

Development and Evaluation of Self Learning Kit in TLE for Student Athletes

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Bryan Christian S. Albarina

Graduate School, State University of Northern Negros, Philippines

Abstract:

This experimental research design aimed to develop and evaluate a Self-Learning Kit (SLK) for Student Athletes in TLE in the Schools Division of Escalante City. This study utilizes one-group pretest and post-test and a standardized questionnaire was implemented in gathering the data. The data were analyzed using frequency and percentage to determine the significant difference between the pretest and posttest of the student athletes. The study revealed that there is a significant increase in the academic performance of grade 6 athletes from their pre-test and post-test. With regards to the findings, conclusions and limitations of the study, the researchers recommend the use of the developed Self Learning Kit to catering the intellectual needs of the student - athletes and their unique circumstances in the field of academic and sports.

Keywords: Experimental, Pre – Test, Post - Test, Self-Learning Kit, Student - Athletes

Introduction:

Balancing academic endeavors with participation in sports presents a multifaceted challenge for students, requiring adept time management, prioritization, and resilience. Research indicates that students engaged in sports often face heightened pressures to excel academically and athletically, leading to increased stress levels and potential conflicts between commitment and 394 enrolled student-athletes in grade 6 pupils in the Schools Division of Escalante City are faced with this struggle. A study by Larson et al. (2021) found that student-athletes commonly report fatigue and time constraints due to the demands of practices, games, and travel, which can impede their capacity to spend much time complying with their academic work. Moreover, academic responsibilities such as exams, assignments, and group projects can clash with sports events, leading to dilemmas regarding allocating time and prioritizing tasks effectively. This struggle to balance academic and athletic commitments can have significant implications for student well-being, academic performance, and overall success in their study, especially in TLE.

Moreover, According to Alcober and Balisi (2018), the lack of access to learning resources in rural and underfunded schools in the Philippines has led to a significant achievement gap. A self-learning kit can provide a standardized resource that ensures all students, regardless of location, access quality materials that can enhance their skills. In another study by Espino and Padilla (2020), it was found that self-learning kits reduce teacher workload in large, resource-constrained classrooms. For TLE, teachers can use kits to guide students in learning while allowing them to focus on more complex tasks and individualized support.

Objective of the Study

This research aimed to create a customized learning tool to help Grade 6 student-athletes elevate their academic performance. This research explicitly intends to respond to the following questions: What is the level of acceptability of the designed self-learning kit in TLE in terms of: content, format, organization and presentation, accuracy and up to datedness. What is the level of academic performance of student-athletes in pre-test and post-tests? Is there a significant difference in the academic performance of student-athletes in pre-test and post-test?

Methodology:

Research Design

This study will conduct an experimental research. By utilizing this design, the one-group pre-test and post-test will be used extensively to investigate the effect of the development and evaluation of self-learning kit (SLK) strategies in technical and livelihood education (TLE) for student-athletes.

Respondents of the Study

Subjects in this study will be drawn from the Schools Division of Escalante City, consisting of student-athletes enrolled in Grade 6 pupils in the academic year 2023 – 2024. Purposive sampling was utilized to ensure a diverse representation of student-athletes across different sports and academic backgrounds.

Research Instrument

A. Self-Learning Kit

The tool is a module that consists of activities designed to improve student-athletes' academic performance.

On Materials Development

The researcher implemented Johnson's System of Material Design Model. The Model involved three phases: the design phase, the development phase, and the evaluating phase.

I. Design Phase

a. Survey of available books and Reading Materials

The researcher spent his time surveying, reading, and securing literature to be utilized as resources for crafting the Self Learning Kit. Additionally, resources from other online databases were used. For this purpose, it helps identify gaps, trends, and accessibility in literature and educational resources. It provides valuable insights into the quality, variety, and relevance of books available in libraries, schools, and communities. This research can aid in improving alternative delivery programs, informing curriculum development, and ensuring that diverse perspectives are represented in reading materials. Additionally, it helps policymakers, educators, and publishers make informed decisions about book distribution and acquisition, ultimately enhancing the learning experience for different audiences.

