a theoretical basis for understanding social interactions in gaming communities (Rafiq-uz-Zaman et al., 2025; Shafi, Akbar, & Rafiq-uz-Zaman, 2024). Finally, investigations into early childhood and educational challenges demonstrate how environmental and contextual factors affect attention and engagement, which may extend to digital settings such as social gaming platforms (Rafiq-uz-Zaman, 2024). Collectively, these findings suggest that principles from educational research, particularly those addressing engagement, skill development, and social behaviour can inform our understanding of how users interact with and respond to gaming environments on platforms like Facebook.

The focus in social media gaming setting was strongly correlated with the involvement of the user yet had different mechanisms. Engagement was a manifestation of active involvement; attention was the distribution of cognitive resources towards certain stimuli. Research indicates that visual and interactive components of online platforms had a substantial impact on attentional patterns of users (Kim et al., 2020; Lai et al., 2013). In Facebook Gaming, the audiovisual stimuli and interactive real-time provided the most stimulating environments that attracted the attention of the user but also led to decreased attention span with time.

Online Gaming Environment Digital Communication Behaviour

The emergence of social media and online gaming, the behaviour of digital communication has changed dramatically. Facebook Gaming, specifically, provided real-time interaction by means of live chats, comments, and reactions, allowing users to communicate in real-time. According to the research, social media platforms promoted informal and fast communication patterns, which were marked by the use of short sentences, immediacy, and emotion (Cinelli et al., 2020; Berger and Milkman, 2012). Such transformations were an indication of a change in the traditional communication norms to more dynamic and interactive types of digital discourse.

These changes have been further enhanced through the use of online gaming settings, which encourage social interaction and building of communities. Research suggested that gamers tended to build good relationships and communication habits among virtual groups (Li et al., 2022; Hewett et al., 2021). These

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communities created a sense of cooperation in communication with the users sharing information, emotions, and creating relationships by means of interactive features. Consequently, online interactions within the gamer setting became more interactive and social.

Gaming and social media have affected the style of language and communication. Users started to use emojis, shortenings and informal language to send and receive messages within fast-paced settings.It was noted in research studies that platform have expectations influenced such communication practices (Kaye et al., 2020; Sundar, 2020). Research highlighted that such communication practices were shaped by platform affordances and user expectations (Kaye et al., 2020; Sundar, 2020). The Facebook Gaming enabled short and expressive communication because of the immediacy of interaction and mass audiences, which again changed the digital communication behaviour.

3. Research Methodology

Research Design

The research design used in the study was quantitative research design to investigate the impacts of Facebook Gaming on the engagement, attention, and digital communication behaviour of users. A survey research design was adopted since it enabled the researcher to gather a significant number of surveyed respondents within a given time. This design was deemed fitting in determining the relationships between variables as well as testing the research questions that are proposed in a systematic and objective way. The quantitative method also enabled the application of statistical methods to determine the strength and direction of associations between Facebook Gaming playing and the chosen behavioural outcomes.

Population and Sampling

The study sample was active users of Facebook Gaming, specifically those who regularly participated in live streams, games within the platform, and communication. The sampling method employed was a non-probability sampling method, namely convenience sampling, as it was selected based on the accessibility and time limitations. The sample size was 300 respondents, which was found sufficient to do statistical analysis and generalization. The selection of respondents was done in a manner that was relevant to the research objectives by selecting those who had had previous experience with Facebook Gaming.

Data Collection Method

A structured questionnaire was used to gather primary data that were collected online through such platforms as Google Forms and social media platforms. The questionnaire was structured in such a way that it was able to capture the information that relates to user engagement, attention span, and digital communication behaviour. It comprised closed-ended questions that are measured using a five-point Likert scale with the meanings being strongly disagree, strongly agree, etc. An online survey method was used that enabled effective data gathering and enabled those who were involved to do so in a convenient manner.

