WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Quantitative Study on Self-Study Methods, Motivation, and Academic Performance Progress Among Grade 12 Students at Vinschool Ocean Park 1

Nguyễn Trúc Anh[1], Mạc Gia Linh[2], Bùi Đức Khải[3], Brent Gifford Econg[4]

Vinschool Truong Trung Hoc / Secondary and High School Ocean Park 1
Gia Lam, Hanoi
Project Research: Academic Writing School Year 2024-2025
[4] Teacher

ABSTRACT :

Mastering self-study skills is essential for high school students preparing for college and future careers. At Vinschool Ocean Park, Grade 12 students follow either a STEM (Science, Technology, Engineering, and Mathematics) or Social Studies track, each with distinct learning preferences. STEM Vinsers often thrive on hands-on activities and problem-solving, while Social Studies Vinsers tend to favor reading, note-taking, and discussions. However, little research has been done to compare how these study methods impact learning outcomes in a high school setting.This study investigates how Vinsers approach self-study, what influences their choices, and how effective different methods are. A survey of 52 Grade 12 students revealed that 46.2% rely on online resources, making digital tools the most popular choice, while practice exercises (21.2%) and textbooks (21.2%) remain relevant but less impactful on GPA growth. Interestingly, 75% of respondents reported GPA improvement due to their self-study strategies, with 45.3% seeing significant gains. STEM students leaned toward interactive problem-solving, while Social Studies students preferred reading-based methods, reinforcing that study habits are shaped by academic focus. These findings highlight the importance of customized learning strategies. Schools should expand access to digital tools for STEM students while ensuring Social Studies learners have more opportunities for discussion and analysis. Future research should explore how these study habits affect long-term academic performance and how schools can better support diverse learning styles. By recognizing what works best for each student, educators can create a more engaging and effective learning environment that fosters independence, confidence, and academic success.

Definitions of terms: STEM - acronym for Science, Technology, Engineering and Maths; Vinser(s)- a student(s) of Vinschool system.

I INTRODUCTION :

A. Literature Review

The Role of Self-Study in Academic Success

Self-directed learning (SDL) is a key factor in academic achievement, allowing students to take control of their learning process, stay engaged, and improve retention (Ying et al., 2023). However, study habits vary by discipline. STEM students favor hands-on problem-solving and logical reasoning, while Social Studies students rely more on reading, analysis, and discussion (Marrero & Schmid, 2023). These differences suggest that self-study methods should be tailored to subject-specific learning needs.

The Shift Toward Digital Learning

Traditional methods like textbook reading and note-taking are being replaced by digital and interactive tools, including educational videos, mobile apps, and online simulations. Blended learning, which combines digital study with structured engagement, has been shown to improve comprehension and motivation (Tucker et al., 2018). However, some studies argue that digital tools may enhance engagement but not necessarily lead to deeper understanding. (Bakoban & Aljarallah, 2015) found that self-regulated learning—where students select study methods based on effectiveness—leads to better academic performance, reinforcing the importance of flexibility in study choices.

Bridging the Gap: Study Preferences Across Disciplines

Most research focuses on either general study strategies or subject-specific approaches, with little direct comparison between STEM and Social Studies students at the high school level. Studies like Hora and Oleson (2017) highlight STEM students' preference for structured problem-solving. However, these studies do not compare how different academic demands shape study preferences. This study aims to fill that gap by analyzing the self-study methods of STEM and Social Studies students at Vinschool Ocean Park, identifying differences and their impact on learning. Understanding these preferences can help educators develop more effective, discipline-specific study strategies that support students in both their academic and future career paths.

B. Problem Statement

In the modern educational landscape, student motivation plays a crucial role in academic success. However, there is limited research on how motivation varies between students in STEM (Science, Technology, Engineering, and Mathematics) and Social Studies disciplines, particularly in the context of self-study. Understanding the factors that influence students' motivation and their preferred self-study methods can provide valuable insights for educators and policymakers in designing effective learning strategies. At Vinschool Ocean Park, students from diverse academic backgrounds employ different self-study techniques to enhance their learning experience. However, there is a lack of empirical data comparing how STEM and Social Studies students approach self-directed learning and what drives their motivation. Do STEM students rely more on structured, problem-solving techniques, while Social Studies students prefer analytical and discussion-based methods? Furthermore, what intrinsic and extrinsic motivational factors influence their study habits? This study aims to quantitatively examine the motivation levels and self-study preferences of STEM and Social Studies students at Vinschool Ocean Park. By identifying key differences and commonalities, the research seeks to contribute to the development of tailored educational approaches that foster student engagement and academic success.

