

Original Article

Student Engagement and Learning Motivation in Khan Academy: Evidence from Kiblawan South District Toward Boosting Learners' Participation

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Abstract. The study investigated the level of student engagement and motivation in using Khan Academy, a widely adopted online learning platform. It examined the relationship between these variables and differences across grade levels. While previous studies have explored digital learning tools, limited research has focused on how Khan Academy specifically influences engagement, motivation, and academic performance among secondary students. This study addresses this gap by providing empirical evidence on students' interaction with the platform and the role of teacher practices in enhancing learning outcomes. The research employed a quantitative descriptive-correlational design involving Junior and Senior High School students as participants. Data were collected using structured questionnaires and platform usage metrics, including proficiency rates and learning minutes. Statistical analyses, including mean, standard deviation, correlation, and t-tests, were applied to interpret the findings. Results indicate that students demonstrated strong engagement and high motivation when using Khan Academy, with Junior High School students exhibiting higher motivation than their Senior High School counterparts. A significant positive correlation was observed between engagement and learning motivation, suggesting that increased interaction with the platform enhances students' enthusiasm for learning. The findings underscore the importance of technology-enhanced learning platforms in promoting student engagement and motivation. It is recommended that educators strategically implement Khan Academy with tailored instructional strategies to optimize student learning, enhance autonomy, and maintain motivation across developmental stages.

Keywords: Instructional strategies; Khan Academy; Learning motivation; Online learning; Student engagement

Student engagement and learning motivation continue to be major concerns in modern education, especially with the growing use of digital technologies in teaching. Although online learning platforms provide opportunities for self-paced and interactive learning, students do not always become actively engaged or motivated simply through access to technology. Many learners still experience low participation, limited persistence, and declining interest in learning. Hence, there is a need to examine how educational platforms such

as Khan Academy influence students' engagement and motivation within actual classroom settings.

Globally, numerous studies have consistently identified motivation and engagement as significant predictors of academic success in online learning environments. In Europe, Ferrer et al. (2020) found that students' attitudes toward online learning significantly influenced their motivation and engagement in higher education. Their findings emphasized that positive perceptions of digital learning environments encourage students to participate more actively in academic tasks. Similarly, Wang et al. (2024), using a multilevel latent profile analysis across institutions, reported that both student- and institutional-level factors significantly shape patterns of motivation and engagement in online learning contexts.

In the Middle Eastern context, Alshammari and Alrashidi (2024) revealed that student engagement significantly predicted learning achievement in English as a Foreign Language (EFL) online courses, highlighting the strong relationship between active participation and improved academic outcomes. Likewise, studies focusing specifically on Khan Academy demonstrated its potential to support student learning and autonomy. Vidergor and Ben-Amram (2020) reported that students perceived Khan Academy as a platform that enhanced their autonomy and improved their mathematics learning experiences. Complementing these findings, Karimov et al. (2023) found that integrating Khan Academy in under-resourced communities positively influenced students' motivation and academic performance, particularly when strategically incorporated into instruction.

In the Philippine context, motivation and engagement in online and blended learning environments have also received considerable attention, especially during and after the COVID-19 pandemic. Feudo and Cuizon (2022) found that learning satisfaction and motivation to study online were significantly related among Filipino students engaged in remote learning. Their findings suggest that motivation plays a crucial role in shaping students' academic experiences in digital learning environments. Furthermore, Aves et al. (2024) emphasized that student engagement among Filipino learners encompasses behavioral, emotional, and cognitive dimensions, highlighting the multifaceted nature of engagement in local educational settings.

In Davao Region, studies continue to underscore the importance of interactive and innovative instructional strategies in sustaining student engagement. Casia et al. (2024) reported that gamification strategies significantly influenced the engagement of senior high school students, suggesting that structured digital elements can improve both participation and motivation. While these findings demonstrate the promise of technology-enhanced learning, limited district-level evidence exists regarding how a specific platform, such as Khan Academy, influences student engagement and learning motivation in rural public-school settings, particularly in the Kiblawan South District.

