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Flipped Classroom as Strategy on Enhancing Student Engagement and Entrepreneurial Skills

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Abstract*—There has been a growing interest in the learner-centered and flexible learning approaches. As one of such, flipped classroom flips the instructions by having students explore the pre-class materials outside class time, providing more opportunities for interactive and collaborative activities during in class engagement. This study explored the use of the flipped classroom strategy as a strategy to enhancing student engagement and entrepreneurial skills among Grade 10 students. It focused on determining the level of flipped classroom implementation in terms of preparation of flipped subjects, technology engagement, and development of interactive activities; the level of student engagement in academic, social, and emotional aspects; and the level of students' entrepreneurial skills in business planning, financial literacy, and product designing. The study also examined the relationships between the flipped classroom strategy and student engagement, as well as between the flipped classroom strategy and students' entrepreneurial skills. A descriptive-correlational research design was employed. Data were gathered from 111 Grade 10 students using a researcher-made questionnaire and performance rubrics. The collected data were analyzed using mean, standard deviation, and Pearson correlation coefficient. The findings revealed that the flipped classroom strategy was implemented at a very high level, particularly in terms of preparation of learning materials, integration of technology, and use of interactive classroom activities. Students likewise demonstrated very high levels of academic, social, and emotional engagement. In addition, students' entrepreneurial skills in business planning, financial literacy, and product designing were found to be very highly developed. Further analysis showed that the flipped classroom strategy had a significant relationship with student engagement across all dimensions. However, a significant relationship with students' entrepreneurial skills was observed only in terms of financial literacy, while business planning and product designing did not show significant relationships. The flipped classroom strategy is significant in promoting student engagement; therefore, the first hypothesis is rejected. Additionally, the flipped classroom supports the development some entrepreneurial but not the business planning and product designing, thus the second hypothesis is partially accepted. Hence, it is concluded that the development of these entrepreneurial skills may require additional hands-on and experiential instructional strategies. Based on the findings, it is recommended that teachers continue to strengthen the implementation of the flipped classroom strategy through a well-structured pre-class material, effective technology integration, and interactive classroom activities while incorporating more experiential and project-based learning activities to further enhance students' entrepreneurial skills.*

***Keywords*—** *Entrepreneurial Skills, Flipped Classroom Strategy, Grade 10 Students, Student Engagement, Technology and Livelihood Education.*

I. Introduction

There is growing interest in active-learning strategies and "student-centered" approaches to meet the evolving needs of today's students. The flipped classroom model is one of the most widely-used of these strategies to provide opportunities for students to have discussions and hands-on learning experiences. In flipped classroom, the students interact with the learning materials at home and participate in collaborative and higher order thinking activities during in-person classes. (Akçayır & Akçayır, 2018). In this strategy, student engagement is crucial to achieve the desired learning outcome.

Student engagement is often categorized into three aspects of engagement like academic, social, and emotional. Academic engagement includes whether students are focused and persistent with regard to completing assigned tasks. Social engagement is comprised of how much students interact with their peers and teachers. Emotional engagement is comprised of students' interest in their learning, their motivation to learn, and their sense of belonging in the classroom (Van Alten et al., 2019). Aspects of active learning, such as the flipped classroom model, contribute to each of these types of engagement because they create opportunities for students to collaborate with both their classmates and teachers (Vargas-Madriz & Konishi, 2021).

Moreover, the development of entrepreneurial skills is influenced by student engagement. Students who participate in flipped classroom models are able to apply what they learned to real-world problems, rather than simply being passive recipients of information from lectures (Shih & Tsai, 2017). Students who are engaged in their learning are more likely to collaborate, reflect on their learning, and take ownership of their educational process.

Therefore, the flipped classroom model may be particularly useful in an entrepreneurship education context, where the ultimate goal is to assist students in developing the skills necessary to start new businesses and innovate. Learning through flipped and project-based approaches supports the development of an entrepreneurial skills in students by providing them with opportunities to engage in authentic tasks and problem-solving activities (Chen & Hsu, 2021).Furthermore, learning through these models supports the development of self-directed learning, teamwork and problem-solving skills that are fundamental to entrepreneurial success (Sun et al., 2023).