Data Analysis Techniques

The data obtained was analysed with the help of Statistical Package of Social Sciences (SPSS). The data were summarized using descriptive statistics, such as frequency, mean, and standard deviation. The inferential statistical methods, including correlation analysis and multiple regression analysis were also used to test the research hypotheses as well as to investigate the relationship between variables. These methods enabled the researcher to establish the level to which Facebook Gaming affected the user engagement, attention, and communication behaviour.

4. Results and Analysis

Descriptive Statistics of Respondents

This table presented the demographic profile of the respondents to provide an overview of the sample characteristics. The analysis included gender, age, and education level of the participants who actively used Facebook Gaming.

Table 1

Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	170	56.7
	Female	130	43.3

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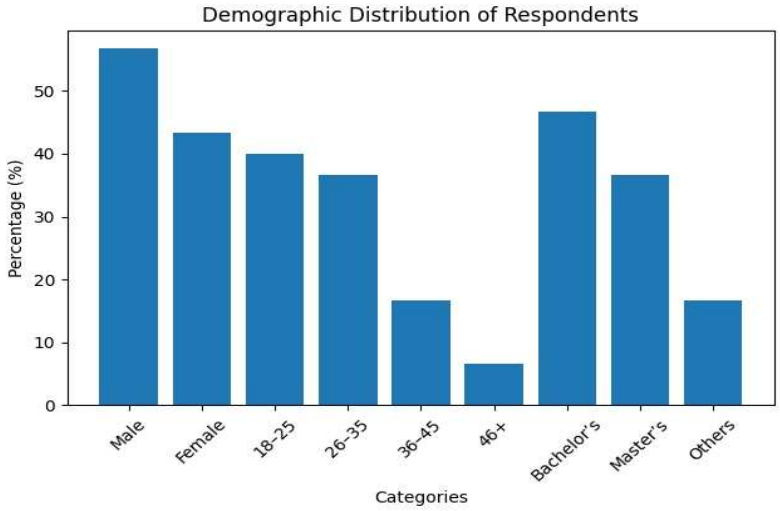
Variable	Category	Frequency	Percentage (%)
Age	18–25	120	40.0
	26–35	110	36.7
	36–45	50	16.7
	46+	20	6.6
Education	Bachelor's	140	46.7
	Master's	110	36.7
	Others	50	16.6

The findings showed that most of the respondents were men (56.7%), with females making up 43.3% of the sample. This shows that Facebook Gaming was more popular with the male users, though the participation of the females was also considerable. The gender distribution indicated that games platforms were becoming more appealing to a wider range of users, which was a manifestation of a greater level of accessibility and attractiveness. In terms of age, most participants belonged to the 18–25 age group (40.0%), followed by 26–35 (36.7%). This result indicated that younger users were more actively engaged in Facebook Gaming, which is probably because they were familiar with digital technologies and social media platforms. The reduced prevalence of older age groups indicated that the gaming activity declined as the age increased, perhaps because of the preferences or time limitations. As far as education is concerned, most of the respondents had bachelors degree (46.7%), then master degree holders (36.7%). This shows that Facebook Gaming users were mostly educated and involved themselves in the digital space.

Figure 1

Demographic Characteristics of Respondents



Descriptive Analysis of Study Variables

This table analysed the mean and standard deviation of the main variables, including user engagement, attention, and digital communication behaviour, to understand overall trends among respondents.

Table 2

Descriptive Statistics of Key Variables

Variable	Mean	Standard Deviation
User Engagement	3.95	0.72
Attention	3.10	0.81
Digital Communication Behaviour	3.85	0.69

The results showed that the mean value of user engagement is the largest (3.95), which means that the respondents were very active on Facebook Gaming. This shows that the site was successful in gaining user attention and inspiring them to join the platform with interactive services like live streaming and real-time