Despite the growing body of international and national research, a significant gap remains concerning the localized impact of Khan Academy on student engagement and learning motivation within the Kiblawan South District. Most existing studies focus primarily on higher education institutions or broader online learning environments, leaving rural district-level contexts insufficiently explored. Addressing this gap is both timely and essential in advancing evidence-based educational innovations. This study aligns with the United Nations Sustainable Development Goal 4 (Quality Education), which advocates for inclusive, equitable, and quality education and lifelong learning opportunities for all. By examining the role of Khan Academy in enhancing student engagement and motivation, the study seeks to contribute to the improvement of digital learning practices in underserved communities.

The study was further anchored on Self-Determination Theory, proposed by Deci and Ryan (2012), which posits that learners become more intrinsically motivated when their psychological needs for autonomy, competence, and relatedness are supported. Khan Academy's mastery-based progression, self-paced learning structure, and immediate feedback mechanisms may address these needs, thereby fostering greater engagement and sustained motivation among learners. Investigating this theoretical alignment within the context of Kiblawan South District offers both contextual and theoretical contributions to educational innovation and technology-integrated instruction.

This study aimed to determine the association between student engagement and learning motivation among students using Khan Academy. Specifically, it sought to: (1) determine the level of student engagement in Khan Academy in terms of proficiency rate and learning minutes gained; (2) determine the level of students' learning

motivation toward Khan Academy; (3) determine the relationship between student engagement and learning motivation in Khan Academy; (4) determine the significant difference in the level of student motivation in using Khan Academy; and (5) propose an action plan to improve student participation in Khan Academy based on the findings of the study. The findings of this research may serve as a basis for innovating teaching and learning processes and strengthening the implementation of digital learning platforms in public schools.

Methodology

Research Design

This study employed a descriptive–correlational research design to determine the relationship between student engagement and learning motivation in the use of Khan Academy. This design was appropriate because it allowed the researchers to examine the association between variables without manipulating the study environment. By observing variables in their natural setting, the study identified patterns and relationships that exist among students using Khan Academy. According to Aprecia et al. (2022), descriptive–correlational research systematically describes variables and determines the degree of relationship among them under naturally occurring conditions. Guided by this framework, the study investigated whether students’ engagement levels were significantly associated with their learning motivation while using Khan Academy.

Participants and Sampling Technique

The participants of the study were Junior High School (Grades 7–10) and Senior High School (Grades 11–12) students enrolled in Khan Academy during the Academic Year 2025–2026 at the lone public secondary school in Balasiao, Kiblawan, Davao del Sur. The school was selected because it was among the seven public secondary schools in the Division of Davao del Sur implementing the Khan Academy program as part of innovative learning initiatives. The target population consisted of 350 students actively registered and using Khan Academy. Using the RaoSoft sample size calculator, a total of 184 respondents was determined as the appropriate sample size based on the population size, confidence level, margin of error, and response distribution.

The study utilized simple random sampling to ensure that every student enrolled in Khan Academy had an equal and independent chance of being selected. According to Creswell and Creswell (2018) and Etikan and Bala (2017), simple random sampling minimizes selection bias and increases the representativeness of the sample. On the other hand, the inclusion criteria covered students officially enrolled in Khan Academy and actively using the platform during the conduct of the study. Students who were inactive on the platform, had incomplete engagement records, or failed to secure parental consent and student assent were excluded from the study. This sampling procedure strengthened the internal validity of the research and ensured that the respondents adequately represented the target population. Although the study was conducted within a single public secondary school, the sample size was sufficient for correlational analysis and provided meaningful insights into the relationship between student engagement and learning motivation when using Khan Academy.

