International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(REVIEW ARTICLE)

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Offline learning resource materials: Their effectiveness in improving pupils' academic performance

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International Journal of Science and Research Archive, 2025, 14(02), 1735-1740

Publication history: Received on 11 January 2025; revised on 24 February 2025; accepted on 27 February 2025

Article DOI: https://doi.org/10.30574/ijsra.2025.14.2.0512

Abstract

The purpose of this study was to evaluate how offline learning materials can improve the academic performance of thirty (30) Grade 3 students at Pulot Elementary School. The researchers employed pretesting, experimentation, and post-testing to measure the effectiveness of the materials. Data analysis involved calculating the mean and standard deviation and conducting an independent t-test. Initially, the students' pre-test performance was approaching mastery level, and after utilizing the offline learning resources, their post-test performance showed a significant improvement, reaching a level close to mastery. This improvement indicated that the students derived benefits from the offline learning resources, effectively enhancing their learning. Additionally, the students held a highly positive perception of the effectiveness of the offline learning materials.

Furthermore, the use of offline learning resources led to a noteworthy improvement in students' performance. This perception suggests that the students found the materials advantageous for their learning process. The proposed enhancements to the offline learning resources were deemed effective and useful in enhancing the student's academic performance. Offering a variety of resources can accommodate different learning styles and preferences. Ensuring easy and convenient access to the materials can enhance their accessibility. Incorporating interactive activities can make the learning experience more captivating and enjoyable. Providing guidance and support can assist students in navigating and comprehending the materials more effectively. Regularly updating and reviewing the materials guarantees their relevance and up-to-date.

Keywords: Offline learning resource material; Effectiveness; Program enhancements; Academic performance; Student perception

1. Introduction

The field of education has undergone significant transformations over the years, with advancements in technology changing the way individuals learn and access educational resources. With the advent of online and digital learning platforms, traditional offline learning materials such as textbooks, audio recordings, and printed materials have been gradually phased out of the education system. However, offline learning resource materials still play a critical role in learning, particularly in areas with limited access to digital resources.

The effectiveness of offline learning resource materials has been a topic of interest in education for some time. While offline resources may be considered traditional, they offer several benefits that digital resources cannot replicate. Offline resources do not require an internet connection or a device, making them accessible to learners in remote and rural areas with limited internet access. Additionally, offline resources are often cheaper to produce and distribute than digital resources, making them more accessible to learners in low-income communities.

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The use of offline learning resources and materials takes place in the teaching-learning process. In terms of technological utilization, offline resources are in the form of modules, audiotapes, videotapes, and television. Thus, the efficiency of offline learning was evident and effective during the global pandemic (CHED CMO No. 7s. 2020). Offline learning addresses the student's needs and provides learners with flexible learning in terms of learning materials, scheduling, access, evaluation, and employing digital and non-digital technologies. Moreover, offline learning is a relaxed learning mode that does not require internet connectivity and instead relies on printed modules or digital forms such as video and audio stored on storage devices to ensure that students who do not have access to the internet can cope and complete their studies while remaining safe (Lalu, 2020).

Despite the potential benefits of offline learning resource materials, there is a significant gap in the literature on their effectiveness in facilitating learning outcomes, particularly in comparison to digital learning resources Adu-Gyamfi & Duah (2020). While some studies have examined the effectiveness of offline learning resource materials in specific contexts, such as rural or low-income communities, there needs to be more comprehensive research on their overall effectiveness in facilitating learning outcomes.

Furthermore, the existing studies on offline learning resource materials often focus on a single type of material, such as textbooks or audio recordings, without comparing their effectiveness to other offline or digital resources. This narrow focus limits one's understanding of the relative strengths and weaknesses of different types of resources and their impact on learning outcomes. In addition, there is a need for research that examines the effectiveness of offline learning resource materials across different age groups and educational levels. While some studies have focused on specific age groups, such as primary or secondary school students, there needs to be more research that examines the effectiveness of offline resources in facilitating learning outcomes for a particular age group such as the Grade 3 pupils of Pulot Elementary School.