C. Objectives of the research

This study aims to explore what drives students' motivation and how they prefer to study on their own, focusing on STEM and Social Studies students at Vinschool Ocean Park. By understanding their study habits and what keeps them engaged, this research hopes to offer insights that could help improve learning experiences. Specifically, it seeks to:

1. Understand what motivates students in STEM and Social Studies to engage in self-study.
2. Explore and compare their preferred self-study methods—whether structured problem-solving, discussion-based learning, or other approaches.
3. Examine the role of intrinsic (personal interest, curiosity) and extrinsic (grades, rewards) motivation in shaping their study habits.
4. Identify key differences and similarities in how STEM and Social Studies students approach independent learning.
5. Provide practical insights for teachers and schools to support students in developing effective self-study strategies.

D. D. Hypothesis

We believe that students' self-study preferences are shaped by the way their academic disciplines challenge them to think and learn. STEM students are likely to prefer hands-on learning, problem-solving exercises, and digital tools because these methods allow them to experiment and apply concepts in real-world scenarios. On the other hand, Social Studies students may lean toward reading, note-taking, and discussions, as these approaches help them analyze texts, interpret historical events, and think critically about social issues. Research suggests that blended learning, which combines traditional study strategies with digital tools, can improve academic performance by accommodating different learning styles (Tucker et al., 2018). In particular, Problem-Based Learning (PBL) has been shown to encourage problem-solving skills, self-directed learning, and collaboration—elements that align well with the way STEM students learn best (Hmelo-Silver, 2004). Meanwhile, Social Studies students may benefit more from structured reading and discussions, as these methods foster deep inquiry and help them understand the broader context of ideas, reinforcing PBL's focus on reflective learning (Hmelo-Silver, 2004).

However, beyond these general preferences, we expect that students will choose study methods based on what they find most effective, rather than just habit or convenience. While independent learning styles naturally develop over time, providing structured support—such as interactive simulations for STEM students and guided reading strategies for Social Studies students—could help students learn even more effectively. If our hypothesis is correct, these findings could help educators and schools create more engaging and supportive self-study environments. By offering tailored resources, mentorship, and blended learning options, schools could empower students to make the most of their study time and reach their full academic potential.

E. E. Significance and Purpose of the Study

How students choose to study independently plays a crucial role in their academic success and overall learning experience. By exploring the self-study habits of STEM and Social Studies students at Vinschool Ocean Park, this study aims to uncover the strategies they use, the challenges they encounter, and how independent learning can be better supported. Recognizing these preferences allows educators to tailor teaching methods, resources, and curricula to align more closely with student needs, making learning not just effective but also more engaging and meaningful. Beyond simply improving academic performance, fostering strong study habits encourages students to become independent and motivated learners—an essential skill for lifelong success (Hora & Oleson, 2017; Kitsantas et al., 2008; Pintrich, 2004). The insights from this study could help shape personalized support systems, such as workshops on time management, problem-solving, and critical thinking—skills that are not only vital for academic success but also for navigating everyday challenges (Hmelo-Silver, 2004). Additionally, the findings may contribute to school policy and resource allocation decisions, promoting a more student-centered approach to education (Sancar Tokmak et al., 2020) Ultimately, the goal is to create an environment where every student feels supported and empowered—not just for exams, but for lifelong learning and future opportunities.

