



Utilization of e-Book Kotobee Reader as an Interactive Learning Tool in Developing 8th-Grade Mathematical Skill

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ARTICLE INFO

Article History:

Received: 03 October 2022

Final Revision: 03 January 2023

Accepted: 06 January 2023

Online Publication: 07 January 2023

KEYWORDS

e-Book Kotobee Reader, Interactive Learning Tool

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ABSTRACT

When the COVID-19 pandemic broke out in our country, the education sector explored the availability of technologies that might be helpful to ensure the delivery of quality education to learners despite the sudden shift in learning modality, that is, from face-to-face to blended learning. The Sulong Edukalidad, a move of the Department of Education to innovate Philippine Education under COVID-19 provided online training and webinars that prepared Filipino teachers in facing the new normal of the education setting. One of which is the utilization of the e-book Kotobee Readers as an interactive learning tool. E-books are one of the many software programs being developed to enhance teaching in the field of education. E-books are publications that can give students information and instructions in the form of multimedia flexibly and efficiently, thereby supporting and improving learning. In this regard, our team aims to explore the potential of the utilization of the e-book Kotobee reader as an interactive learning tool for developing 8th Grade Mathematical skills during the Covid-19 pandemic, focusing on the average percentage of the participants before and after the utilization of the e-book, their level of performance during the utilization of the said learning material, the challenges encountered by the participants and also identifying the positive traits of Kotobee that helped the students learn. The research design to be used for this research will be a quasi-experimental approach. This research design is intended for an interventional study used to estimate the impact of an interactive-based lesson using the Kotobee e-book on the Grade 8 students in developing their mathematical skills. The participants involved in this research are the selected Grade 8 – Rose learners in Mataas na Paaralang Neptali A. Gonzales. Our team implemented a series of interventions about topics in Quarter III which the lectures and activities can be found in the said e-book. Students' usage of the Kotobee e-book app daily was tracked in an Inquiry report. Students' scores in each activity will be tallied at the end of each quarter for assessment. This will assist us in determining how well the students performed after they have used the Kotobee e-book. A separate learning activity sheet (LAS), validated by the Master Teacher in charge of JHS Mathematics, was administered weekly to be able to validate the performance of the learners for a specific topic taught while using the e-Book. At the end of the Quarter, a post-test was administered to be able to determine the performance of the students. Data collected showed that using the Kotobee e-book, it has affected how well the participants do in Mathematics 8 Quarter III, as shown by the significant difference between the mean percentage scores on the pre-test and the mean percentage scores on the summative test. Students learn while using the Kotobee e-book, based on the results of their weekly assessments and their quarterly test.

1. INTRODUCTION

1.1. Research Background

The commitment of the Department of Education (DepEd) is to sustain continuity in education in the face of COVID-19's difficulties. Continued education is required. Normalize



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activities in the community by bringing stability and hope to support the development of our kids around the nation. But students' health and safety as well as school safety Personnel management is crucial and must be always safeguarded. Result of COVID-19 a situation of public health emergency, DepEd Order No. on June 19, 2020, issued a fundamental program to maintain learning across the K–12 curriculum. A different alignment of the learning materials, delivery methods, training

for teachers and school leaders, and parents or guardians' understanding of learning the commitment of the Department of Education (DepEd) is to sustaining continuity in education in the face of COVID-19's difficulties continued education is required [1].

More and more of our daily operations depend on technology. In terms of social interaction, business, study, etc., Our daily operations are becoming more and more dependent on technology. In terms of social interaction, business, study, etc., there is a growing reliance on technology. Since the latter part of the 1990s, the prevalence and use of widespread adoption of e-books in higher education 2009 Shelburne E-books are an assortment of digital informative texts produced for study (Text, images, graphics, sound, moving images, or animation) 2007's Landoni & Hanlon. A digital book is a cutting-edge technological innovation Traditional paper books will soon be replaced [4]. Whilst in college

Traditional paper textbooks are preferred by pupils (Kimball et electronic [6]. textbooks have several benefits over traditional paper textbooks, as well as text displays on screens. Since the release of e-books, we have switched to using digital copies of our self-educational materials utilized by DepEd they aid in the creation of educational initiatives. more successful. Numerous top-notch instruments are available in digital schooling. A text-based interactive ebook including animations, audio files,

There are also books widgets, games, and videos. Here is online or offline, all in one document. E-books can improve how well students retain their lessons. because of the additional features that support higher interaction and accessibility electronic [5]. textbooks provide several benefits over traditional paper textbooks, as well as text displays on screens.