Research Instrument

The study utilized both secondary and primary data sources. Secondary data included students’ proficiency rates and total learning minutes generated from Khan Academy records, which served as objective indicators of student engagement. Primary data were collected using an adapted questionnaire based on the Academic Motivation Scale (AMS) developed by Vallerand et al. (1992). However, only the intrinsic motivation and extrinsic motivation dimensions of the AMS were utilized in this study, as these constructs are directly associated with the factors that encourage and sustain students’ engagement in learning through Khan Academy. The amotivation dimension was excluded since the study focused on identifying positive motivational influences rather than the absence of motivation. The questionnaire was modified to fit the study context while preserving the conceptual foundations of the selected AMS constructs.

To establish content validity, the adapted instrument was evaluated by a panel of experts composed of a Master Teacher, the School Head, and the Khan Academy Focal Person. Their recommendations ensured that the questionnaire items were clear, relevant, and appropriate for the study context. To further establish reliability, the adapted questionnaire underwent pilot testing among students with similar characteristics who were not included in the actual study. The reliability analysis yielded a Cronbach’s alpha coefficient of 0.89, indicating high internal consistency and reliability of the instrument.

Data Gathering Procedure

The study employed a systematic procedure to collect both secondary and primary data while ensuring ethical compliance and protecting the rights of all participants. Since the researcher also serves as the Khan Academy Focal Person, accessing the platform's records was straightforward, allowing the efficient retrieval of accurate and updated data on students' learning minutes and engagement. This dataset provided an objective measure of student activity and interaction with Khan Academy.

Prior to the collection of primary data, parental or guardian consent forms were distributed to all selected students. The forms clearly explained the study's purpose, procedures, potential risks, and anticipated benefits, allowing parents or guardians to make an informed decision regarding their child's participation. In addition, assent forms were presented to the students in age-appropriate language, emphasizing that participation was voluntary and that they could withdraw at any time without consequences.

The adapted motivation questionnaire, based on the Academic Motivation Scale (AMS) by Vallerand et al. (1992), was administered to assess students' motivation toward using Khan Academy. During administration, students were given sufficient time to complete the questionnaire, with the researchers available to clarify any items as needed. All collected data were handled with strict confidentiality. Students' identities were anonymized, and the data were securely stored to prevent unauthorized access. Following collection, the data were organized and prepared for analysis, including summarizing engagement records and coding questionnaire responses to compute subscale scores for intrinsic motivation, extrinsic motivation, and amotivation. This systematic approach ensured the reliability and integrity of the dataset, providing a robust foundation for the study's analysis.

Data Analysis

Below were the analyses used in the study to address its research objectives:

Mean and Standard Deviation. These were used to determine the level of student engagement in Khan Academy, measured in terms of proficiency rate and learning minutes gained, as well as the level of learning motivation of students toward using the platform.

Pearson's Correlation Coefficient (r). This was used to determine the relationship between student engagement and learning motivation in using Khan Academy.

Independent Samples t -test. This was used to determine the difference in the level of motivation of students in using Khan Academy.

Ethical Considerations

The study strictly followed ethical principles to protect the welfare and rights of all participants, in accordance with established guidelines for educational research. Ethical considerations were carefully observed throughout the research process because the participants were minors.

Informed Consent. Before data collection, parental or guardian consent forms were distributed to all selected students. These forms provided detailed information about the purpose of the study, the research objectives, the procedures involved, potential risks, and anticipated benefits. Parents or guardians were informed that participation was voluntary and that they could withdraw their child from the study at any time without penalty.

Voluntary Participation. Participation in the study was entirely voluntary. In addition to parental consent, assent forms were presented to the students. These forms were written in clear, age-appropriate language, explaining the purpose of the study, the procedures, and the students' right to refuse or withdraw at any stage without consequence. Before the conduct of the study, the researchers also provided an orientation on the research objectives and procedures to the students, ensuring that they understood the purpose of the study and what their participation would involve. This orientation helped the students make informed and voluntary decisions about participating.

Do No Harm. The study was designed to ensure the physical, psychological, and emotional safety of the participants. The procedures for administering the motivation questionnaire and collecting engagement data from Khan Academy did not pose any harm or cause distress.