However, there are some obstacles associated with the implementation of the flipped classroom model. Some studies

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indicate that teachers must dedicate considerable amounts of time to preparing instructional materials, students do not always have equal access to technological resources, and teachers must design student-centered activities that encourage students to participate (Betihavas et al., 2016). Moreover, the effectiveness of the flipped classroom model depends on the amount of guidance provided to students and the presence of practical applications during instruction (Wu et al., 2025).

Thus, the purpose of this research is to examine the flipped classroom strategy and its relationship student engagement and entrepreneurial skills of Grade 10 students in accordance with the K-12 curriculum.

1.1 Statement of the Problem

Problem/s which were addressed by the research

The purpose of this research was to examine the flipped classroom approach's efficacy in improving the entrepreneurial and engagement abilities of Grade 10 pupils enrolled in the K-12 Curriculum:

Specifically, it sought to answer the following questions:

1. What is the level of flipped classroom strategy in terms of:
   1.1. preparation of flipped subjects;
   1.2. technology engagement; and
   1.3. development of interactive activities?
2. What is the level of student engagement in terms:
   2.1. academic engagement;
   2.2. social engagement; and
   2.3. emotional engagement?
3. What is the level of students' entrepreneurial skills in terms of:
   3.1. business planning;
   3.2. financial literacy; and
   3.3. product designing?
4. Is there a significant relationship between the flipped classroom strategy and student engagement?
5. Is there a significant relationship between the flipped classroom strategy and students' entrepreneurial skills?

II. Methodology

A descriptive-correlational research design was employed. Data were gathered from 111 Grade 10 students using a researcher-made questionnaire and performance rubrics. The collected data were analyzed using mean, standard deviation, and Pearson correlation coefficient.

III. Results and Discussion

This part discusses the results that were yielded from the treatment of the data that was gathered in this study. The following tabular presentations and discussions further analyze the relationship of employing flipped classroom approach strategy and student engagement and entrepreneurial skills development.

Level of Flipped Classroom Strategy

In this study, the level of Flipped Classroom Strategy was described in terms of preparation of flipped subjects, technology engagement, and development of interactive activities and was determined by mean and standard deviation. The following tables discuss students' evaluation on the use of flipped classroom strategy to enhance the teaching and learning process.

Table 1 presents the level of flipped classroom strategy in terms of preparation of flipped subjects.

As presented, the use of flipped classroom preparation techniques helped improve students' readiness to apply the lesson during class and prepared them to participate in class activities after reviewing the pre-assigned materials. The provision of clear learning materials before the class session and the use of pre-class videos or readings also helped students understand the lesson better. In addition, assigning preparation tasks such as readings and videos that are manageable and not overwhelming contributed to students' preparedness for in-class activities.

Table 1. Level of Flipped Classroom Strategy in terms of Preparation of Flipped Subjects

Statement The teacher…	Mean	SD	Remarks
…provides clear learning materials to study before the class session;	4.35	0.74	Strongly Agree
…uses pre-class videos or readings that help students understand the lesson better;	4.49	0.72	Strongly Agree
…prepares students to participate in class discussions after reviewing the pre-assigned materials;	4.43	0.68	Strongly Agree
…assigns preparation tasks such as the readings, videos, and modules that are manageable and not overwhelming; and	4.46	0.64	Strongly Agree
…uses flipped classroom preparation techniques that improve student readiness to apply the lesson during class.	4.22	0.81	Strongly Agree
Weighted Mean	4.39		
SD	0.73		
Verbal Interpretation	Very High		

The level of flipped classroom strategy in terms of preparation of flipped subjects received the overall weighted mean of 4.39 with a standard deviation of 0.73, verbally interpreted as Very High. This indicates students' strong agreement that the teachers' preparation of flipped classroom materials supported their readiness, understanding, and participation during class.

In summary, the results imply that teachers were able to deliver lessons better by applying flipped classroom strategy through well-prepared pre-class materials that support student learning.

Table 2 presents the level of flipped classroom strategy in terms of technology engagement.