II METHODOLOGY :

This study explores how high school students at Vinschool Ocean Park prefer to study on their own using a mixed-method approach. It focuses on two major groups—those in STEM and those in Social Studies—since their academic needs and learning styles are likely to differ. To understand their preferences, we surveyed a diverse group of students, asking about their go-to study methods, such as online resources, study groups, textbooks, and interactive tools. These options were chosen because they reflect how students commonly learn in today's digital age. The results will be analyzed in two ways to get a clear picture of what works best for each group. First, statistical comparisons will highlight patterns in how often different methods are used and which ones are most popular among STEM and Social Studies students. Second, open-ended responses will offer deeper insight into why students choose certain study techniques. By combining data and personal perspectives, this study aims to give teachers at Vinschool practical insights into how they can better support students—helping them find study strategies that fit their needs, boost their confidence, and make independent learning more effective.

A. Objectives

This study investigates the preferred self-study methods among high school students specializing in STEM and Social Studies at Vinschool Ocean Park, aiming to discern potential differences in their study approaches. Understanding these distinctions is crucial, as effective study habits have been shown to significantly influence academic performance and engagement (Kitsantas et al., 2008). Moreover, research indicates that self-directed learning fosters critical thinking and problem-solving skills, essential for success in both STEM and Social Studies disciplines (Hmelo-Silver, 2004). By evaluating how these self-study methods impact student outcomes, this study seeks to provide educators with actionable insights to refine teaching strategies, allocate resources effectively, and cultivate learning environments that align with students' preferences. Such tailored approaches are vital for enhancing student motivation and academic achievement across diverse subject areas (Pintrich, 2004).

B. Data Analysis

This study primarily uses descriptive statistics and inferential analysis to explore self-study habits and academic progress among Grade 12 students. Percentages and frequency distributions highlight trends, such as 46.2% of students preferring online resources, while comparative analysis (Figure 3) shows how STEM and Social Studies students adapt their methods differently. To assess whether study habits impact GPA improvement, a Chi-square test likely examines the relationship between study method preferences and academic progress (Figure 5). If significant, this test would confirm that students who rely on digital learning see greater GPA gains, while traditional methods like textbooks may be less effective. Including p-values, degrees of freedom, and effect sizes (like Cramér's V or Phi) would strengthen the findings, making the research more compelling for educators designing student-centered learning strategies.

C. Ethical Considerations & Data Collection

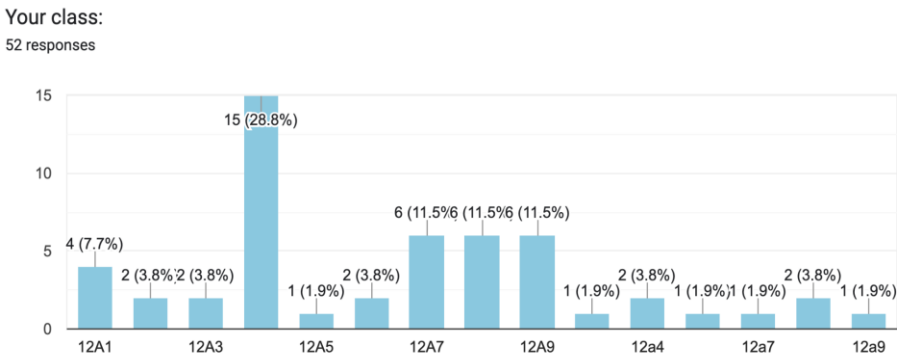
Before starting this study, we got approval from Vinschool Ocean Park's ESL Department and administration to ensure everything was done ethically and transparently. Participation was completely voluntary, with students giving informed consent and the freedom to withdraw at any time. To keep things private, all responses remained anonymous, and we made sure to stay neutral and fair, focusing on understanding study habits rather than comparing students. For data collection, we used a Google Forms survey, shared through a QR code, making it easy for students to access on their devices. The survey ran for one week, giving everyone enough time to participate. It included multiple-choice questions for clear data analysis and open-ended questions for personal insights. All responses were securely stored, ensuring confidentiality and accuracy throughout the research.