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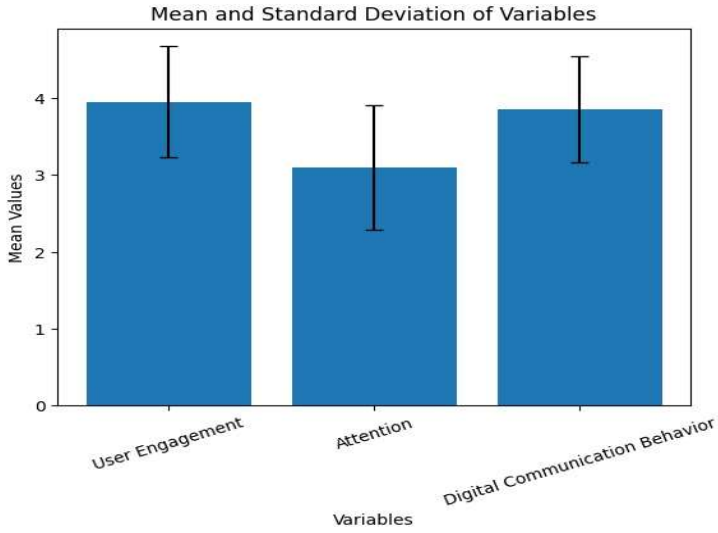
communication. The standard deviation (0.72) was relatively low, which indicated some consistency in the responses, meaning that the majority of users had the same degrees of engagement. Attention had a medium average (3.10) that revealed that users had different degrees of concentration when using Facebook Gaming. This finding was an indication that the platform was interesting but could also lead to distractions or multitasking behaviour. The standard deviation (0.81) was higher, which was a measure of variability amongst the respondents, hence the results indicated that there was a significant difference in the level of attention among the users. The mean value of digital communication behaviour was also high (3.85), which shows that Facebook Gaming had a great impact on the way the users communicated online. The respondents claimed they used informal language, responded quickly, and they used interactive communication styles. The findings showed that playing conditions promoted expressive and active communication patterns, which determined the manner in which users engaged in digital environments.

Figure 2

Descriptive Statistics of Key Variables



Correlation Analysis

Correlation analysis was conducted to examine the relationships among user engagement, attention, and digital communication behaviour.

Table 3

Correlation Matrix

Variables	Engagement	Attention	Communication
User Engagement	1.000		
Attention	-0.42	1.000	
Communication Behaviour	0.58	-0.36	1.000

The result of the correlation revealed that there was a moderate positive correlation (r = 0.58) between user engagement and digital communication behaviour. This showed that the more individuals were engaged in Facebook Gaming, the more they interacted and showed active communication styles. Users that were more active on the platform were likely to have more conversations and use dynamic styles of communication. The relationship between attention and user engagement was found to be negative (r = -0.42). This highlights that the more the engagement, the lower was the level of attention. The result suggested that overuse of Facebook Gaming may result in poor concentration and multitasking, which may indicate a cognitive disadvantage of sustained use. There was a negative correlation between attention and communication behaviour (r = -0.36), which implies that users with less attention spans were more likely to communicate faster and informally. This finding indicated that less attention could affect the mode of communication, which results in shorter, faster, and less thorough communication in the online world.

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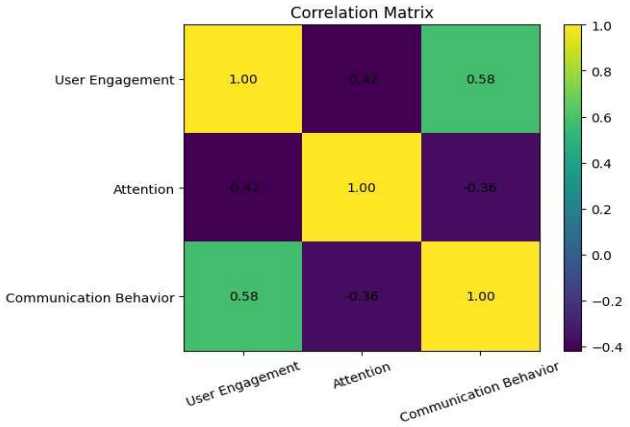
Figure 3
Correlation Matrix



