IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, November 2026
Impact Factor: 8.2

Impact of Gaming Platforms on Student Academic Performance: A Survey-Based Study

Shaikh Umair[1], Shaikh Muzammil[2], Prof. Dale S. S[3], Dr. Vrushali Ranmalkar[4], Dr. P. M. Patil[5]
Department of Computer Application[1-5]
Adsul Technical Campus, Chas, Ahilyanagar, India

Abstract : *Gaming on mobile phones, computers and consoles is now a routine part of student life, yet its effect on academic performance remains contested. This study examines how gaming platforms, gaming time, motivation and mode of play relate to students' self-reported academic outcomes. A structured 24-item Google Form questionnaire was administered to a random sample of 81 high school, undergraduate and postgraduate students. Responses were analysed with chi-square tests of independence, single- and two-proportion z-tests and single-mean t-tests. Students gamed an average of 7.1 hours per week, significantly above a 5-hour benchmark ($t(80) = 5.91$, $p < .001$). About 62% agreed that gaming improves problem-solving, and 62% agreed that it has a positive overall academic impact. At the same time, 68% reported losing track of time while gaming. Male students reported grade decline more often than female students (65% vs. 39%, $p = .019$). Platform type, gaming motivation, mode of play and frequency of educational-game use were all significantly associated with the outcomes examined, whereas level of study was not. The results suggest that students' academic experience depends less on whether they game than on how, why, on what and with whom they play. The study closes with recommendations for students, educators and parents, and acknowledges that the findings rest on a small, self-reported sample.*

Key Words: gaming platforms, academic performance, students, educational games, time management, chi-square test

1. INTRODUCTION

1.1 Background

In the digital era, gaming has become one of the most popular activities among students. It offers entertainment, competition and social interaction, and the spread of mobile phones, computers and consoles has made games available to young people almost everywhere. For many students, gaming relieves stress and builds creativity, strategic thinking and problem-solving skills (Granic, Lobel, & Engels, 2014; Gee, 2007). Game-based approaches have also attracted interest as tools for teaching and learning (Prensky, 2001).

As games become more immersive and time-consuming, however, they compete with academic responsibilities. Excessive play has been linked with poorer time management, lower motivation to study and reduced academic performance, and in extreme cases with problematic or addictive use (Kuss & Griffiths, 2017). Moderate gaming may therefore support cognitive development while heavy gaming undermines study. The practical question for parents, educators and researchers is under what conditions each effect dominates.

1.2 Statement of the Problem

Students now spend a significant amount of time on digital gaming platforms. Gaming may enhance cognitive and decision-making abilities, but it may also reduce study time and weaken concentration. This study therefore examines whether gaming platforms affect the academic performance of students positively or negatively, and which gaming characteristics are most closely associated with each outcome.

1.3 Objectives

To identify the gaming platforms most commonly used by students.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, November 2026
Impact Factor: 8.2

- To analyse the relationship between gaming time and academic performance.
- To evaluate whether gaming improves problem-solving and multitasking abilities.
- To study students' perceptions of the educational value of gaming.
- To determine whether excessive gaming harms students' focus and grades.

1.4 Hypotheses

For each analysis, the null hypothesis (H_0) states that there is no association or difference, and the alternative (H_1) states that there is one. The main hypotheses are:

H_{01}: Gaming platform preference is independent of the reported impact on concentration.

H_{02}: Gender is independent of reported grade decline due to gaming.

H_{03}: Gaming motivation and mode of play are independent of perceived academic impact and time-management problems, respectively.

H_{04}: Gaming does not significantly improve students' problem-solving skills (the proportion agreeing is no greater than 50%).

H_{05}: Average weekly gaming time does not differ from the 5-hour benchmark.

All tests used a 5% significance level.

1.5 Significance

The study is relevant to students, teachers and parents who want to understand the dual role of gaming as a learning tool and a source of distraction. Its findings can help educators design game-based learning strategies while promoting a balanced lifestyle among students.

II. RESEARCH METHODOLOGY

2.1 Research Design

The study uses a quantitative, cross-sectional survey design built on a structured questionnaire of 24 items.

2.2 Population and Sample

The target population comprised high school, undergraduate and postgraduate students. A random sample of 81 students responded. By gender, 40 were male and 41 were female. By level of study, 19 were in high school, 32 were undergraduates, 19 were postgraduates and 11 were in other categories.