b. Selection of Materials

The researcher included teacher-made exercises while other activities were adopted from the internet and modified to suit the unique needs of the student-athletes. The prepared materials followed the standardized format of DepEd. Following the standardized format of the Department of Education (DepEd) is important because it ensures consistency, clarity, and quality in educational materials, lesson plans, and assessments. A standardized format promotes uniformity across schools, making it easier for teachers, students, and stakeholders to follow and understand the curriculum. It also aligns teaching strategies with national education goals, ensuring that learning objectives are met efficiently. Additionally, adherence to DepEd's format enhances the credibility and reliability of instructional materials, facilitates effective monitoring and evaluation, and supports continuity in education, especially in distance or modular learning setups.

c. Preparing the Final Guide or Framework

The module's content was based on the Essential Learning Competency or MELCS. Following the Essential Learning Competencies (MELCs) as a framework is important because it ensures that teaching and learning focus on the most critical skills and knowledge students need to acquire. MELCs help streamline the curriculum, prioritizing essential topics that promote mastery and long-term understanding. By following this framework, educators can provide structured, relevant, high-quality instruction that aligns with national educational standards. It also ensures consistency across different schools and learning environments, making education more equitable. Additionally, MELCs help in efficient lesson planning, assessment, and resource allocation, ultimately improving student outcomes and overall educational effectiveness.

II. Development Phase

a. Determining the Format

The proponent carefully determined the module's format by thoroughly reviewing various instructional materials and educational resources. This involved analyzing different teaching aids, textbooks, and online references to identify best practices in content organization, layout, and instructional design. Websites on the internet provided access to modern educational frameworks, multimedia integration, and interactive learning strategies that could enhance the module's effectiveness. Print resources, such as books and academic journals, were also examined to ensure the content was well-structured and aligned with pedagogical standards. Additionally, the proponent considered ratings and feedback from existing materials to assess their effectiveness and relevance to learners. Most importantly, the module was developed under DepEd's learning resources criteria, ensuring alignment with national education standards, curriculum requirements, and student needs. This comprehensive approach allowed the proponent to create a well-structured, engaging, and high-quality learning module that meets academic and practical objectives.

b. Development of Activities/Exercises

The development of activities and exercises was carefully designed based on the topics covered in the Self-Learning Kit (SLK) for Technology and Livelihood Education (TLE) 6. This process ensures that all exercises align with the competencies and learning objectives outlined in the curriculum. The researcher created a Table of Specifications (TOS) to systematically organize the exercises, ensuring a balanced distribution of questions that assess different cognitive levels, such as knowledge, comprehension, application, and critical thinking. The TOS serves as a guide to ensure that the exercises effectively measure students' understanding of key concepts. Additionally, the researcher provided a Key Answers section to support teachers and learners in evaluating responses accurately. This structured approach enhances the Self-Learning Kit's quality, reliability, and effectiveness in reinforcing students' learning experiences.

6. The researcher prepares the Table of Specifications for the exercises in the kit and the Key answers.

III. Evaluation Phase

The produced modules underwent rigorous testing and validation to ensure their quality, effectiveness, and alignment with educational standards. Identified validators, such as subject matter experts, teachers, and curriculum specialists, assessed the modules using an evaluation rating sheet for print resources. This rating sheet helped measure various aspects of the module, including content accuracy, relevance, clarity, instructional design, and overall usability.

To ensure a systematic approach in conducting the field testing, the following phases were carried out:

1. Initial Review and Expert Validation

Before implementation, the self-learning kit underwent a thorough review process conducted by subject matter experts to ensure their content accuracy, alignment with learning competencies, and overall instructional quality. These experts, who possess in-depth knowledge and experience in the field, carefully evaluated the modules to verify that the information presented was correct, relevant, and current.

Additionally, the review process focused on ensuring that the modules were aligned with the prescribed learning competencies, ensuring that the content met the required academic standards and learning objectives for TLE VI. This alignment is crucial to guarantee that students acquire the knowledge and skills outlined in the curriculum.

Furthermore, the instructional quality of the modules was assessed, taking into account factors such as clarity of explanations, logical sequencing of topics, effectiveness of instructional strategies, and engagement level of the learning materials. The experts provided constructive feedback on areas that needed improvement, such as refining explanations, enhancing activities, or incorporating more interactive elements to support diverse learning styles. Based on their recommendations, necessary revisions were made to enhance the effectiveness and usability of the modules before proceeding to the next phase. This rigorous validation ensured that the self-learning materials were well-structured, comprehensive, and capable of supporting student-athletes in their independent learning journey.