As presented, the use of technology such as videos, applications, and online quizzes made learning more interesting and helped students review and revisit lessons at their own pace. Ensuring online platforms and digital tools used in a flipped classroom activities were easily accessible also supported students' participation in class activities. Moreover, building students' confidence in using digital tools and minimizing difficulties encountered when using technology contributed to a more effective flipped classroom experience.

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The level of flipped classroom strategy in terms of technology engagement received the overall weighted mean of 4.49 with a standard deviation of 0.71, verbally interpreted as Very High. This indicates that students strongly agreed that the use of technology in the flipped classroom enhance their engagement in the lesson.

Table 2. Level of Flipped Classroom Strategy in terms of Technology Engagement

Statement	Mean	SD	Remarks
The teacher…			
…makes sure online platforms or tools used in flipped classroom activities can be easily accessed;	4.49	0.72	Strongly Agree
…uses technology, such as videos, applications, and online quizzes, to make learning more interesting;	4.54	0.68	Strongly Agree
…builds confidence in students to use the digital tools required in the flipped classroom;	4.43	0.59	Strongly Agree
…uses technology to help students review and revisit lessons at their own pace; and	4.62	0.71	Strongly Agree
…minimizes difficulties when using technology for flipped classroom activities.	4.35	0.78	Strongly Agree
Weighted Mean	4.49		
SD	0.71		
Verbal Interpretation	Very High		

In summary, the results imply that the effective integration of technology in the flipped classroom strategy helped facilitate learning by making lessons more accessible, interactive, and flexible for students.

Table 3 presents the level of flipped classroom strategy in terms of development of interactive activities.
As presented, the teacher encouraged active participation in classroom activities after students were prepared by the pre-class materials. The use of group activities and discussions helped students understand the lesson better, while the incorporation of hands-on activities increased student engagement. In addition, interactive classroom activities supported the development of students' critical thinking, creativity, problem solving, and collaboration skills.

Table 3. Level of Flipped Classroom Strategy in terms of Development of Interactive Activities

Statement	Mean	SD	Remarks
The teacher…			
…encourages active participation in classroom activities after students prepare with pre-class materials;	4.51	0.60	Strongly Agree
…uses group activities and discussions to help students understand the lesson better;	4.57	0.55	Strongly Agree
…designs interactive tasks in class that encourage students to think critically and creatively;	4.38	0.78	Strongly Agree
…incorporates hands-on activities related to the lesson to increase student engagement; and	4.46	0.60	Strongly Agree
…uses interactive classroom activities that improve student problem-solving and collaboration skills.	4.51	0.64	Strongly Agree
Weighted Mean	4.49		
SD	0.64		
Verbal Interpretation	Very High		

The level of flipped classroom strategy in terms of the development of interactive activities received the overall weighted mean of 4.49 with a standard deviation of 0.64, verbally interpreted as Very High. This indicates that students strongly agreed that interactive activities in the flipped classroom effectively enhanced their engagement and participation during class.

In summary, the results imply that the use of well-designed interactive activities in the flipped classroom strategy helped create an active learning environment that supported student participation and skill development.

Level of Student Engagement

The degree of student engagement was assessed in this study using mean and standard deviation, with the level being defined by preparation of academic, social, and emotional engagement. The following tables discuss student's evaluation on their level engagement in the flipped classroom.

Table 4. Level of Student Engagement in terms of Academic Engagement

Statement	Mean	SD	Remarks
The student…			
…pays attention and focus during class activities;	4.54	0.60	Strongly Agree
…completes all assigned tasks and requirements on time;	4.49	0.68	Strongly Agree
…reviews and studies the lessons even outside of class hours;	4.43	0.75	Strongly Agree
…participates in class discussions and group activities; and	4.41	0.68	Strongly Agree
…looks for ways to improve their academic performance.	4.54	0.60	Strongly Agree
Weighted Mean	4.48		
SD	0.67		
Verbal Interpretation	Very Highly Engaged		

Table 4 presents the level of student engagement in terms of academic engagement. As presented, students paid attention and focused during class activities, completed assigned tasks and requirements on time, and reviewed lessons even outside class hours. Students also actively participated in class discussions and group activities and showed initiative in finding ways to improve their academic performance. These behaviors show that students were actively involved in their learning tasks and responsibilities.