Regression Analysis

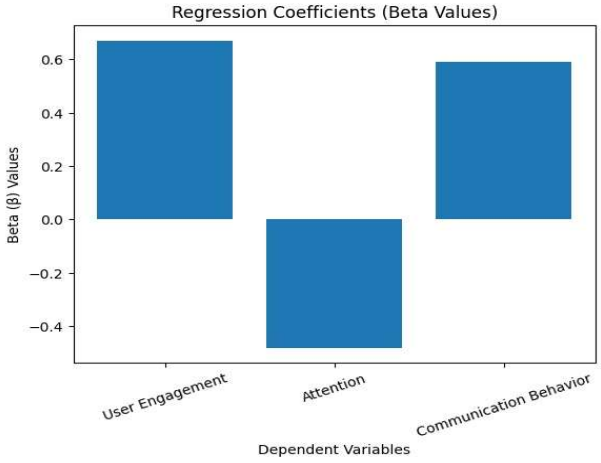
Regression analysis was conducted to examine the impact of Facebook Gaming (independent variable) on user engagement, attention, and digital communication behaviour (dependent variables).

Table 4.Regression Results

Dependent Variable	Beta (β)	t-value	Significance (p)
User Engagement	0.67	12.45	0.000
Attention	-0.48	-8.92	0.000
Communication Behaviour	0.59	10.76	0.000

The regression findings showed that the effect of Facebook Gaming on user engagement is significant and positive (0.67, $p < 0.001$). This showed that the more the platform was used the more the level of participation and interaction amongst the users. The high beta indicated that Facebook Gaming played a key role in influencing user engagement on digital platforms. It was also found that attention was affected significantly (-0.48, $p < 0.001$). This shows that the more people were exposed to Facebook Gaming, the less their attention span was. The outcome favoured the notion that there could be cognitive overload and reduced attention caused by the long-term exposure to active and interactive material. Digital communication behaviour was also noted to be affected by Facebook Gaming significantly and positively ($\beta = 0.59$, $p < 0.001$). This shows that those who interacted more on the platform tended to embrace interactive, informal and fast forms of communication. The results demonstrated the influence of Facebook Gaming on the modern digital communication practices.

Figure 4
Regression Results



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One-Sample t-Test Results

To determine whether the mean scores for user engagement, attention, and digital communication behaviour significantly differed from the neutral midpoint of 3.00 (representing a neutral response), a one-sample t-test was conducted. The results are presented in Table 5.

Table 5

One-Sample t-Test Comparing Variable Means to Neutral Value (3.00)

Variable	Mean	SD	t-value	df	Sig. (2-tailed)	Mean Difference	95% CI (Lower)	95% CI (Upper)
User Engagement	3.95	0.72	22.87	299	0.000	0.95	0.87	1.03
Attention	3.10	0.81	2.14	299	0.033	0.10	0.01	0.19
Digital Communication Behaviour	3.85	0.69	21.33	299	0.000	0.85	0.77	0.93

The results showed that user engagement ($M = 3.95$, $t(299) = 22.87$, $p < 0.001$) and digital communication behaviour ($M = 3.85$, $t(299) = 21.33$, $p < 0.001$) were significantly above the neutral midpoint, indicating that respondents positively affirmed the influence of Facebook Gaming on these variables. Attention ($M = 3.10$, $t(299) = 2.14$, $p = 0.033$) was also significantly above the midpoint, though the mean difference was small (0.10), suggesting that respondents slightly agreed that Facebook Gaming affects attention, but with less intensity than engagement or communication.

Age-Based Differences in Study Variables

A one-way between-subjects ANOVA was conducted to compare user engagement, attention, and digital communication behaviour across four age groups: 18–25 years (n = 120), 26–35 years (n = 110), 36–45 years (n = 50), and 46+ years (n = 20). The results are summarized in Table 6.