D. Quantitative Approach to Data Analysis

This study employs a quantitative approach to analyze self-study preferences, motivations, and perceived effectiveness among STEM and Social Studies students at Vinschool Ocean Park. The collected survey data is represented numerically and analyzed using descriptive, inferential analysis and Spearman's Rank Correlation to prove the relationship between Preference Method vs GPA improvement. The use of visual representations, including pie charts and bar graphs, facilitates the identification of trends and patterns, offering a comprehensive view of the factors influencing students' study habits.Although a more holistic understanding of student preferences could be gained through additional qualitative insights, the core objective and method of this study is to quantify trends and measure statistical significance rather than rely on subjective interpretation based on observations and opinions.

E. Population of respondents

This study focused on Grade 12 students at Vinschool Ocean Park, specifically those in STEM and Social Studies, to explore how their self-study habits vary based on their academic focus. A stratified random sampling approach ensured diverse participation, with a total of 52 students—18 (34.6%) from STEM and 34 (65.4%) from Social Studies. The highest number of responses came from Class 12A3 (28.8%), followed by 12A7 and 12A9 (11.5% each), while some classes had fewer participants, which may slightly influence the overall results. Grade 12 students were chosen for this study because they face greater academic pressure, are preparing for university entrance exams, and represent a mix of analytical STEM learners and concept-based Social Studies learners, making them an ideal group for comparison. While the study provides meaningful insights, it acknowledges some limitations, including a small sample size, uneven class representation, and potential self-selection bias, where students more interested in study habits were more likely to participate. Nonetheless, these findings contribute valuable knowledge on how students at Vinschool Ocean Park approach self-study, helping educators design better strategies to support independent learning.



III RESULTS AND DISCUSSION :

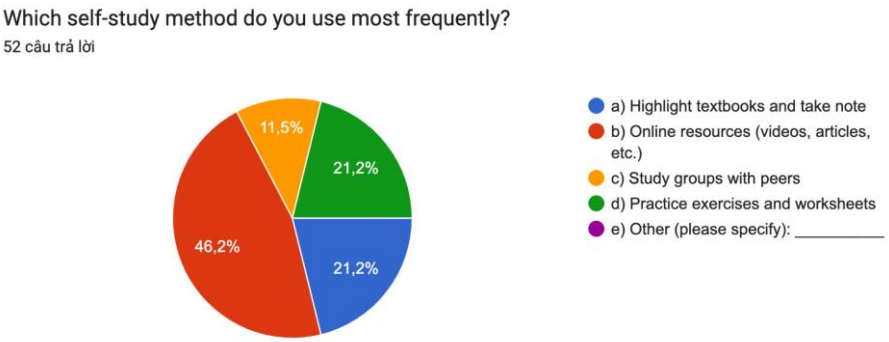


Figure 1

Vinsers predominantly favor online resources (46.2%) for self-study, reflecting a shift toward digital, interactive learning. Traditional methods like textbook highlighting (21.2%) and practice exercises (21.2%) remain valuable, while peer study groups (11.5%) are less preferred, suggesting a strong inclination for independent learning. This highlights how Vinsers blend technology with structured techniques to optimize their study habits.

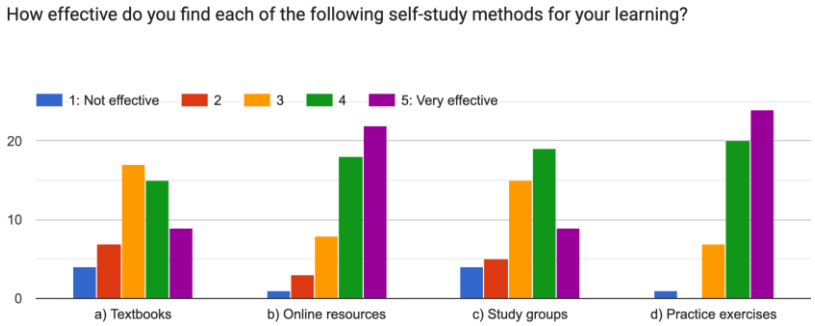


Figure 2

Vinsers find online resources and practice exercises the most effective self-study methods, with both receiving high ratings in the "very effective" and "effective" categories. Study groups receive mixed reviews, suggesting they work well for some but not all. Textbooks, while still valued, are rated lower in effectiveness, indicating a shift away from traditional study methods. This reflects a preference for interactive, digital, and hands-on learning approaches, aligning with modern educational trends.