The level of student engagement in terms of academic engagement received the overall weighted mean of 4.48 with a standard deviation of 0.67, verbally interpreted as Very Highly Engaged. This indicates that students consistently demonstrated positive academic behaviors such as focus, persistence, participation, and responsibility toward their learning.

In summary, the results imply that students exhibit high level of academic engagement, suggesting that flipped classroom activities and instructional strategies effectively supported their active involvement in the learning process.

Table 5 presents the level of student engagement in terms of social engagement.

As presented, students enjoyed working with their classmates during group activities and felt comfortable sharing their ideas and opinions in class. Students also demonstrated cooperation in achieving common learning goals, showed respect by listening to the ideas of their classmates, and built

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positive relationships through collaborative learning activities. The level of student engagement in terms of social engagement received the overall weighted mean of 4.37 with a standard deviation of 0.76, verbally interpreted as Very Highly Engaged. This indicates that students consistently demonstrated positive social behaviors that promote collaboration, respect, and positive peer relationships.

Table 5. Level of Student Engagement in terms of Social Engagement

Statement	Mean	SD	Remarks
The student…			
...enjoys working with their classmates during group activities;	4.35	0.71	Strongly Agree
…feels comfortable sharing their ideas and opinions in class;	4.35	0.74	Strongly Agree
…cooperates with others to achieve common learning goals;	4.24	0.85	Strongly Agree
…respects and listens to the ideas of their classmates; and	4.49	0.72	Strongly Agree
…builds positive relationships with their classmates through collaborative learning.	4.43	0.75	Strongly Agree
Weighted Mean	4.37		
SD	0.76		
Verbal Interpretation	Very Highly Engaged		

In summary, the results imply that students were highly socially engaged, suggesting that flipped classroom activities effectively fostered cooperation, communication, and positive peer relationship.

Table 6 presents the level of student engagement in terms of emotional engagement.

As presented, students felt excited and motivated to attend their classes and experienced as sense of pride whenever they accomplished classroom tasks. Students remained positive even when lesson were challenging and felt supported by their teacher and classmates during learning activities. Moreover, students expressed enjoyment of the overall learning experience in their classes. These responses mean that students developed positive emotions toward learning and classroom participation.

Table 6. Level of Student Engagement in terms of Emotional Engagement

Statement	Mean	SD	Remarks
The student…			
...feels excited and motivated to attend their classes;	4.27	0.72	Strongly Agree
...feels proud whenever they accomplish class;	4.59	0.63	Strongly Agree
...remains positive even when the lessons are challenging;	4.57	0.64	Strongly Agree
...feels supported by their teachers and classmates during learning activities; and	4.46	0.68	Strongly Agree
...enjoys the overall learning experience in their class.	4.62	0.59	Strongly Agree
Weighted Mean	4.50		
SD	0.67		
Verbal Interpretation	Very Highly Engaged		

The level of student engagement in terms of emotional engagement received the overall weighted mean of 4.50 with a standard deviation of 0.67, verbally interpreted as Very Highly Engaged. This indicates that students consistently demonstrated positive emotional responses such as motivation, confidence, enjoyment, and sense of support during the learning process in the flipped classroom.

In summary, the results imply that students exhibited a high level of emotional engagement, suggesting that the learning environment effectively fostered motivation, positive attitudes, and emotional support.

Level of Students' Entrepreneurial Skills

In this study, the level of students' Entrepreneurial Skills were described in terms of business planning, financial literacy, and product designing and were determined by mean and standard deviation using the scores derived through the rubrics. The following tables discuss teacher's evaluation of students' entrepreneurial skills developed in a flipped classroom setup as demonstrated in their business plan.