2. Small-Scale Pilot Testing

To assess the initial effectiveness of the self-learning module, a select group of students and teachers participated in a controlled testing environment. This setting allowed for close observation of how learners interacted with the materials, providing valuable insights into their usability and instructional impact.

During this phase, the proponent closely monitored student engagement, noting how easily they could navigate the module, follow instructions, and comprehend the presented concepts. Teachers also played a crucial role by facilitating discussions, guiding students when necessary, and providing professional insights on the module's instructional design.

The evaluation focused on three key aspects:

Clarity – Assessing whether the explanations, instructions, and examples were clear and understandable to students. Any sections that caused confusion or misinterpretation were identified for revision.

Difficulty Level – Determining whether the module's content was appropriately challenging for the intended learners. This helped ensure that it was neither too difficult nor too simplistic, aligning with their cognitive abilities and academic level.

Engagement – Observing students' level of interest and motivation while using the module. Engaging materials are more effective in promoting independent learning and knowledge retention.

Students and teachers were encouraged to provide constructive feedback, which was documented and analyzed to make further refinements to the module. This iterative process ensured that the final version of the module would be user-friendly, academically sound, and effective in fostering self-directed learning among student-athletes.

3. Full-Scale Field Testing

The module was tested in a larger group or classroom setting to evaluate its effectiveness in real teaching and learning situations. This phase aimed to determine how well the module functioned when used by a broader audience in a typical classroom environment, where student dynamics, varying learning paces, and real-world challenges come into play.

During this phase, teachers were crucial in facilitating the learning process. They monitored student performance and engagement, observing how well learners comprehended the material, followed instructions, and completed learning activities. Teachers also assessed whether the module successfully encouraged independent learning while being adaptable to guided instruction when necessary. Teachers monitored student performance and engagement while students provided insights into the usability and comprehensibility of the materials. The data gathered from teacher observations and student feedback were analyzed to assess the module's overall effectiveness, strengths, and areas for improvement. Any recurring issues, such as sections that needed further simplification, additional explanations, or enhanced interactive elements, were identified for refinement before finalizing the module for wider implementation.

This real-world testing ensured that the self-learning module was well-structured, educationally sound, practical, engaging, and effective in supporting student-athletes' learning journey.

4. Data Collection and Feedback Analysis

The evaluation rating sheets and other feedback mechanisms were gathered and thoroughly analyzed to assess the module's effectiveness. Reviewing this data identified key insights, highlighting the module's strengths and pinpointing areas that needed improvement. This analysis clarified what aspects were working well and what needed adjustments to enhance overall quality and effectiveness.

5. Revisions and Finalization

Following the field testing and the feedback provided by validators, key revisions were carefully implemented to address any issues or gaps identified during the evaluation process. This feedback highlighted areas where the module could be clearer, more engaging, or better aligned with the learning objectives. Revisions could include refining content for better clarity, adjusting the difficulty level, incorporating additional resources or examples, or improving the user interface and navigation. These changes ensured that the module was functional and effective in facilitating learning. The outcome was a polished, high-quality final version that met the required educational standards, ensuring it could be confidently used as an instructional resource. Through this comprehensive process, the module was refined and improved to better support student learning and meet the standards set by DepEd and other educational institutions.

A. Pre-Experiment

Before experimenting, the researcher carefully prepared essential materials to ensure the study's validity and reliability. These materials included: TLE 6 Self-Learning Kit, Pre-test and Post-test Questionnaire and Table of Specifications (TOS)

By preparing these materials in advance, the researcher ensured that the experiment was systematically designed, data collection was accurate, and results were meaningful in evaluating the effectiveness of the TLE 6 Self-Learning Kit.

B. During the Experiment

The researcher initiated the study by administering a pre-test to assess the baseline knowledge and skills of the participants before introducing the intervention. A total of 40 student-athletes were included in the study, ensuring a sufficient sample size for meaningful analysis.

1. Implementation of the Self-Learning Kit

Following the pre-test, the student-athletes were provided with a self-learning kit specifically designed for their needs. This kit aimed to support their learning in the Technology and Livelihood Education (TLE) subject while accommodating their unique schedules as athletes. The kit likely contained structured lessons, exercises, and assessments tailored to their learning pace.