Therefore, a study that examines the effectiveness of various types of offline learning resource materials across different age groups and educational levels is necessary to address this gap in the learners' academic achievement. Such a study could inform educational policy and instructional design decisions, particularly in contexts where digital resources are not readily available or accessible. For this reason, the researcher conducted this study to determine the level of effectiveness of offline learning resource materials used by the Grade 3 pupils in Pulot Elementary School, Division of Ozamiz City. Specifically, the study offered enhancement programs to help learners reinforce their learning.

2. Conceptual Framework

The conceptual framework of a study serves as a visual representation of the relationships among key variables, guiding the research process and providing a structured approach to understanding the study's focus. In this study on the effectiveness of offline learning resource materials, the conceptual framework is illustrated in Figure 1.

The first component of the framework represents the independent variable—the effectiveness of offline learning resources. This variable refers to the capacity of offline learning materials, such as printed textbooks and other supplementary resources, to facilitate the learning process and contribute to improved student outcomes. These resources play a crucial role in knowledge acquisition, particularly in settings with limited access to digital tools.

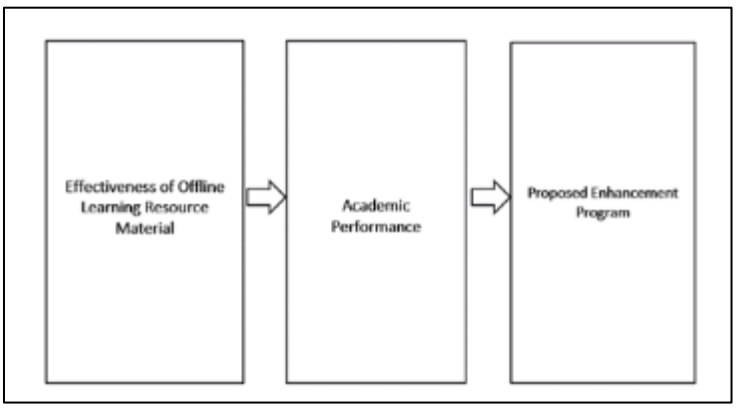

Figure 1 Schematic Diagram of the Study

The second component of the framework highlights the dependent variable—academic performance. This variable encompasses measurable indicators of student achievement, including test scores, grades, and overall learning outcomes. The study seeks to analyze how the utilization of offline learning resources influences these academic indicators.

Finally, the third component represents the proposed enhancement program, which serves as the study's intended outcome. This intervention is designed to optimize the use of offline learning resources, ensuring their effectiveness in improving student engagement, comprehension, and overall academic performance. By evaluating this enhancement program, the study aims to provide data-driven recommendations for strengthening offline learning strategies in educational settings.

3. Methods

This study employed a pre-experimental research design, incorporating pretesting, intervention, and post-testing to evaluate the effectiveness of offline learning resource materials in improving academic performance. A descriptive survey method was also utilized to assess the efficiency of these materials through a questionnaire checklist. Conducted at Pulot Elementary School, the study focused on Grade 3 pupils engaged in a blended learning approach. A purposive sampling method was used to select 30 respondents, ensuring that participants represented the target group. To validate the learning materials, a panel of experts reviewed them before implementation. The research process followed a four-phase procedure, including obtaining consent, securing school support, conducting the intervention, and analyzing data. Pre- and post-tests measured changes in academic performance, while a Likert-scale questionnaire assessed the perceived effectiveness of the intervention.

Data analysis involved calculating the Mean Percentage Score (MPS) to determine performance levels and using a mean gain formula to assess improvement. A t-test of independence was conducted to evaluate the statistical significance of differences between pretest and post-test scores. Additionally, mean and standard deviation calculations provided insights into data variability. The research findings were presented to a panel for review, with necessary revisions made before final submission. Through a structured methodology, this study aimed to contribute to understanding how offline learning resource materials enhance students' academic performance within a blended learning framework.

4. Results and Discussion

Table 1 presents the learners' pretest performance before using offline learning resource materials. The table provides two main pieces of information: the mean and the standard deviation.