Table 7. Level of Students' Entrepreneurial Skills in terms of Business Planning

Criteria	Mean	SD	Remarks
Targeting Customer Analysis	4.86	0.34	Strongly Agree
Marketing and Sales Strategy	3.84	0.64	Agree
Production and Operations Plan	500	0.00	Strongly Agree
Management Team and Structure	5.00	0.00	Strongly Agree
Executive Summary	4.43	0.72	Strongly Agree
Weighted Mean	4.63		
SD	0.64		
Verbal Interpretation	Very Highly Developed		

Table 7 presents the level of students' entrepreneurial skills in terms of business planning.

As presented, students demonstrated strong competencies across the different components of business planning. In Target Customer Analysis got a mean of 4.86, students were able to accurately identify their target customers and explain the motivations behind why these customers would purchase the product. This suggests that learners were able to analyze potential markets and understand consumer needs, which is a critical aspect of developing a viable business concept.

Marketing and Sales Strategy got 3.84 mean which indicates that students were able to propose strategies for selling their products, including ideas related to pricing and distribution. Although the mean indicates agreement rather than the highest level of performance, the results suggest that students were still able to present reasonable marketing plans, though some aspects may require further elaboration.

Students obtained the highest possible mean in Production and Operations Plan which is 5.00, indicating that they were able to clearly explain the production process, materials needed, and operational procedures involved in producing the product. This reflects their ability to organize the technical aspects of running a food processing business.

Similarly, Management Team and Structure also received a perfect mean of 5:00, which indicates that students were able to clearly define the roles and responsibilities of each team member involved in the business. This demonstrates their understanding of organizational structure and teamwork within entrepreneurial activities. Meanwhile, the Executive Summary mean of 4.43 suggests that students were able to provide a clear overview of the business, including its purpose

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and unique value to customers. The executive summaries generally summarized the business concepts effectively, though some outputs may have omitted minor details.

Overall, the level of students' entrepreneurial skills in terms of business planning obtained a weighted mean of 4.63 with a standard deviation of 0.64, verbally interpreted as Very Highly Developed. This indicates that students were able to organize, plan, and present their business ideas systematically through the different components of a business plan.

In summary, the results show that students were able to develop business planning skills effectively, suggesting that the flipped classroom learning activities provided meaningful opportunities for them to practice entrepreneurial thinking, decision-making, and strategic planning.

Table 8 presents the level of students' entrepreneurial skills in terms of financial literacy.

As presented, students exhibited strong abilities in applying financial concepts necessary for starting and managing a business. The initial Investment Assessment got a mean of 5.00, indicating that students were able to accurately estimate the costs required to start the business, including materials, equipment, and other operational expenses. This suggests that learners could identify and calculate the financial resources needed for business startup. Similarly, Revenue and Expenses Projections has the same mean of 5.00 which implies that students were able to present realistic estimates of expected earnings and operational costs. These projections demonstrate students' ability to analyze potential profits and anticipate financial outcomes of the business.

Table 8. Level of Students' Entrepreneurial Skills in terms of Financial Literacy

Criteria	Mean	SD	Remarks
Initial Investment Assessment	5.00	0.00	Strongly Agree
Revenue and Expenses Projections	5.00	0.00	Strongly Agree
Pricing Strategy and Analysis	4.86	0.34	Strongly Agree
Funding Acquisition Plan	4.59	0.49	Strongly Agree
Financial Resource Management	4.05	0.77	Agree
Weighted Mean	4.70		
SD	0.56		
Verbal Interpretation	Very Highly Developed		

Pricing Strategy and Analysis received a mean of 4.86 suggesting that students were able to explain how the selling price of the product was determined to ensure both profitability and competitiveness in the market. This reflects their understanding of the relationship between cost, pricing, and business sustainability.

Funding Acquisition Plan got a mean of 4.59 which indicates that students were able to identify possible sources of capital to support the business startup, such as personal savings or other funding sources. This indicates that students were able to consider practical strategies for obtaining financial resources.

Meanwhile, Financial Resource Management received the lowest mean of 4.05 among the criteria, though it was still interpreted as Agree. This criterion refers to how the business plans to allocate and manage financial resources effectively. While students demonstrated competence in this aspect, the result suggests that further improvement may be needed in planning how financial resources will be monitored and utilized. Generally, the level of students' entrepreneurial skills in terms of financial literacy obtained a weighted mean of 4.70 with a standard deviation of 0.56, verbally interpreted as Very Highly Developed. This indicates that students were able to apply financial knowledge and concepts effectively when planning their business operations.