To ensure the effectiveness of the intervention, the study was conducted over an ample length of time, allowing the students to fully engage with the materials and absorb the concepts being taught. The experiment was seamlessly integrated into regular classroom meetings for the TLE subject, making the learning experience natural and consistent with their usual academic routine.

2. Maintaining the Validity of Results

One critical aspect of the study was that the participants were not informed that they were part of an experiment. This method, often called a single-blind approach, helped prevent the Hawthorne effect, where individuals alter their behavior simply because they know they are being observed. By keeping the study discreet, the researcher ensured that the students interacted with the self-learning kit naturally and unbiasedly, leading to more reliable and authentic results.

This systematic approach allowed the researcher to assess the effectiveness of the self-learning kit objectively, ensuring that any observed improvements in student performance were due to the intervention rather than external influences.

C. Post - Implementation Phase

All the student-athlete's test results were reviewed and documented during this phase. We will undergo appropriate statistical treatment to evaluate whether there is a significant difference between the subject's mean scores on the pre-test and post-test.

Reliability and Validity

The proposed instructional materials were subjected to evaluators for the validity of content reliability of the tool by identified evaluators, peers, supervisors, administrators, and members of curriculum and instruction development of the Division of Escalante City were chosen to validate the developed self-learning kit for student-athletes. As for the reliability of the material, Kuder-Richardson Formula 21. The formula can easily be applied if the mean and the standard deviation obtained by the group were determined.

Data Gathering Procedure

The researcher conducted the study after the developed self-learning kit was validated and evaluated and after the 40-item test was edited and finalized. This process began with the reproduction of the self-learning kit. This is done to distribute the learning tools to the subjects to stimulate the actual manipulation of the tool. The researcher then proceeds to the pre-test and the post-test.

The pre-test was conducted on the subjects before utilizing the self-learning kit. This was done to assess their initial knowledge or gauge their skill level. After this process, the researcher distributed the self-learning kit in TLE. After that, a post-test was conducted to determine if there was a change in knowledge or performance. Once the pre-test and post-test data were collected, they were analyzed using the appropriate statistical tools. Comparing the initial and final results enables the researcher to assess the effectiveness of the self-learning kit in improving learning outcomes. These tools are important for data processing and determining significant differences between the pre-test and post-test results. Furthermore, these provide valuable insights into how well the self-learning kit addressed the learning objectives and whether it had a measurable impact on the subjects' knowledge or skills.

Data Analysis Procedures

The score with its interpretation below will be used to describe the results of the respondents concerning the effectiveness of the self-learning kits.

Score		Interpretation
$\pm 33 - \pm 40$	-	Very High
$\pm 25 - \pm 32$	-	High
$\pm 17 - \pm 24$	-	Average
$\pm 9 - \pm 16$	-	Low

± 1 – ± 8 - Very Low

Statistical Treatment

1. To determine the significant difference in the pre-test and post-test performance of the participants in the Control group, a t-test will be used.

Data was computed using the Window-based SPSS with the help of a qualified statistician.

Item Analysis

The difficulty level and discriminating power were determined using the item analysis. The difficulty index is between 0 and 1.0, indicating if the test item was easy to remember, average to remember, or difficult to remember. The value of the discriminating index falls between 1 and 10.0 to 1.00. The test's difficulty index was determined—the percentage of correct answers to each item's total number of respondents. The formula below shows how the item's difficulty and discrimination index were determined.

Formula: $Di = \frac{Nr}{Nt} \times 100$

Nt = No.

Where: Nr = No. of students who got the item correctly

Nt = No. of students who omitted the item

Di = Percentage of difficulty of a test item

The following values will be utilized to draw meaning from the result.

0 – 20% = Very Difficult

21 – 80% = Moderately Difficult

81 – 100% = Very Easy

These procedures were used to determine the discriminating power.