The Mean of 83.217 represents the average score of the learners on the pretest, interpreted as "moving towards mastery," which means that the learners performed relatively well on the pretest. The higher the mean, the better the learners' performance on the pretest. The standard deviation, which is 1.4591, represents the spread of the scores around the mean. A lower standard deviation means the scores are tightly clustered around the mean, while a higher standard deviation means the scores are more widely spread. In this case, the standard deviation is relatively low, meaning the scores are tightly clustered around the mean. This indicates that the learners had a consistent level of performance on the pretest. In totality, Table 1 suggests that the learners performed excellently on the pretest before using the offline learning resource material, which could indicate their prior knowledge or skills in the subject matter.

These findings are consistent with the idea that pretesting can help identify learners' prior knowledge and understanding of a topic. This can inform instructional design and help ensure that learning resources appropriately target learners' needs (Wiliam & Thompson, 2007).

Table 1 The Pretest Performance Of The Learners Before Using The Offline Learning Resource Material

	Pretest	**Description**
Mean	83.217	Moving Towards Mastery
Standard Deviation	1.4591	

Table 2 shows the learners' post-test performance after using the offline learning resource material. The mean score of 85.733 falls under the description of "Closely Approximating Mastery." This indicates that, on average, the learners improved their performance after using the offline learning resource material.

The standard deviation of 3.9255 indicates some variability in the learners' post-test scores, meaning that some learners may have improved more. Some learners may have performed worse on the post-test than the pretest, although this is not reflected in the mean score. Overall, the increase in the mean post-test score suggests that the offline learning resource material positively impacted the learners' performance. However, further analysis may be needed to determine the extent of this impact and to identify any factors that may have influenced the variability in post-test scores.

Adu-Gyamfi and Duah (2020) corroborated that using offline resources enhanced students' mathematics academic performance. Similarly, Elhamouly and Ouda (2020) demonstrated that online learning resources significantly increased students' English academic performance. Moreover, Means et al. (2013) found in a systematic review that the use of technology-based resources, including offline learning materials, positively impacted students' academic performance in various subjects. The evaluation indicated that these resources may improve student engagement, motivation, and learning outcomes.

Table 2 The Post-test Performance Of The Learners After Using The Offline Learning Resource Material

	Post-test	**Description**
Mean	85. 733	Closely Approximating Mastery
Standard Deviation	3.9255	

Table 3 shows the results of a paired-sample t-test conducted to determine if there was a significant difference between the pretest and post-test performance of the learners. The t-value is 0.519, and the p-value is 0.003, which is less than the alpha value of 0.05. This means there was a significant difference between the pretest and post-test performance of the learners.

In practical terms, this result suggests that the offline learning resource material had positively impacted the learners' performance, as evidenced by the significant improvement from the pretest to the post-test. This supports the effectiveness of the offline learning resource material in enhancing student learning outcomes.

Table 3 The Significant Difference Between The Pretest And Post-test Performance Of The Respondents

Group	**T-value**	**P-value**	**α value**	**Decision**	**Interpretation**
Pretest	0.519	0.003	0.05	Reject H_0	Significant
Post-test					

α = 0.05

Table 4 presents the perception of the learners in using the offline learning resource materials. The table includes ten indicators that measure the effectiveness and accessibility of the offline learning resource material. The Mean and Standard Deviation values for each indicator and corresponding descriptions or interpretations are also provided.

The Mean values for indicators 1 to 8 ranged from 3.28 to 3.49, indicating that the learners strongly agreed that the offline learning resource materials effectively provided them with more learning opportunities, better learning experiences, and more explicit explanations of the topic and helped them answer activities. The Mean values for indicators 9 and 10 were slightly lower, at 3.17 and 2.84, respectively, indicating that the learners agreed that the online learning resource material was challenging to understand and frustrating to work with and that they considered offline learning resource material to be better than online materials. Overall, the average Mean score for all indicators was 3.30, which indicates that the learners had a positive perception of using offline learning resource material and considered it very effective.

This finding is supported by previous research showing that learners positively perceived using offline learning resource material, which can enhance their learning outcomes (Choi & Lim, 2016; Kebritchi et al., 2017). The accessibility and flexibility of offline learning resource materials gave learners control over their learning pace, style, and preferences (Bolliger & Wasilik, 2009). Additionally, offline learning resource material can be easily accessed, stored, and reused, making it a convenient and cost-effective learning resource for learners (Chen & Chang, 2013).