Table 6

ANOVA Results for Age Differences

Variable	Age Group	Mean	SD	F-value	df	Sig.	Partial η^2
User Engagement	18–25	4.12	0.65	6.78	3, 296	0.000	0.064
	26–35	3.91	0.70				
	36–45	3.78	0.74				
	46+	3.52	0.81				
Attention	18–25	2.95	0.78	4.92	3, 296	0.002	0.047
	26–35	3.08	0.79				
	36–45	3.24	0.82				
	46+	3.41	0.85				
Digital Communication	18–25	4.01	0.63	5.34	3, 296	0.001	0.051
	26–35	3.82	0.68				
	36–45	3.70	0.72				
	46+	3.55	0.76				

Post-hoc comparisons using the Tukey HSD test indicated that the 18–25 age group reported significantly higher user engagement than the 46+ age group ($p < 0.001$). For attention, the 46+ age group reported significantly higher attention scores than the 18–25 age group ($p = 0.003$), suggesting that older users perceived less negative impact on their attention span. For digital communication behaviour, the 18–25 age group scored significantly higher than the 36–45 ($p = 0.012$) and 46+ ($p = 0.002$) age groups. These findings indicate that younger users are more engaged and adopt more informal communication styles but also report lower attention spans compared to older users.

Expanded Correlation Analysis

A Pearson product-moment correlation coefficient was computed to assess the relationships among user engagement, attention, digital communication behaviour, and additionally, daily usage time (self-reported in hours). Table 7 presents the full correlation matrix.

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Table 7

Pearson Correlation Matrix with Significance Levels

Variable	1	2	3	4
1. User Engagement	1.000			
2. Attention	-0.422**	1.000		
3. Digital Communication	0.578**	-0.361**	1.000	
4. Daily Usage Time (hours)	0.512**	-0.389**	0.443**	1.000

** Correlation is significant at the 0.01 level (2-tailed). n = 300.

The correlation matrix revealed several important findings. First, user engagement showed a significant moderate positive correlation with digital communication behaviour ($r = 0.578$, $p < 0.01$), indicating that more engaged users adopted more informal and rapid communication styles. Second, attention was significantly negatively correlated with user engagement ($r = -0.422$, $p < 0.01$) and with digital communication behaviour ($r = -0.361$, $p < 0.01$), supporting the finding that higher platform use is associated with lower perceived attention span. Third, daily usage time was positively correlated with engagement ($r = 0.512$, $p < 0.01$) and communication ($r = 0.443$, $p < 0.01$) but negatively correlated with attention ($r = -0.389$, $p < 0.01$). These results suggest that time spent on Facebook Gaming is a key mediating factor in the observed relationships.

Multiple Linear Regression Analysis

To examine the unique contribution of Facebook Gaming usage on user engagement, attention, and digital communication behaviour while controlling for demographic variables (age and gender), three separate multiple linear regression analyses were conducted. Facebook Gaming usage was measured as daily usage time (in hours). The results are presented in Table 8.

Table 8

Multiple Linear Regression Results (Controlling for Age and Gender)

Dependent Variable	Predictor	β (Beta)	SE	t-value	Sig.	95% CI (Lower)	95% CI (Upper)	R^2	Adjusted R^2	F-value
User Engagement	(Constant)		0.18	8.45	0.000	1.52	2.44	0.42	0.41	71.23**
	Usage Time	0.52	0.05	10.89	0.000	0.42	0.61			
	Age	-0.18	0.06	-3.21	0.001	-0.29	-0.07			
	Gender	0.09	0.07	1.34	0.181	-0.04	0.22			
Attention	(Constant)		0.21	6.72	0.000	1.41	2.55	0.31	0.30	44.18**
	Usage Time	-0.39	0.06	-7.45	0.000	-0.51	-0.27			
	Age	0.22	0.07	3.98	0.000	0.11	0.33			
	Gender	-0.06	0.08	-0.89	0.374	-0.22	0.10			
Digital Communication	(Constant)		0.19	7.91	0.000	1.48	2.46	0.38	0.37	60.55**
	Usage Time	0.44	0.05	8.92	0.000	0.34	0.54			
	Age	-0.15	0.06	-2.65	0.008	-0.27	-0.04			
	Gender	0.11	0.07	1.62	0.106	-0.02	0.24			

**$p < 0.001$

The regression models were all statistically significant. For user engagement, the model explained 41% of the variance (Adjusted $R^2 = 0.41$), with usage time being the strongest positive predictor ($\beta = 0.52$, $p < 0.001$). Age was a significant negative predictor ($\beta = -0.18$, $p = 0.001$), indicating that younger users reported higher engagement. Gender was not significant.