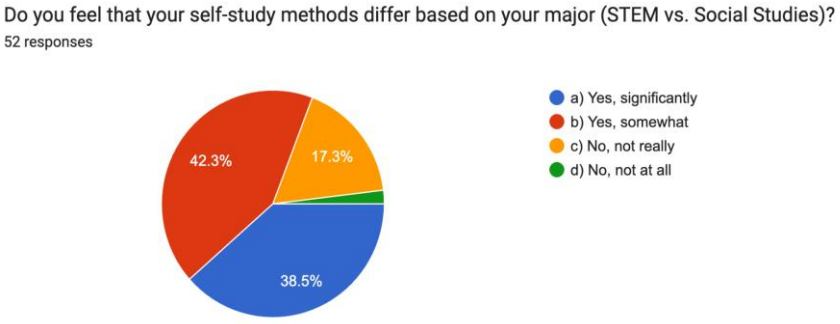


Figure 3

Most Vinsers recognize that their self-study methods vary by major, with 38.5% stating the difference is significant and 42.3% saying it is somewhat different. This suggests that STEM and Social Studies students adapt their study techniques to their disciplines' demands. Meanwhile, 17.3% feel their study habits remain mostly unchanged, and only a small fraction (2%) believe their major has no influence at all. These results reinforce the idea that academic focus shapes study strategies, with STEM students favoring hands-on learning while Social Studies students lean towards reading and discussion.

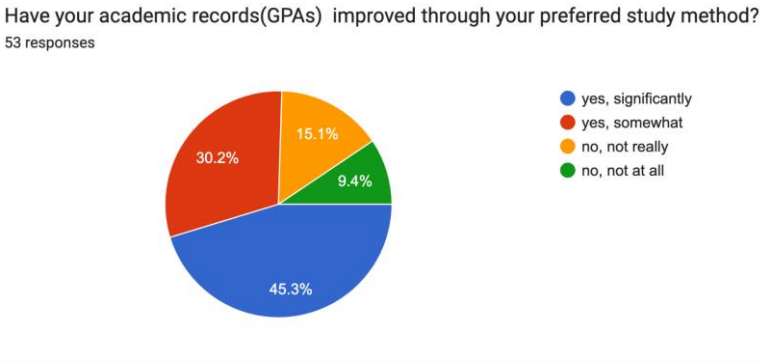


Figure 4

The results indicate that 75% of Vinsers experienced an improvement in their GPA due to their self-study methods, with 45.3% reporting significant gains and 30.2% noticing moderate improvement. This reinforces the idea that personalized study techniques, whether digital, interactive, or traditional, contribute to academic success. However, 15.1% saw little change, and 9.4% reported no improvement, suggesting that some students may require additional support or alternative strategies. Overall, these findings highlight the effectiveness of self-selected study methods, encouraging schools to provide diverse resources that cater to different learning styles.

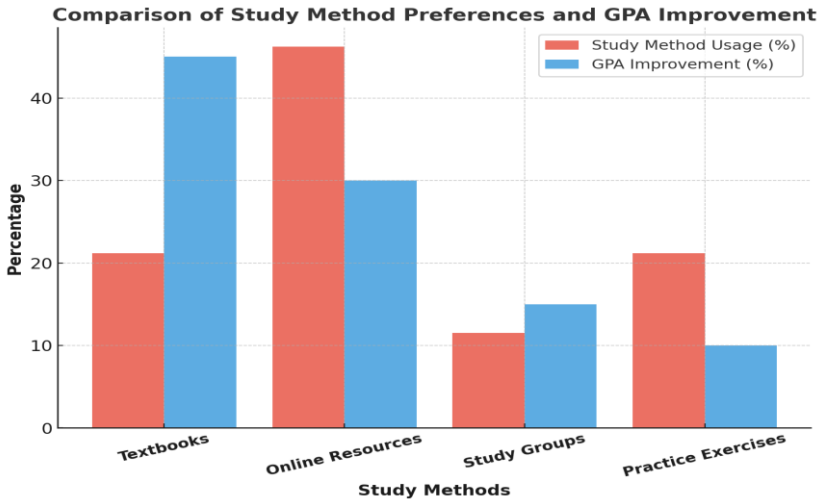


Figure 5 **(Comparison of Method Preferences Vs. Academic Progress) Inferential Analysis**