Confidentiality. All data collected, including students' responses and engagement records, were treated with strict confidentiality. Information was stored securely and only accessible to the researchers to prevent misuse or disclosure to unauthorized individuals.

Anonymity. To maintain anonymity, students' personal identifiers were removed from the datasets. Responses were coded to prevent the identification of individual students. This ensured that the reported results represented the group without linking data to specific participants.

Results and Discussion

Level of Student Engagement in Khan Academy

Table 1 presents the level of student engagement in Khan Academy in terms of proficiency rate and learning minutes gained. The results reveal that students obtained a mean proficiency rate of 82.45 (SD = 8.67), interpreted as strong mastery and regular engagement. This indicates that students were generally able to achieve a high level of mastery in the lessons and activities provided through the platform. The relatively low variability of scores suggests that students consistently participated in and completed the learning activities.

In a similar lens, students obtained a mean of 142.30 learning minutes (SD = 25.41), which is also interpreted as strong mastery and regular engagement. This finding implies that students spent a considerable amount of time interacting with Khan Academy learning materials, reflecting sustained participation and active engagement with the platform.

Table 1. *Level of Student Engagement*

Variable	Mean	SD	Qualitative Description
Proficiency Rate	82.45	8.67	Strong mastery and regular engagement
Learning Minutes Gained	142.30 minutes	25.41	Strong mastery and regular engagement

The findings suggest that Khan Academy effectively promotes consistent student participation and meaningful learning engagement. Students who regularly interacted with the platform were able to develop stronger mastery of lessons while maintaining active involvement in learning tasks. These results have important implications for educators, as they indicate that integrating structured digital platforms can support continuous learning, especially in blended and technology-assisted classrooms.

The result is consistent with previous research showing that sustained engagement with Khan Academy is associated with higher proficiency and meaningful learning outcomes. Karimov et al. (2023) reported that students in under-resourced communities who actively used Khan Academy achieved a mean mastery of 81.6% and spent an average of 138 minutes per week on the platform. Similarly, Yamkovenko and Bergstrom (2025) found that consistent use of Khan Academy resulted in measurable learning gains, and Yamkovenko et al. (2025) showed that each additional minute spent on the platform contributed to significant progress in mastery. These findings indicated that students' active participation and sustained interaction with Khan Academy contributed to both high proficiency rates and regular engagement.

Level of Student Motivation Towards Khan Academy

Table 2 presents the level of student motivation toward using Khan Academy. The results show that intrinsic motivation obtained an overall mean of 4.21 (SD = 0.66), interpreted as Very High. This indicates that students are highly motivated and possess a strong positive attitude toward learning through Khan Academy. Many students use the platform because they enjoy learning new concepts, solving problems independently, and exploring topics out of curiosity. Extrinsic motivation obtained an overall mean of 3.96 (SD = 0.81), interpreted as High. This suggests that students are also motivated by external factors such as academic achievement, teacher expectations, parental encouragement, and future educational goals. The grand mean of 4.09 (SD = 0.74), interpreted as High, indicates that students generally demonstrate a strong level of motivation toward the use of Khan Academy. The findings imply that the platform supports both internal and external motivational factors that encourage students to actively participate in learning activities.

The results suggest that Khan Academy creates a learning environment that encourages independent learning, self-improvement, and academic responsibility among students. The platform's interactive features, self-paced structure, and immediate feedback mechanisms may contribute to students' enjoyment and motivation to learn. These findings are important for educators because they demonstrate that technology-assisted learning platforms can strengthen students' willingness to engage in academic tasks both for personal satisfaction and academic achievement.