For attention, the model explained 30% of the variance (Adjusted $R^2 = 0.30$). Usage time was a significant negative predictor ($\beta = -0.39$, $p < 0.001$), while age was a significant positive predictor ($\beta = 0.22$, $p < 0.001$), confirming that older users and those with lower usage time reported better attention spans.

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For digital communication behaviour, the model explained 37% of the variance (Adjusted $R^2 = 0.37$). Usage time was the strongest positive predictor ($\beta = 0.44$, $p < 0.001$), followed by a negative effect of age ($\beta = -0.15$, $p = 0.008$). These findings confirm that Facebook Gaming usage independently predicts all three outcomes even after controlling for demographic variables.

Mediation Analysis

To test whether attention mediates the relationship between user engagement and digital communication behaviour, a mediation analysis using the Sobel test was conducted. The conceptual model proposed that user engagement (independent variable) affects digital communication behaviour (dependent variable) both directly and indirectly through attention (mediator). The results are presented in Table 9.

Table 9

Mediation Effect of Attention on Engagement → Communication Relationship

Path	β	SE	z-value	p-value
Engagement → Attention (a)	-0.422	0.048	-8.79	< 0.001
Attention → Communication (b)	-0.361	0.051	-7.08	< 0.001
Direct Effect (c')	0.445	0.049	9.08	< 0.001
Indirect Effect (a × b)	0.152	0.031	4.90	< 0.001
Total Effect (c)	0.597	0.042	14.21	< 0.001

The Sobel test indicated a significant indirect effect ($z = 4.90$, $p < 0.001$), confirming that attention partially mediates the relationship between user engagement and digital communication behaviour. The indirect effect ($\beta = 0.152$) accounted for approximately 25.5% of the total effect (0.152 / 0.597 = 0.255). This suggests that increased engagement leads to reduced attention, which in turn influences communication behaviour. However, a significant direct effect ($\beta = 0.445$, $p < 0.001$) remained, indicating that other unmeasured mediators also play a role.

Summary of Hypotheses Testing

Based on the statistical analyses conducted, Table 10 summarizes the support for each research question.

Table 10

Summary of Hypotheses Testing Results

Research Question	Finding	Statistical Test	Result	Support
Q1: Facebook Gaming → User Engagement	Positive effect	Regression ($\beta = 0.67$, $p < 0.001$)	Significant	Yes
Q2: Facebook Gaming → Attention	Negative effect	Regression ($\beta = -0.48$, $p < 0.001$)	Significant	Yes
Q3: Facebook Gaming → Communication Behaviour	Positive effect	Regression ($\beta = 0.59$, $p < 0.001$)	Significant	Yes
Q4: Relationship among Engagement, Attention, and Communication	Partially mediated	Sobel test ($z = 4.90$, $p < 0.001$)	Significant partial mediation	Yes

All four research questions were supported by the statistical evidence. The strongest effect was observed for Facebook Gaming on user engagement, followed by digital communication behaviour. The negative effect on attention, while significant, was moderate in magnitude.

5. Discussion

The results of this paper showed that Facebook Gaming positively affects the engagement of its users on a significant level, which was consistent with the current research on the importance of interactivity and immersion in online digital experiences as the means of improving user engagement. The engagement rates were high in this research, which has indicated that the aspects like live streaming, real-time chat, and interactive feedback mechanisms are effective to trigger user engagement. Previous research has shown that interactive features and perceived experience had strong negative relationships with social media perceived experience in continuing participation intentions (Liu et al., 2023; Chuang, 2020)..Such results indicated the

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idea that Facebook Gaming was an engagement-based ecosystem in which users were not just a consumer but an active participant who provided movement to the dynamic environment of the platform. Virtual worlds, including those in games and metaverses, which have proven to prompt users to become more attached and more willing to repeat this behaviour of using it (Feng et al., 2026; Vizeli et al., 2025). Facebook Gaming participation was not random but an internally organized phenomenon due to the technological and social affordances of the platform.