In summary, the findings show that the flipped classroom approach helped students develop financial literacy by allowing them to engage in practical financial planning tasks related to entrepreneurship.

Table 9 presents the level of students' entrepreneurial skills in terms of product designing.

As presented, the students demonstrated strong abilities in conceptualizing and developing their food products. Product Description and Features received 4.48 mean which implies that students were able to clearly describe their food products and highlight the features that make them appealing to potential customers. This suggests that learners were able to communicate the value and attractiveness of their products.

Manufacturing Process and Protocol's mean of 4.76 indicates that students were able to explain the production process, including the steps involved and the procedures needed to ensure safe and consistent production. This reflects their understanding of the operational and technical aspects of food product development.

Table 9. Level of Students' Entrepreneurial Skills in terms of Product Designing

Criteria	Mean	SD	Remarks
Product Description and Features	4.48	0.61	Strongly Agree
Manufacturing Process and Protocol	4.76	0.43	Strongly Agree
Packaging and Leveling Design	4.49	0.59	Strongly Agree
Quality Assurance and Control	4.40	0.66	Strongly Agree
Innovation	4.65	0.53	Strongly Agree
Weighted Mean	4.56		
SD	0.63		
Verbal Interpretation	Very Highly Developed		

Students also demonstrated competence in Packaging and Labeling Design with a mean of 4.49, which involves presenting ideas for product packaging and labeling that are both informative and appealing to consumers. The results indicate that students were able to consider both marketing appeal and product presentation.

Quality Assurance and Control received a mean of 4.40 which indicates that students were able to explain how their products would be tested and monitored to ensure that they meet quality standards. This shows that students recognize the importance of maintaining product quality and safety in food processing businesses.

Lastly, 6.65 mean for Innovation indicates that students were able to present ideas that show originality or uniqueness in their product concepts. This suggests that learners were able to apply creativity and innovative thinking when developing their business ideas. Overall, the level of students' entrepreneurial skills in terms of product designing obtained a weighted mean of 4.56 with a standard deviation of 0.63, verbally interpreted as Very Highly Developed. This indicates that students were able to apply creativity, technical

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knowledge, and innovative thinking in designing viable products.

In summary, the findings imply that the flipped classroom learning activities provided opportunities for students to engage in hands-on tasks that enhanced their creativity, product development skills, and practical application of entrepreneurial concepts.

Significant Relationship Between the Flipped Classroom Strategy and Student Engagement

In this study, the significant relationship between the flipped classroom strategy and student engagement was analyzed applying Pearson Correlation Coefficient.

Table 10 presents the significant relationship between the flipped classroom strategy and student engagement.
As presented, the flipped classroom strategy described in terms of preparation of flipped subjects, technology engagement, and development of interactive activities demonstrated significant correlations with the dimensions of student engagement, namely academic, social, and emotional engagement, as supported by the obtained p-values which are less than the 0.05 level of significance.

Table 10. Significant Relationship Between the Flipped Classroom Strategy and Student Engagement

Flipped Classroom Strategy		Academic engagement	Social engagement	Emotional engagement
Preparation of flipped subjects	Pearson Correlation	.443*	.536*	.448*
	Sig. (2-tailed)	.000	.000	.000
	N	111	111	111
Technology engagement	Pearson Correlation	.387*	.464*	.347*
	Sig. (2-tailed)	.000	.000	.000
	N	111	111	111
Development of interactive activities	Pearson Correlation	.289*	.485*	.374*
	Sig. (2-tailed)	.013	.000	.000
	N	111	111	111

Note * p < .05

This indicates that the implementation of flipped classroom practices is associated with increased student involvement in learning activities. Students who are exposed to well-prepared flipped materials, meaningful technology integration, and interactive classroom activities tend to demonstrate higher participation in academic tasks, improved collaboration with peers, and stronger emotional connection toward the learning process. These findings suggest that the flipped classroom environment provides opportunities for students to actively engage in discussions, cooperative learning, and reflective thinking during classroom sessions.