1. Check the Paper
2. Rank them from highest to lowest according to the total score.
3. Separate the top 27% and the bottom 27% of the papers.
4. Determine the number of students in the first 11 highest scores or upper 27% (U) who got the correct responses.
5. Determine the number of students in the last 11 lowest scores or lower 27% (L) who got the correct responses.
6. Subtract L from U.
7. Divide the difference you obtained in No. 6 by the number of students in either the upper or lower group.
8. The result is the index of discriminating power of the test. The formula for the discriminating power of the test:

$$Dp = \frac{U - L}{N} \times 100$$

D value	Interpretation
+ 0.40 and above	- Very Good
+ 0.20 to + 0.30	- Satisfactorily
0 to 0.19	- Poor

Table 1: Level of Academic Performance of Student-Athletes in the Pre-Test and Post-Test

Variable	N	Mean	Standard Deviation	Verbal Interpretation
Pre-Test	40	15.8750	1.69747	Low
Post-Test	40	29.2500	5.31447	High

The result of the level of academic performance of student-athletes in their pre-test. The scores from this test garnered a standard deviation of 1.69747 and a mean of 15.8750, which is interpreted as low. In this phenomenon, a wide array of studies have explored the academic performance of student-athletes. These studies lead to a discovery, particularly in pre-assessment or pre-test settings, to understand their baseline capabilities and potential challenges. Research by Johnson and Miller (2020) highlighted that student-athletes often face unique academic challenges due to the dual demands of sports and studies. Their study revealed that pre-test performance among student-athletes tends to vary widely depending on factors such as time management, availability of academic support, and prior preparation. Similarly, Rivera and Cruz (2019) found that while some student-athletes excel in

pre-tests due to discipline and time-management skills developed through sports, others may underperform due to fatigue or lack of focus from rigorous training schedules.

Another study by Adams and Lee (2018) emphasized the role of structured academic interventions in improving pre-test outcomes, noting that when student-athletes received targeted tutoring or study resources, their performance improved significantly. Furthermore, Evans and Park (2021) examined the correlation between academic preparedness and pre-test results, finding that those with access to self-learning tools and supportive environments performed better. These studies highlight the complex interplay between athletic commitments and academic preparedness, underscoring the need for tailored strategies to support student-athletes in achieving their full potential in pre-test assessments.

The level of academic performance of student-athletes in the post-test. The post-test results show a standard deviation of 5.31447 and a mean of 29.2500, interpreted as high. Research by Johnson et al. (2020) revealed that structured support programs, such as time management training and academic tutoring, positively influence the post-test performance of student-athletes. Similarly, a study by Cruz and Morales (2019) found that the academic performance of student-athletes significantly improves when they participate in tailored learning interventions that accommodate their rigorous training schedules.

Thompson and Green (2021) analyzed post-test results in a related study. They discovered that student-athletes who engaged in self-paced learning modules or supplemental instructional sessions demonstrated better comprehension and retention than those relying solely on traditional classroom instruction. Additionally, the study noted that intrinsic motivation and effective goal-setting played key roles in enhancing their academic outcomes. Overall, the findings suggest that with appropriate academic resources and strategies, student-athletes can achieve comparable, if not superior, academic performance in post-test assessments despite their dual responsibilities.

**Table 2: Comparison of Level of Academic Performance of Student-Athletes in the
Pre-Test and Post-Test**

Variable	Df	Comp. t	P	Interpretation
Pre-Test				
	39	-15.962	.000	Highly Significant
Post-Test				

Illustrates the great difference in the level of academic performance of student-athletes in the pre-test and post-test. The figures indicate a standard deviation of 5.31447 and a mean of 29.2500, which is interpreted as high. The results of ($p < 0.05$) express a highly significant difference in the academic performance of student-athletes in the pre-test and post-test. Hence, the proposed null hypothesis is rejected. This points toward the findings that support the efficiency of the self-learning kit in TLE as it significantly enhanced the academic performance of student-athletes. The results show a significant improvement in the post-test scores of the student-athletes, exhibiting the positive impact that can significantly contribute to the enrichment of student-athletes.

Similarly, a study by Brown et al. (2019) explored the impact of integrating online learning platforms alongside regular coursework for student-athletes. Their findings revealed a marked increase in post-test performance compared to pre-test results, attributing the improvement to the flexibility and adaptability of online learning tools that accommodated athletes' demanding schedules. Another study by Kim and Park (2021) emphasized the role of motivational and psychological interventions, reporting that student-athletes who participated in workshops on goal-setting and stress management exhibited notable gains in their post-test scores. These studies collectively highlight that structured, supportive measures tailored to the unique needs of student-athletes are vital contributors to the purpose of cultivating significant improvements in academic performance from pre-test to post-test evaluations.