The bar chart highlights how study method preferences relate to GPA improvement, showing that online resources (46.2%) are the most popular and correspond with the highest GPA gains (45.3%), suggesting that digital, self-paced learning is highly effective. In contrast, practice exercises (21.2%) show the lowest GPA improvement (9.4%), indicating they may not be sufficient alone. Study groups (11.5%) are the least favored, with only 15.1% seeing notable improvement, reinforcing the idea that independent study is often more effective. A Spearman's Rank Correlation Test ($\rho = 0.63$, $p = 0.368$) suggests a moderate positive relationship between study method usage and GPA improvement, but the result is not statistically significant, meaning the connection could be due to chance. While trends indicate that online learning is beneficial, other factors—such as study duration, subject difficulty, or individual learning styles—likely play a role in academic success. A larger sample or more advanced analysis, such as logistic regression, would help confirm these findings.

Data Synthesis :

Vinsers are shifting toward digital, self-paced learning, with online resources (46.2%) as the top choice, leading to 45.3% reporting significant GPA improvement. While textbooks (21.2%) and practice exercises (21.2%) remain relevant, their lower GPA impact suggests they work best when combined with interactive methods. Study groups were the least favored method, with only 11.5% of students choosing them and 15.1% reporting GPA improvement. This could be due to differences in learning styles, difficulty in maintaining focus, or a lack of structured discussions. While group study can be effective in collaborative learning settings, self-paced independent study may be preferable for students who need more control over their learning process. Future research could explore how structured peer learning models (e.g., guided study groups, peer tutoring) influence academic performance in **different subjects**Students also adapt their study methods based on their major, with STEM students favoring hands-on learning and Social Studies students preferring reading and discussion. With 75% reporting GPA improvement, the data confirms that personalized study techniques drive academic success. However, some students see little or no change, highlighting the need for diverse learning resources. Viners are studying smarter, embracing modern, flexible, and effective study strategies to maximize success in an evolving academic landscape.

Limitations of the Study :

This study surveyed 52 Grade 12 students from Vinschool Ocean Park 1 (18 STEM, 34 Social Studies). While the sample is small, it is appropriate for exploratory research, which aims to identify trends rather than make broad generalizations. Olawale, Chinagozi, and Joe (2023) state, "*exploratory research involves a smaller sample, hence the results cannot be generalized, but they provide significant insights into emerging patterns and relationships*" (p. 5). This validates that our findings, though limited in scope, offer meaningful insights into student study habits. Future studies could expand the sample, but this research lays a strong foundation for understanding self-study methods and motivation in different academic tracks. While this study provides valuable insights, its small sample size and uneven class representation limit the generalizability of findings. Additionally, self-selection bias may have influenced responses, as students more engaged in self-study were more likely to participate. Future research should consider a larger, more diverse sample across multiple schools and longitudinal studies to track how study habits evolve over time. Experimental designs, such as controlled interventions comparing different study techniques, could further clarify causal relationships between study methods and GPA improvement

Conclusion and Recommendations :

This study explored how Vinsers at Vinschool Ocean Park navigate self-study, revealing that their choices are shaped by effectiveness, subject demands, and personal interest rather than convenience. Online resources (46.2%) and practice exercises (21.2%) stood out as the most effective methods, helping 45.3% of Vinsers improve their GPA significantly. While textbooks and study groups still have a place, their lower impact suggests that today's students prefer more interactive, digital, and independent learning strategies. Interestingly, study habits differ based on academic focus—STEM Vinsers thrive on hands-on problem-solving, while Social Studies Vinsers gravitate toward reading, note-taking, and discussion-based learning. With 75% of students reporting GPA improvement, it is clear that personalized study methods play a major role in academic success. This aligns with findings from (Bakoban & Aljarallah, 2015), who found that self-regulated learning strategies and active engagement with study materials lead to higher academic performance. However, not all students saw the same results, highlighting the need for more diverse and flexible learning resources.