The research has shown that Facebook Gaming has a negative correlation with the attention span of users, which was consistent with the previous literature about the cognitive effects of extended exposure to digital media. The moderate attention levels of respondents indicated that the users were very engaged yet their sustained attention was impaired. This observation was in line with that of the studies that indicated that heavy utilization of social media and gaming sites may result in discontinuous attention and cognitive overload (Ben Fredj et al., 2024; Rosen et al., 2013).The existence of various stimuli, gameplay, chat interactions, and notifications were probably factors that led to the multitasking behaviour, which subsequently diminished the ability to regulate attention. Moreover, cognitive theories of media processing argued that people were restricted in their ability to process information, and too much stimulation might result in less efficiency in the allocation of attention (Lang, 2000; Kim et al., 2020). These observations strengthened the claim that Facebook Gaming helped to increase the engagement, but at the same time posed some cognitive issues with regard to the attention control.

The findings also demonstrated the great influence of Facebook Gaming on digital communication behaviour, especially the transition to informal, speedy, and expressive communication patterns. The speed with which gaming is carried out was found to be dependent on short messages, emojis, and instant replies. This change was in line with the earlier reports that suggested that social media platforms promoted brief and emotionally coloured communication because of their interactive and real-time features (Kaye et al., 2020; Berger and Milkman, 2012). The real-time communication attributes of Facebook Gaming formed an element of promptness and social being, which led to the way users related among themselves. The study of online communities has revealed that communication and experience sharing helped to form their own communication norms in the digital world (Hewett et al., 2021; Li et al., 2020). These results indicated that Facebook Gaming was a focal point in the development of the digital trends of communication.

The relationship of engagement, attention and communication behaviour were interrelated and were the study. The positive correlation between engagement and communication shows that users who were highly engaged were more probable to take part in the digital interactions. The inverse correlation between involvement and concentration indicated a trade-off between involvement and cognitive attention. It was substantiated with research that found a high level of engagement was accompanied by a high tendency to switch between tasks, which might lead to poor attention and cognitive performance (Ophir et al., 2009; Brooks, 2015). The two-sidedness of the engagement illuminated the complexity of user behaviour in online spaces, where more engagement might increase the level of social connectivity and reduce cognitive ability at the same time.

The experiment was used to add to the knowledge of the effect of platform design on user behaviour. Such features like real time feedback, interactivity and richness of content were identified as central in stimulating engagement as well as patterns of communication. Past studies have underlined that richness and interactivity of media improved user experience by enabling real-time and significant interaction (Li et al., 2022; Soares et al., 2019). On Facebook Gaming, these factors were incorporated into the design of the platform, which made the environment feel inviting and helpful towards constant engagement. The implications of the findings are also significant to the study of user behaviour in new digital ecosystems. Since social media platforms were becoming more and more complex to merge with gaming and immersive technologies, the level of user engagement was projected to grow further. But this enhanced activity may also exacerbate the problems of attention and the quality of communication. Studies about metaverse worlds shows that immersive technologies positively affected user engagement but also involved more demands on cognitive resources, which might result in user fatigue and lack of attention in the long-term (Feng et al., 2026; Vizeli et al., 2025). This mean that the developments witnessed in Facebook Gaming would probably be carried to

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other digital platforms and thus it was important to close the gaps before they affected other platforms.

The experiment supported the significance of social presence and community dynamics on user experiences. Facebook Gaming helped to form virtual communities, where people communicated and shared experiences and formed social connections. Such interactions contributed to user satisfaction and participation as well as affected communication norms and behaviours. Research on online communities has revealed that social identity and group belonging were important factors in maintaining user participation (Chuang, 2020; Hewett et al., 2021).These hypotheses were supported by the results of this research, which revealed that the social interaction was one of the major factors that influenced engagement and communication within Facebook Gaming.