2.3 Data Collection Tool

The questionnaire was delivered as a Google Form. It covered demographics, gaming platform and habits, weekly time spent gaming, motivation, mode of play, and perceived effects on concentration, skills and academic outcomes. Most attitude items used a five-point Likert scale. For proportion tests, responses were collapsed into agree (agree and strongly agree) versus not agree.

2.4 Statistical Tools

Chi-square test of independence: relationships between categorical variables (for example, gender and reported grade decline).

Test for a single proportion: whether the share of students holding an opinion differs from a stated benchmark.

Test for equality of proportions: comparison of two groups, or of two items, on the share agreeing.

Test for a single mean: whether average gaming time or a Likert score differs from a reference value.

Test statistics were recomputed from the tabulated frequencies and summary statistics. Degrees of freedom follow the dimensions of each contingency table.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, November 2026
Impact Factor: 8.2

III. RESULTS

3.1 Descriptive Profile

Students reported gaming for a mean of 7.1 hours per week (SD = 3.2; range 1 to 15 hours). Mobile phones were the most frequently used platform (40 of 81 students, 49%), followed by PC (16, 20%), console (8, 10%) and online or other platforms (17, 21%). On the overall item, 50 students (62%) agreed or strongly agreed that gaming has a positive impact on their academic performance, 16 (20%) were neutral, and 15 (19%) disagreed or strongly disagreed (M = 3.58 on a five-point scale, SD = 1.17).

3.2 Gender and Reported Grade Decline

Of 40 male students, 26 (65%) agreed that their grades declined because of gaming, compared with 16 of 41 female students (39%). A chi-square test showed a significant association between gender and reported grade decline, $\chi^2(1, N = 81) = 5.47$, $p = .019$. Male students were more likely to report academic decline.

3.3 Gaming and Problem-Solving

A total of 50 of 81 students (61.7%) agreed that gaming improves their problem-solving skills. Tested against a 50% benchmark, this proportion was significantly higher, $z = 2.11$, $p = .035$. Students generally perceive gaming as beneficial for analytical thinking.

3.4 Gender and Decision-Making

About 62.5% of male students (25 of 40) and 51.2% of female students (21 of 41) agreed that gaming improved their academic decision-making. The difference was not statistically significant, $z = 1.02$, $p = .306$. Although men reported the benefit more often, the sample does not support a gender difference on this item.

3.5 Weekly Gaming Time

Mean weekly gaming time (7.1 hours) was significantly above the 5-hour benchmark, $t(80) = 5.91$, $p < .001$. Students spend considerably more time gaming than the benchmark treated here as a safe limit.

3.6 Platform and Concentration

The share of students who agreed that gaming affects their concentration during study differed by platform: 60.0% for mobile (24 of 40), 62.5% for PC (10 of 16), 62.5% for console (5 of 8) and 17.6% for online or other platforms (3 of 17). The association was significant, $\chi^2(3, N = 81) = 10.12$, $p = .018$. The pattern is driven mainly by the online or other group, which reported markedly less concentration impact, rather than by one platform standing out as especially harmful. Some expected cell counts were below 5 (notably for console), so this result should be read with caution.

3.7 Losing Track of Time

A total of 55 of 81 students (67.9%) agreed that they lose track of time while gaming, which affects their study schedule. This is significantly more than half, $z = 3.22$, $p = .001$.

3.8 Multitasking and Logical Thinking

Agreement that gaming improves multitasking (46 of 81, 56.8%) and logical or analytical thinking (50 of 81, 61.7%) did not differ significantly, $z = -0.64$, $p = .522$. Students perceive gaming as similarly beneficial for both skills. Because both items were answered by the same respondents, a paired test would be more precise than the two-sample approach used here.

3.9 Overall Perceived Academic Impact

The mean score on "Overall, gaming has a positive impact on my academic performance" was 3.58, significantly above the neutral midpoint of 3, $t(80) = 4.46$, $p < .001$. On average, students believe gaming helps rather than harms their academics.

3.10 Level of Study and Educational Games

Frequency of playing educational games was distributed similarly across high school, undergraduate, postgraduate and other students, $\chi^2(12, N = 81) = 1.07$, $p = 1.00$. There is no evidence that level of study is associated with educational-game use. Many expected counts were small, so this test has limited power.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, November 2026 Impact Factor: 8.2

3.11 Support for Classroom Use of Educational Games

A total of 52 of 81 students (64.2%) supported using educational games in classrooms. Against a 60% benchmark this was not significantly different, $z = 0.77$, $p = .441$. Support is strong, but the sample cannot show that it exceeds 60%.