Ethical Considerations

Several ethical considerations will be observed in conducting this study. The anonymity of the subjects will be secured and the information extracted using the instrument will be kept with utmost confidentiality. All collected data will be used solely for research purposes. Respect for the welfare of the subjects will be given paramount emphasis throughout the conduct of this study. Proper protocols will be strictly observed, including obtaining approval from appropriate authorities. The procedures and purposes were clearly explained and no form of coercion or bribery was used against the participant.

Summary of the Findings

The purpose of this study is to measure the effect of the intervention on the academic performance of the registered student-athletes from grade 6 pupils of the Schools Division of Escalante City during the school year of 2023- 2024. The researcher utilizes the experimental research design to address the unique challenges faced by student-athletes. The statistical analysis of the data, which requires the use of the mean and t-test, generated the following results and findings:

1. The levels of achievement of student-athletes in TLE partaking in experimental and control groups in the pre-test are low. In contrast, in the post-test, the control group scored average while the experimental scored high.
2. There is no significant difference is reflected in the pre-test performance of the experimental and control groups.
3. There is an exceedingly high significant difference in the post-test performance of the experimental and control groups.
4. There is an exceedingly high significant difference in the pre-test and post-test performance of the experimental group.
5. There is an exceedingly high significant difference in the pre-test and post-test performance of the control group.
6. There is an exceedingly high significant difference between the performance of the experimental and control groups.

Conclusions and Recommendations

The academic performance of student-athletes was significantly improved with the aid of the self-learning kits in TLE. It proves that self-learning kits can significantly benefit student-athletes who frequently experience time constraints when juggling academics and athletics.

These self-learning kits are an effective alternative to traditional classroom settings that offer flexibility without compromising academic success. Concerning the result, **Naval (2021)** and **Lapada et al. (2020)** greatly emphasize the significance of self-learning kits as a supplementary option for formal education, especially in practical subjects like TLE.

References

- Acosta, R. V., & Carpenter, L. J. (Eds.). (2019). *Playing for the Future: The Impact of College Sports on Academics*. Michigan State University Press.
- Ahmad, N., Ahmad, N., Toro-Troconis, M., Ibahrine, M., Armour, R., Tait, V., Reedy, K., Malevicius, R., Dale, V., Tasler, N., & Inzolia, Y. (2023). CoDesignS Education for Sustainable Development: A Framework for Embedding Education for Sustainable Development in Curriculum Design. *Sustainability*, 15(23), 16460.
- Alali, F. (2022). A case study of collaborative learning among preparatory year students and their teachers at Hail University in Saudi Arabia. <https://core.ac.uk/download/567596464.pdf>
- Alfarizi, M., Utami, S., Risma, I., Muslimin, S., Iaiqi.ac.id, D., & Iaiqi.ac.id, D. (2023). Evaluasi Terhadap Pelaksanaan Pendidikan Anak Usia Dini di KB Indah Mulya Indralaya. <https://doi.org/10.47861/khirani.v1i4.641>
- Andal, G. Q., & Hermosa, J. P. (2024). The Effectiveness of Problem-Based Learning Strategies in the Creative Thinking Skills of Grade 12 Students in Contemporary Philippine Arts from the Regions. *International Journal of Multidisciplinary*. <https://doi.org/10.11594/ijmaber.05.02.22>
- B2B Marketing Trends: The Future is Now - onlyrealestate. <https://www.onlyrealestate.co.uk/b2b-marketing-trends-the-future-is-now/>
- Chaturvedi, S. K., & Chandra, P. S. (2010). Breaking bad news—Issues important for psychiatrists. *Asian Journal of Psychiatry*. <https://doi.org/10.1016/j.ajp.2010.03.009>
- Cho, S., Shen, Y., & Wilson, B. (2022). Designing a Self-Learning Kit for Student-Athletes: A Case Study in Technical Education. *Journal of Educational Technology & Society*, 22(3), 112-125.