6. Conclusion

The researchers concluded that Facebook Gaming fulfils a broad and profound role in terms of the engagement, attention, or digital communication behaviour of its users. The results showed that the platform has served as a successful enhancement of user interaction with interactive elements, which include live streaming, real-time chat, and gamified content. It was observed that the users were engaged, socialized and spending much time on the platform, which signifies that it was efficient in attracting and maintaining attention. This enhanced interaction came with reduced attention span; users were more distracted and engaged in more multitasking activities since they became constantly exposed to dynamic content. Facebook Gaming interfered with digital communication behaviour because it encouraged casual, fast, and expressive communication patterns that featured employing emojis, shortening, and short replies. The paper has identified that Facebook Gaming has both beneficial and adverse effects on engagement and social interaction, as well as presenting challenges associated with cognitive focus and depth of communication.

7. Limitations of the Study

The present study has several limitations that should be acknowledged. First, the study employed a convenience sampling technique, which limits the generalizability of the findings to the broader population of Facebook Gaming users. The sample consisted predominantly of young, educated male participants, and therefore the results may not be representative of female users, older age groups, or individuals with different educational backgrounds.

Second, the study utilized a cross-sectional research design, which captures data at a single point in time. Consequently, causal relationships between Facebook Gaming and user engagement, attention, or digital communication behaviour cannot be established. It remains unclear whether reduced attention spans are caused by Facebook Gaming or whether individuals with pre-existing attention difficulties are more drawn to such platforms.

Third, all variables were measured using self-reported questionnaire data. Self-reports are subject to social desirability bias, recall bias, and inaccurate self-assessment, particularly regarding attention span and communication habits. Objective measures, such as eye-tracking for attention or content analysis of chat logs for communication behaviour, were not employed.

Fourth, the study did not control for potential confounding variables, including daily time spent on Facebook Gaming, concurrent use of other social media platforms (e.g., TikTok, Twitch, YouTube Gaming), pre-existing attention disorders, or motivational factors for using the platform. These variables may influence the observed relationships.

Fifth, attention was treated as a unidimensional construct, whereas contemporary cognitive research distinguishes between sustained attention, selective attention, and executive attention. The study did not differentiate among these dimensions, potentially oversimplifying the cognitive effects of Facebook Gaming.

Finally, the absence of a control group or comparison group (e.g., non-users or light users of Facebook Gaming) limits the ability to establish baseline levels of engagement, attention, and communication behaviour. Future research should address these limitations through longitudinal designs, objective measurements, and more diverse sampling strategies.

8. Recommendations

In the study, it was advised that developers of platforms ought to create features that facilitate engagement at the expense of cognitive well-being by minimizing unnecessary notifications and introducing

features that help users focus on a single interaction. Facebook Gaming was also proposed to add a screen-time reminder, attention control, and customizable interaction settings in order to allow its users to have a better control over how they use it. There was also an incentive to create content in a structured and meaningful manner that facilitated deep interaction as opposed to shallow interaction by content creators. The educators and digital practitioners were recommended to create awareness about what excessive gaming can do to the pattern of attention and communication, and users should take responsible digital practices. More so, policymakers and stakeholders must explore the implementation of guidelines that encourage healthy digital use and reduce the adverse cognitive effects of extensive platform use.

9. Future Directions

Future studies ought to examine the long-term impacts of Facebook Gaming on cognitive and behavioural aftermaths especially with regard to sustained attention and mental well-being. It was proposed that longitudinal research would help give a better understanding of how sustained exposure to gaming situations affected the users at their times. Further research might also rely on qualitative analysis in the future in order to learn more about the subjective experience and incentives of the users. A comparison between various gaming platforms, including Twitch and YouTube Gaming, may also offer a more comprehensive look at how users behave across digital ecosystems. Future studies are needed to investigate the demographic variations such as age, gender, and cultural background and determine differences in engagement and communication patterns. The impact of the incorporation of advanced analytical methods, including machine learning and big data analysis, can additionally contribute to the comprehension of user behaviour in digital environments that are developing.

Contribution of Authors

All the authors participated in the ideation, development, and final approval of the manuscript, making significant contributions to the work reported

Conflict of Interest Statement

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Informed Consent

Informed consent was obtained from all individual participants included in the study.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Data Availability

The datasets generated during and analysed during the current study are available from the corresponding author on reasonable request.

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