3.12 Weekly Gaming Hours and Academic Focus

Students who game longer tended to report reduced academic focus, but the association was not statistically significant at the 5% level, $\chi^2(3) = 7.26$, $p = .064$. The result points to a possible risk without confirming it in this sample.

3.13 Educational Game Frequency and Problem-Solving

The share of students agreeing that gaming improves problem-solving rose with the frequency of educational-game play: 17.6% among those who never play (3 of 17), 48.0% among rare players (12 of 25), 66.7% among occasional players (10 of 15), 80.0% among frequent players (4 of 5) and 75.0% among those who always play (3 of 4). The association was significant, $\chi^2(8, N = 81) = 17.90$, $p = .022$. Several cells were sparse, so the result is indicative rather than conclusive.

3.14 Gaming Motivation and Perceived Academic Impact

Perceived academic impact differed by motivation. Positive perceptions were reported by 59.1% of students who play for competition (13 of 22) and 60.0% of those who play to learn (3 of 5), compared with 13.5% of those who play for entertainment (5 of 37) and 25.0% of those who play to relax (4 of 16). The association was significant, $\chi^2(8, N = 81) = 21.82$, $p = .005$. One respondent played mainly to socialise, and many expected counts were below 5, so the finding should be treated as exploratory.

3.15 Mode of Gaming and Time Management

Agreement that gaming disrupts study schedules rose from 23.8% among solo players (5 of 21) to 57.1% among those who play with friends (28 of 49) and 81.8% among online-community players (9 of 11). The association was significant, $\chi^2(4, N = 81) = 11.30$, $p = .023$.

3.16 Summary of Tests

Analysis	Test	Statistic	p-value	Result at 5%
Gender × grade decline	Chi-square	$\chi^2(1) = 5.47$	.019	Significant
Problem-solving agreement vs. 50%	Single proportion	$z = 2.11$	.035	Significant
Male vs. female, decision-making	Equality of proportions	$z = 1.02$	.306	Not significant
Weekly gaming hours vs. 5	Single mean	$t(80) = 5.91$	< .001	Significant
Platform × concentration	Chi-square	$\chi^2(3) = 10.12$	.018	Significant
Loses track of time vs. 50%	Single proportion	$z = 3.22$	.001	Significant
Multitasking vs. logical thinking	Equality of proportions	$z = -0.64$	.522	Not significant
Overall positive impact vs. neutral	Single mean	$t(80) = 4.46$	< .001	Significant
Study level × educational games	Chi-square	$\chi^2(12) = 1.07$	1.00	Not significant
Classroom support vs. 60%	Single proportion	$z = 0.77$	.441	Not significant
Weekly hours × focus	Chi-square	$\chi^2(3) = 7.26$	.064	Not significant
Educational games × problem-solving	Chi-square	$\chi^2(8) = 17.90$	.022	Significant
Motivation × perceived impact	Chi-square	$\chi^2(8) = 21.82$	.005	Significant
Mode of play × losing track of time	Chi-square	$\chi^2(4) = 11.30$	.023	Significant

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, November 2026
Impact Factor: 8.2

IV. DISCUSSION

The results describe a group of students who game heavily, who mostly regard gaming as beneficial, and who also acknowledge real costs to their time management. The average of 7.1 hours per week is well above the 5-hour benchmark, and more than two-thirds of respondents say they lose track of time while playing. Yet 62% judge the overall academic effect of gaming to be positive. These views are not contradictory: students can credit gaming with sharpening problem-solving while recognising that it eats into study time. The data are self-reported perceptions, not measured grades, and perceived benefit does not demonstrate actual academic gain.

The more informative findings concern how students play. Motivation was strongly related to perceived impact: students who play to learn or to compete were far more positive than those who play mainly for entertainment or relaxation. Mode of play mattered for time management, with the share losing track of time rising steadily from solo play to play with friends and online communities. This is consistent with the idea that social and competitive play sustains longer sessions. The frequency of educational-game play rose with perceived problem-solving benefit, which supports the view that the type of game, and not only the amount of play, shapes outcomes (Gee, 2007; Prensky, 2001).

The platform result needs careful reading. Platform was significantly associated with the reported effect on concentration, but the difference arises because online or other players reported much less impact, while mobile, PC and console users reported similar levels. Mobile gaming alone is not singled out as the main problem in these data. Larger samples and finer platform categories would be needed to say more.