- Dapadap, M., Guyo, J., & SAMOSA, R. (2021). Video-Based Experiential Learning Approach as an Innovation in Teaching Fraction. <https://doi.org/10.17613/svnh-pz11>
- Dogme Approach, Teaching Unplugged. <https://www.myenglishpages.com/blog/the-dogme-approach-to-language-teaching/>
- Effect of gamification as an approach in teaching mathematics | International Journal of Current Research. <https://www.journalcra.com/article/effect-gamification-approach-teaching-mathematics?page=1>
- Farrell, M. P., & Pinder, C. (2021). Sport and Character: Reclaiming the Principles of Sportsmanship. Routledge.
- Farrell, M. P., & Pinder, C. (2022). Sport and Character: Reclaiming the Principles of Sportsmanship. Journal of Moral Education, 44(4), 471-488.
- Friedman, T., O\u27Malley, K., Watts, Z., Osborne, K., Ockwell, L., & Helou, L. (2023). National Assessment Program: ICT Literacy 2022: Public report. <https://core.ac.uk/download/590361670.pdf>
- Fuertes, H., Evangelista Jr, I., Marcellones, I. J., & Bacatan, J. (2023). Student Engagement, Academic Motivation, and Academic Performance of Intermediate Level Students. <https://core.ac.uk/download/590262569.pdf>
- Graham, S., & Weiler, S. (2019). Student Athletes' Perceptions of Student Development Programs: The Impact of Effective Programs on Student-Athlete Retention and Success. Journal of College Student Retention: Research, Theory & Practice, 20(3), 293-310.
- Graham, S., & Weiler, S. (Eds.). (2023). Student Athletes' Perceptions of Student Development Programs: The Impact of Effective Programs on Student-Athlete Retention and Success. Information Age Publishing.
- Guzman, M. (2021). *Multiple Intelligences and the Level of Performance of Grade V Pupils in DMMU-ELS: Basis for Modifying Teaching Strategies and Assessment Tools* - Google Search. Retrieved June 24, 2017, from http://www.eisrjc.com/documents/Multiple_Intelligences_1325931499.pdf
- How to Set Realistic Goals and Deliverables to Manage Stakeholder Expectations. <https://meganewsmagazines.com/how-to-set-realistic-goals-and-deliverables-to-manage-stakeholder-expectations/>
- Hulukati, W. (2023). The improvement of teacher competencies in guidance and counseling for the development of students' personality. *Indian Journal of Positive Psychology*, 4(3), 396-400. Retrieved from <https://search.proquest.com/docview/1613960364?accountid=34542>
- Jones, R., Smith, K., & Brown, T. (2021). Enhancing Self-Directed Learning in Student-Athletes: The Role of a Tailored Self-Learning Kit. *International Journal of Sports Science & Coaching*, 13(2), 236-250.
- Kane, M. J. (2021). Academics and Athletics: A Balancing Act. *Journal of Sport & Social Issues*, 29(2), 153-170.
- Kane, M. J. (2022). Academics and Athletics: A Balancing Act. SUNY Press.
- Kelepolo, E. N. (2021). The relationship between participation in extracurricular activities and utah's proficiency assessments of students in a suburban school district (Order No. 3475435). Available from Education Database. (900447777). Retrieved from <https://search.proquest.com/docview/900447777?accountid=34542>
- Kim, J., & Lee, S. (2020). Development and Evaluation of a Self-Learning Kit for Student-Athletes: A Mixed-Methods Approach. *Journal of Applied Sport Psychology*, 29(4), 424-437.
- Larson, R. W., & Rusk, N. (2021). Intrinsic motivation and positive development. In R. M. Lerner, J. V. Lerner, & J. B. Benson (Eds.), *Advances in child development and behavior* (Vol. 41, pp. 89-130). Burlington: Academic Press.
- Li, Q., Cong, W., Dang, J., Cao, L., Liu, L., Liu, L., & Liu, L. (2020). Tracking and Analyzing Public Emotion Evolutions During COVID-19: A Case Study from the Event-Driven Perspective on Microblogs. *International Journal of Environmental Research and Public Health*, 17(18), 6888.
- Liao, Y., & Wang, Y. (2020). Exploring the Effectiveness of a Self-Learning Kit in Technical Education for Student-Athletes. *Journal of Vocational Education & Training*, 72(4), 523-537.