Table 2. *Level of Motivation*

Indicators	Mean	SD	Qualitative Description
Intrinsic Motivation			
I use Khan Academy because I enjoy learning new topics.	4.32	0.61	Very High
I complete exercises because they are fun and interesting.	4.18	0.73	High
I explore Khan Academy content out of curiosity.	4.25	0.65	Very High
I enjoy challenging myself with difficult exercises.	4.10	0.70	High
I feel satisfied when I learn something new.	4.41	0.58	Very High
I use Khan Academy because I like solving problems on my own.	4.05	0.76	High
I study topics that interest me without needing rewards.	3.88	0.82	High
I use Khan Academy because it makes me feel competent.	4.22	0.63	Very High
I enjoy discovering new ideas and concepts on Khan Academy.	4.30	0.60	Very High
I feel motivated to learn on Khan Academy for personal growth.	4.37	0.55	Very High
Overall	4.21	0.66	Very High
Extrinsic Motivation			
I complete exercises because my teacher or parents expect me to.	3.95	0.84	High
I use Khan Academy to earn praise or recognition.	3.72	0.90	High
I engage with Khan Academy because it helps me achieve my academic goals.	4.28	0.62	Very High
I study because I know it is important for my future.	4.46	0.54	Very High
I complete exercises to avoid disappointing my parents or teachers.	3.80	0.88	High
I use Khan Academy because it looks good on my report card or portfolio.	3.69	0.91	High
I work hard on Khan Academy exercises to gain approval from others.	3.74	0.87	High
I participate because completing exercises helps me reach rewards or incentives.	3.83	0.85	High
I use Khan Academy because achieving good results motivates me.	4.20	0.64	Very High
I complete exercises because my teacher or parents expect me to.	3.95	0.84	High
Overall	3.96	0.81	High
Grand Total	4.09	0.74	High

These findings align with research indicating that online learning platforms can substantially enhance student motivation. Clark et al. (2025) reported a positive correlation between the use of online platforms and increased motivation, highlighting improvements in self-regulation, engagement, and students' sense of autonomy in learning. Students also indicated greater motivation to participate in lessons and complete assignments when regularly using these platforms. Likewise, studies focusing specifically on Khan Academy found that students perceived the platform as supporting their autonomy and enriching their mathematics learning experience (Vidergor & Ben-Amram, 2020).

Significant Relationship Between Student Engagement and Learning Motivation

Table 3 presents the significant relationship between student engagement and learning motivation. The results show a strong positive correlation between the two variables, with a correlation coefficient of ($r = 0.68$, $p < .001$). This indicates that as the level of student engagement increases, the level of learning motivation also tends to increase. The obtained p-value of less than .001 suggests that the relationship between the variables is statistically significant. Based on the results, the null hypothesis (H_0) is rejected, which means that there is a significant relationship between student engagement and learning motivation. This implies that students who are more actively engaged in learning activities are more likely to demonstrate higher levels of motivation toward learning. The findings suggest that active participation in learning platforms such as Khan Academy may contribute to enhancing students' motivation to learn. When students spend more time interacting with learning materials, completing exercises, and engaging with educational content, their interest and enthusiasm toward learning are strengthened.

Table 3. *Relationship Between Level of Student Engagement and Learning Motivation*

Variables	r-value	p-value	Remark	Decision
Student Engagement and Learning Motivation	0.68	<0.001	Significant	Reject H_0

The result is supported by research specifically on Khan Academy, which found that students perceived the platform as enhancing their autonomy and supporting their mathematics learning experience (Vidergor & Ben-Amram, 2020). Complementing this, Karimov et al. (2023) reported that the use of Khan Academy in under-resourced communities positively influenced students' motivation and academic performance, particularly when integrated strategically into instruction. Similarly, Ferrer et al. (2020) found that students' attitudes toward online learning significantly affected their levels of motivation and engagement in higher education contexts. These findings imply that fostering active engagement through online learning platforms can enhance students' motivation and overall academic outcomes.

Significant Difference on the Level of Motivation in Using Khan Academy when Grouped According to Grade Level (JHS and SHS)

Table 4 presents the significant difference in the level of students' motivation in using Khan Academy when grouped according to grade level (Junior High School and Senior High School). The computed t-value of 2.37 with a p-value of 0.019 indicates that the difference is statistically significant at the 0.05 level of significance. Since the p-value (0.019) is less than 0.05, the null hypothesis (Ho) is rejected.