Gender differences were mixed. Men reported grade decline more often than women, but the apparent male advantage in perceived decision-making benefit was not statistically significant. Gaming weekly hours showed a suggestive but non-significant link with reduced focus ($p = .064$), and support for classroom use of educational games, at 64%, was not distinguishable from the 60% benchmark. Level of study was unrelated to educational-game use. These null results should not be read as evidence of no effect, given the modest sample.

Overall, the findings are consistent with a view in which moderate, purposeful gaming can support cognitive skills, while long, unstructured, socially driven sessions are associated with time-management difficulty (Granic et al., 2014; Jackson et al., 2012; Kuss & Griffiths, 2017).

V. FINDINGS AND SUGGESTIONS

Findings

1. Male students were more likely than female students to report grade decline due to gaming.
2. A majority of students believe gaming improves problem-solving skills.
3. Average weekly gaming time (7.1 hours) is significantly above the 5-hour benchmark.
4. Gaming platform is significantly associated with reported concentration effects.
5. Most students lose track of time while gaming.
6. Students see gaming as equally beneficial for multitasking and logical thinking.
7. On average, students perceive gaming as having a positive academic impact.
8. Educational-game use does not differ by level of study, and support for classroom use is strong (64%) but not significantly above 60%.
9. Longer weekly gaming shows a suggestive but non-significant link with reduced focus.
10. More frequent educational-game play is associated with greater perceived problem-solving benefit.
11. Students who play for learning or competition report more positive academic outcomes than those who play for entertainment or relaxation.
12. Playing with friends or online communities is associated with more time-management problems.

Suggestions

- **For students:** Plan gaming within a fixed weekly schedule, prefer purposeful play (learning, skill-building), and use timers or in-game reminders to avoid losing track of time.
- **For educators:** Introduce curriculum-linked educational games through pilot programmes before wider

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, November 2026
Impact Factor: 8.2

rollout, and offer gender-sensitive guidance on managing gaming habits.

- **For parents and institutions**: Encourage structured gaming schedules, monitor session length and discuss social and online-community play, which showed the strongest link with time-management problems.
- **For game developers:** Build in time-limit prompts and session summaries, and expand high-quality educational and skill-based titles.

VI. LIMITATIONS OF THE STUDY

The sample was small (81 students) and drawn from specific colleges, so results may not generalise to other regions or institutions.

Data were self-reported and may reflect recall or social-desirability bias; academic performance was measured by perception, not recorded grades.

The design is cross-sectional, so the associations found cannot be interpreted as causal.

Several contingency tables had small expected counts, which weakens the reliability of the chi-square approximations.

Only selected gaming platforms were considered, and types of games and individual habits were not examined in depth.

Family background, study environment and other factors that could influence performance were not controlled.

Multiple tests were run without correcting for multiple comparisons, so some significant results may be chance findings.

Time constraints limited the depth of data collection and analysis.

VII. FUTURE SCOPE

Future research can use larger and more diverse samples across colleges, regions and disciplines such as engineering, arts and commerce, to see whether the effects of gaming differ by field. Longitudinal studies could track how sustained gaming over months or years changes academic performance, using recorded grades alongside self-reports. Further work can compare mobile, PC and console gaming in more detail, and examine specific game genres, motivation, stress and concentration. The role of educational and game-based learning deserves closer study, including how time management and parental guidance help students game responsibly. Emerging technologies such as virtual reality and artificial intelligence may also make learning through games more interactive and effective.

VIII. CONCLUSION

Students in this sample game more than 5 hours a week on average, mostly regard gaming as helpful to their studies, and frequently lose track of time while playing. The associations found with motivation, mode of play, platform and educational-game use suggest that the quality and context of gaming matter more than the mere fact of playing. Promoting purposeful, time-bound and where possible educational gaming is a practical way to keep its benefits while limiting the harm to academic work. Because the study is small, self-reported and cross-sectional, these conclusions should be confirmed with larger, longitudinal research.

REFERENCES

1. Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. Journal of Personality and Social Psychology, 78(4), 772–790.
2. Gee, J. P. (2007). What video games have to teach us about learning and literacy. Palgrave Macmillan.
3. Granic, I., Lobel, A., & Engels, R. C. M. E. (2014). The benefits of playing video games. American Psychologist, 69(1), 66–78.
4. Jackson, L. A., et al. (2012). Video game playing, cognition, and academic performance. Computers in Human Behavior, 28(2), 718–722.
5. Kuss, D. J., & Griffiths, M. D. (2017). Internet gaming addiction: A systematic review. International Journal of Mental Health and Addiction, 15(2), 438–455.
6. Prensky, M. (2001). Digital game-based learning. McGraw-Hill.