In summary, the results imply that the flipped classroom strategy plays an important role in promoting student engagement in various aspects of learning. The availability of pre-class instructional materials allows students to prepare for lessons in advance, while interactive classroom activities encourage deeper participation and collaboration among learners.

Significant Relationship Between the Flipped Classroom Strategy and Students' Entrepreneurial Skills

In this study, the significant relationship between the Flipped Classroom Strategy and Students' Entrepreneurial Skills was analyzed applying Pearson Correlation Coefficient using Minitab 14.

Table 11 presents the correlation between the flipped classroom strategy and student engagement. The results include Pearson correlation coefficients (r-values), p-values, and sample size (N=111) for each relationship.

As presented, there is a strong correlation between the use of a flipped classroom approach and the entrepreneurial skills students demonstrate in terms of financial literacy. Therefore, the results show that using flipped classroom approaches are significantly related to improving students' financial literacy skills. These indicate that when students are provided with pre-class materials such as video and reading assignments, along with technology-supported learning and interactive in-class activities, they have many more opportunities to evaluate financial information, discuss financial concepts and make financial decisions during entrepreneurial tasks. When students attend a flipped classroom, they enter the classroom having been previously exposed to the theoretical concepts, therefore class time can then be used to perform practical activities such as budgeting exercises, cost analyses and financial planning tasks. These activities will increase students' knowledge of financial management in an entrepreneurial context.

Table 11. Significant Relationship Between the Flipped Classroom Strategy and Students' Entrepreneurial Skills

Flipped Classroom Strategy		Business planning	Financial literacy	Product designing
Preparation of flipped subjects	Pearson Correlation	.159	.446*	.200
	Sig. (2-tailed)	.176	.000	.088
	N	111	111	111
Technology engagement	Pearson Correlation	.107	.414*	.182
	Sig. (2-tailed)	.366	.000	.120
	N	111	111	111
Development of interactive activities	Pearson Correlation	.061	.277*	.112
	Sig. (2-tailed)	.604	.017	.342
	N	111	111	111

Note * p < .05

IV. Conclusion and Recommendations

A significant relationship existed between the flipped classroom strategy and student engagement. Thus, the first null hypothesis was rejected. Thus, it is concluded that the use of pre-class materials, proper technology utilization, and engaging activities during the class time, contribute to student participation, collaboration, and positive emotional attachment to learning.

The flipped classroom strategy showed a significant relationship only with students' financial literacy, and not with business planning and product designing. Thus, the second null hypothesis was partially accepted. This means that while the flipped classroom strategy is effective in enhancing financial literacy, the development of business planning and product designing skills may require additional hands-on and experiential instructional strategies.

In the formulated conclusions from the findings, it was recommended that:

School leaders are recommended to continue providing sufficient technical equipment, train teachers on how to implement the flipped classroom model and provide additional time for students to be able to work collaboratively and interactively.

Teachers may continue to utilize and strengthen the flipped classroom strategy by providing well-structured pre-class learning materials, effectively integrating technology, and designing interactive classroom activities to foster student engagement. To further enhance students' entrepreneurial skills, teachers may incorporate more authentic, hands-on, and project-based learning tasks that focus on business planning and product designing alongside financial literacy activities.

Parents may encourage their children to apply entrepreneurial skills in real life by supporting them with their home environment and communicating with teachers. They may also ensure that pre-class work is completed and that a conducive learning environment exists at home.

Students may actively engage in flipped classroom activities by maximizing the use of pre-class learning materials and participating meaningfully in classroom discussions and interactive tasks. Students are encouraged to apply learned concepts not only in financial literacy activities but also in business planning and product designing tasks to further develop their entrepreneurial competencies.

Future researchers may conduct similar studies using experimental or mixed-methods research designs to further examine the effects of the flipped classroom strategy on entrepreneurial skills. Future studies may also explore longer implementation periods or additional instructional strategies that could strengthen students' business planning and product designing skills.

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