Table 4. Significant Difference in the Level of Motivation in Using Khan Academy

Variable	t-value	p-value	Remark	Decision
Learning Motivation	2.37	0.019	Significant	Reject Ho

The results reveal that Junior High School students exhibit higher motivation in using Khan Academy compared to Senior High School students. This suggests that younger students are more enthusiastic and engaged with the platform as a learning tool. The difference in motivation may be influenced by factors such as JHS students' novelty and excitement toward technology-assisted learning, whereas SHS students may experience lower motivation due to increased academic workload, more structured learning schedules, and familiarity with digital learning platforms, which reduces the novelty effect.

The study aligns with research indicating that younger students generally demonstrate higher motivation when using online learning platforms compared to older students. Junior High School students tend to show greater enthusiasm and engagement with technology-assisted learning. In support of this, Tenório et al. (2018) found that incorporating gamification techniques into Khan Academy in a Brazilian high school significantly enhanced students' motivation, engagement, and commitment, especially in completing extra-classroom activities. Similarly, Ulum (2023) reported that primary school students who used Khan Academy for mathematics achieved higher learning outcomes and exhibited stronger motivation than peers who used traditional or alternative digital platforms, demonstrating the platform's effectiveness in fostering both interest and academic performance. These results suggest that differences in motivation between Junior and Senior High School students may be influenced by factors such as novelty, excitement toward technology-assisted learning, and the engaging effects of gamified features within the platform. They also highlight the importance for educators to consider grade-level differences when integrating Khan Academy, implementing strategies that maintain engagement and motivation across developmental stages.

Conclusion

This study concludes that Khan Academy serves as an effective technology-enhanced learning platform that promotes strong student engagement and high levels of learning motivation. The findings revealed a significant positive relationship between student engagement and motivation, indicating that students who actively participate in learning activities through Khan Academy are more likely to develop stronger interest, enthusiasm, and commitment toward learning. The study also found that Junior High School students demonstrated higher motivation compared to Senior High School students, suggesting that developmental and instructional factors influence students' responses to technology-assisted learning environments.

The study contributes to the growing body of literature on digital learning by providing localized evidence on the effectiveness of Khan Academy in a rural public-school context. The findings support the principles of Self-Determination Theory by showing that self-paced learning, immediate feedback, and mastery-based progression can enhance students' autonomy, competence, and motivation. These results highlight the importance of integrating interactive and student-centered digital platforms in improving participation, engagement, and academic performance.

The study further emphasizes several instructional practices that may maximize Khan Academy's effectiveness in schools. These include integrating the platform into graded activities and performance tasks, providing recognition and feedback for active participation, encouraging collaborative learning activities, monitoring student progress regularly, and strengthening parental involvement. Continuous professional development for teachers and the use of innovative strategies such as gamification and reflective learning practices may further sustain students' motivation and engagement. These implications may guide educators, school leaders, and policymakers in strengthening technology integration and digital learning implementation in schools.

Despite its contributions, the study has several limitations. The research focused only on one public secondary school, which may limit the generalizability of the findings to other educational settings. In addition, the study relied on self-reported survey responses and platform-generated engagement data, which may not fully capture all dimensions of student learning experiences and long-term academic outcomes. Future studies may explore larger and more diverse populations, include multiple subject areas, and examine the long-term effects of Khan Academy on student achievement and motivation. Comparative studies on different motivational strategies and teacher interventions may also provide deeper insights into optimizing technology-enhanced learning environments.

Contributions of Authors

All authors contributed to the design of the study, performed the statistical analysis, developed the protocol, and prepared the first draft of the manuscript. They were involved in managing the analyses and conducting the literature searches. They read and approved the final manuscript.

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Conflict of Interests

No conflict of interest.

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