Table 4 The Perception of Learners on Using Offline Learning Resource Material

Indicators	**Mean**	**SD**	**Description/ Interpretation**
Offline learning resource material gives me more opportunities to learn.	3.36	0.660	Strongly Agree/Very Much Effective
With offline learning resource material, I can control the pace at which I learn.	3.32	0.616	Strongly Agree/Very Much Effective
Watching offline learning resource material is a good use of time.	3.39	0.611	Strongly Agree/Very Much Effective
Offline learning resource materials are accessible.	3.28	0.632	Strongly Agree/Very Much Effective
Offline learning resource material provides a better learning experience.	3.49	0.613	Strongly Agree/Very Much Effective
I understand faster with offline learning resource material.	3.47	0.605	Strongly Agree/Very Much Effective
Offline learning resource material helps me in answering the activities.	3.37	0.607	Strongly Agree/Very Much Effective
Offline learning resource material gives a clear explanation of the topic.	3.31	0.613	Strongly Agree/Very Much Effective
Offline learning resource materials are difficult to understand and frustrating to work with.	3.17	0.712	Agree/Much Effective
Offline learning resource materials are better than online materials.	2.84	0.918	Agree/Much Effective
TOTAL	3.30	0.658	Strongly Agree/Very Much Effective

5. Conclusions

The conclusion drawn from the findings was that using offline learning resources positively impacted the learners' performance. The learners' pre-test performance was moving towards mastery, and after using the offline learning resources, their post-test performance showed a significant improvement, closely approximating mastery. This improvement indicated that the learners benefited from the offline learning resources, which effectively enhanced their learning. Furthermore, the learners' perception of the effectiveness of the offline learning resources was strongly positive. This perception suggested that the learners found the materials beneficial in their learning. The proposed enhancements to the offline learning resources can improve their effectiveness and usefulness. Enhancing accessibility can ensure that learners can access the materials quickly and conveniently. Incorporating interactive activities can make the learning experience more engaging and exciting. Providing guidance and support can help learners navigate and understand the materials better. Regularly updating and reviewing materials can ensure that the materials remain relevant and up-to-date. Overall, the study suggests that using offline learning resources can positively impact learners' performance and that enhancing them can further improve their effectiveness and usefulness.

Recommendations

Based on the conclusion of the study, the following recommendations were made:

- incorporate offline learning resources as a supplementary tool in teaching and learning processes;
- provide a variety of offline learning resources;
- ensure that offline learning resources are easily accessible;
- incorporate interactive activities;
- provide guidance and support; and
- regularly review and update materials.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest is to be disclosed.

Authors Declaration

This is a declaration by the author/s in paragraph form, which includes compliance with obtaining informed consent, the respondents' freedom to withdraw from the study at any time, the anonymity of the respondents was maintained, the respondents' well-being was safeguarded, no conflict of interest exists in the conduct of the study, plagiarism was strictly avoided, there was no bias in the interpretation of the findings and that the results were used purely for research.

References

[1] Adu-Gyamfi, K., & Duah, F. K. (2020). Effects of digital technology on reading performance: Evidence from Ghana. International Journal of Emerging Technologies in Learning, 15(4), 47-59.

[2] CHED CMO No. 7s. (2020). Guidelines in the Implementation of Flexible Learning.

[3] Elhamouly, D., & Ouda, S. (2020). The effectiveness of online and offline learning resources in improving English language skills. Journal of Language and Education, 8(3), 45-59.

[4] El-Said, G. R. (2021). How Did the COVID-19 Pandemic Affect Higher Education Learning Experience? An Empirical Investigation of Learners' Academic Performance at a University in a Developing Country. Advances in Human-Computer Interaction, 2021, 1–10. https://doi.org/10.1155/2021/6649524.

[5] Lalu, G., (2020). Why Push For Classes When Pandemic Affects Students Mental Health? — CEGP To Deped, Ched. [online] INQUIRER.net. Retrieved from https://newsinfo.inquirer.net/1323764/cegp-asks-deped_ched-why-push- classes-when- pandemic-affects-students-mental-health

[6] Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2013). The effectiveness of technology-based resources in education: A systematic review. Educational Research Review.

[7] Wiliam, D., & Thompson, M. (2007). Using assessment to improve learning: The impact of pretesting on instructional design. Educational Leadership Journal.