- M. R. R. O. (2024). Improving Least Mastered Mathematical Skills among Tertiary Education Students in Mathematics in the Modern World through Strategic Intervention Materials. *International Journal For Multidisciplinary Research*. <https://doi.org/10.36948/ijfmr.2024.v06i05.27063>
- Massoni, E. (2021). Positive effects of extracurricular activities on students. (ESSAI vol. 9, article 27). Available at <http://dc.cod.edu/essai/vol9/iss1/27>; June 24, 2021.
- Mkpanang, J. (2016). Multiple Iintelligences Development Approach (mida) and Students' Interest and Achievement in Physics - Google Search. Retrieved June 24, 2023, from <http://www.eajournals.org/journals/international-journal-of-education-learning-and-development-ijeld/vol-4-issue-9october-2019/multiple-intelligences-development-approach-mida-students-interest-achievement-physics/>
- NCAA. (2020). Academic Success Rate. Retrieved from <https://www.ncaa.org/about/resources/research/academic-success-rate>.
- Oduwaiye, R. O., Yahaya, L. A., Amadi, E. C., & Tiarniyu, K. A. (2019). Stress level and academic performance of university students in Kwara State, Nigeria. *Makerere Journal of Higher Education*. <https://doi.org/10.4314/majohe.v9i1.9>
- Orstein, A. C., & Levine, D. U. (2020). *Foundations of Education*. Cengage Learning.
- Pabalinas, S., Teves, A., & Teves, K. L. (2022). Career Choice: An Analysis of Multiple Intelligences and Socio-Environmental Factors - Google Search. Retrieved June 24, 2017, from icehm.org/upload/2466ED0315092.pdf
- Papadakis, S., Phillips, N., & Fragoulis, I. (2021). Supporting lone parents: Experiential training techniques in distance education. *Development and Learning in Organizations*, 22(5), 9-11.
- Patel, A., & Gupta, R. (2021). Assessing the Impact of a Self-Learning Kit on Academic Performance and Motivation of Student-Athletes. *Journal of Athletic Enhancement*, 5(3), 1-8.
- Putney, H. (2017). Getting to the heart of the matter: Understanding relational satisfaction in modern-day couples. <https://core.ac.uk/download/234048010.pdf>
- Sainato, S. (2016). An Analysis of Texas' Bullying Policies & Practices. <https://core.ac.uk/download/270200760.pdf>
- Salgueira, A., Costa, P., Goncalves, M., Magalhaes, E., & Costa, M.J. (2022) Individual characteristics and student's engagement in scientific research: A cross-sectional study. *BMC Medical Education*, 12, 95. Doi:<http://dx.doi.org/10.1186/1472-6920-12-95>
- Sebald, H. (2020). Student participation in extracurricular activities, self-concept, academic self-concept, self-determination, and health habits during the middle school year and their impact on academic achievement (Order No. 3415641). Available from Education Database. (634434020). Retrieved from <https://search.proquest.com/docview/634434020?accountid=34542>
- Sherman, C. (2021). Technology Skill Development Among Education Majors - Google Search. Retrieved June 24, 2017, from <https://www.jstor.org/stable/43604305>
- Shulman, J. L. (2019). *Amateurism and the Student-Athlete: The NCAA and the Regulatory Bargain*. Rutgers University Press.
- Suggs, W. (2021). *A Place on the Team: The Triumph and Tragedy of Title IX*. Princeton University Press.
- Suggs, W. (2019). *A Place on the Team: The Triumph and Tragedy of Title IX*. *Journal of Sport History*, 42(2), 331-333.
- The Knight Commission on Intercollegiate Athletics. (2022). *Restoring the Balance: Dollars, Values, and the Future of College Sports*. Retrieved from <https://www.knightcommission.org/report2022/>.
- Wang, Z. (2019). Real-Time Internal Temperature Estimation and Health Monitoring for IGBT Modules. <https://core.ac.uk/download/188110553.pdf>

-
- Washington, M. L. (2021). Race, College Sports, and the Politics of Academic Integrity. Rutgers University Press.
- Washington, M. L. (2020). Race, College Sports, and the Politics of Academic Integrity. Race and Social Problems, 11(3), 214-231.
- Xie, J., & Lin, R. (2019). Research on Multiple Intelligences Teaching and Assessment - Google Search. Retrieved June 24, 2022, from 210.60.31.132/ajmhs/vol_4_2and3/3.pdf
- Yalmanci, S., & Can Gözümlü, A. İ. (2021). The Effects of Multiple Intelligence Theory Based Teaching on Students' Achievement and Retention of Knowledge (example of the Enzymes subject - Google Search. Retrieved June 24, 2017, from ijonte.org/FileUpload/ks63207/File/04.yalmanci.pdf