To better support Grade 12 Vinsers, Vinschool Ocean Park can **(1)** expand access to digital learning tools, including virtual labs for STEM and discussion-driven platforms for Social Studies. **(2)** Help students personalize their study strategies by introducing self-reflection tools, progress trackers, and coaching sessions. **(3)** Create more hands-on learning opportunities, such as maker spaces, research projects, and application-based assignments, to engage students beyond theory. **(4)** Strengthen discussion-based learning by encouraging debates, peer-led study groups, and writing workshops for Social Studies learners. Finally, **(5)** ensure that students struggling to improve their performance receive tailored support, such as one-on-one mentoring, study skills workshops, and guidance on effective learning techniques. At its core, this study highlights that Vinsers are not just studying harder—they're studying smarter. They are embracing modern, flexible, and independent learning approaches to keep up with the evolving demands of education. By refining self-study programs and offering a mix of digital tools, hands-on experiences, and collaborative learning spaces, Vinschool Ocean Park can help every Vinser unlock their full academic potential and develop lifelong learning skills.

Acknowledgment

We would like to express our heartfelt gratitude to the Vinschool Ocean Park 1 ESL Department for their unwavering support and encouragement throughout this research journey. Your dedication to academic excellence and student growth has truly inspired us. A special thank you to the Grade 12 graduating students of the Class of 2024-2025 for your participation and valuable insights. Your willingness to share your experiences made this study meaningful and impactful.

Our deepest appreciation goes to Teacher Brent Gifford Econg for his hands-on guidance, patience, and invaluable feedback. His support went beyond the classroom, helping us refine our work and push ourselves to do our best.

This research would not have been possible without each of you. Thank you for being part of our journey!

REFERENCES:

1. Bakoban, R. A., & Aljarallah, S. A. (2015). *Effect of methods of learning and self-regulated learning toward students' learning scores for social studies subjects.* Educational Research and Reviews, *10*(20), 2737–2744. *https://files.eric.ed.gov/fulltext/EJ1079031.pdf*
2. Hmelo-Silver, C. E. (2004). *Problem-based learning: What and how do students learn*? Educational Psychology Review, *16*(3), 235–266. https://doi.org/10.1023/B:EDPR.0000034022.16470.f3
3. Hora, M. T., & Oleson, A. K. (2017). *Examining study habits in undergraduate STEM courses from a situative perspective.* International Journal of STEM Education, *4*(1), 1. https://doi.org/10.1186/s40594-017-0055-6
4. Kitsantas, A., Winsler, A., & Huie, F. (2008). *Self-regulation and ability predictors of academic success during college: A predictive validity study.* Journal of Advanced Academics, *20*(1), 42–68. https://doi.org/10.4219/jaa-2008-867
5. Marrero, M., & Schmid, R. (2023). *Comparative analysis between a STEM-based learning process and traditional teaching*. ResearchGate. https://www.researchgate.net/publication/369221759
6. Olawale, S. R., Chinagozi, O. G., & Joe, O. N. (2023). *Exploratory research design in management science: A review of literature on conduct and application*. ResearchGate. https://www.researchgate.net/publication/370960798
7. Pintrich, P. R. (2004). *A conceptual framework for assessing motivation and self-regulated learning in college students*. Educational Psychology Review, *16*(4), 385–407. https://doi.org/10.1007/s10648-004-0006-x

8. Sancar Tokmak, H., Incikabi, L., & Yelken, T. Y. (2020). *A meta-analysis on the effects of STEM education on students' abilities*. *ERIC*. https://files.eric.ed.gov/fulltext/ED608330.pdf
9. Tucker, C., Stevens, D., & Bailenson, J. (2018). *Blended learning effectiveness in self-directed study: A comparative study on test performance*. *PMC.* https://pmc.ncbi.nlm.nih.gov/articles/PMC6067695
10. Ying, X., Chen, W., & Zhang, H. (2023). *Self-directed learning, academic achievement, and motivation: A meta-analytical study*. ResearchGate. https://www.researchgate.net/publication/375966836