Kotobee Reader is the tool of choice for reading interactive ebooks on the web, mobile, and desktop. It is a freemium tool that teachers and curriculum designers can use to create interactive ebooks for their schools and classrooms. Using Kotobee Author, you can create ebooks across a variety of formats, provided you're working on a Windows or Mac machine. Kotobee was able to deliver content on both online and offline modes while retaining the interactive elements, thus allowing learning to take place anytime and anywhere. Offline support allows your readers to access downloaded ebooks in desktop and mobile apps without internet access. If you'd like to enable offline access for your users, you need to do so before your libraries are exported. It can create lessons in an organized manner and can add videos, audio, links, and images (Mary Rose G. Genova, a licensed teacher from the Philippines).

Kotobee is an easy-to-use platform for users of any skill level. Using Kotobee we were able to deliver content on both online and offline modes while retaining the interactive elements, thus allowing learning to take place anytime and anywhere. Kotobee is rich with elements that can transform traditional learning into blended learning; this platform is dedicated to taking your educational experience to the next level. (Prad Duraisamy, Educational Technology Specialist). Completely new to multimedia ebook development and launch, Kotobee support truly made a difference and facilitated the creation of a beautiful multimedia ebook with an unprecedented learning experience for the learner in the universities as well as the industry. It is the only platform that is enabled to integrate HD videos, podcasts, Adobe InDesign book design templates,

and BookWidgets exercises (Dr. Nishith Tripathi and Dr. Jeffrey Reed of Virginia Tech).

1.2. Literature Review

According to Azevedo's (2012) study, teachers and students alike were interested in using the ebook. The investigation was conducted with attention to the review of the literature and the application of a quantitative questionnaire to both teachers and students. Despite both use the phrase "the ebook is interesting" sparingly. The study's key finding is that teachers' point of view is crucial. In addition, it was tasteful and smelled good to flip through the printed book. even so, the authors transmit a crucial viewpoint to understand this tool's responsiveness; the topic was not brought up as well as the subject matter and academic year to which the study was applied. You cannot determine if the ebook may contain interactive elements or simply be a straightforward digitization of the textbook. It's crucial to mention the interest of kids in this format. Books are regarded as the most significant medium for disseminating knowledge, evaluating information, and evaluating academic programs for education since the development of the printing press. With the advancement of tools due to electronic publishing, increased access to knowledge online, and globalization, e-books have become an increasingly sophisticated tool for knowledge transfer [2].

E-books have demonstrated that they are useful tools at the level of practical practice, according to [1] because they may be easily included in educational programs for reading, which are necessary for many students' teachers should have some practical computer skills and procedural understanding. However, instruction in the decision to use an electronic book is influenced by a variety of factors, not only how simple it is to use one educational process but based more on research findings that showed how beneficial e-books are for learning reading. Results from several research that employed empirical methodologies to investigate the impact of using electronic books to address the effectiveness of employing electronic books for instruction, skill acquisition, and raising achievement [4]. Due to the various degrees of expectations for an electronic book, several definitions of what an electronic book is as well as the way it presents information and educational material. [5] a type of portable digital information with a variety of shapes, including compact disc and interactive internet database, collection of online pages, or interactive sites with electronic information "A learning environment with an application," or "an electronic book with many of its properties" a tool that can save multimedia and has a database of support materials for educational resources subject-related presentations before importing them.

1.3. Research Objective

This action research aims to develop the mathematical skills of Grade 8 students through an interactive-based lesson using Kotobee Author. Through this experiment, the researcher would like to know the effectiveness of using an e-Book in the teaching-learning process. It seeks to answer the following questions:

1. What is the average percentage scores of the participants before and after the utilization of Kotobee-ebook learning material?

2. What is the level of performance of the participants during the utilization of the Kotobee e-book learning material?
3. What are the challenges encountered by the participants in using Kotobee e-book learning material?
4. How can teachers use the positive nature of Kotobee to help students learn?

2. RESEARCH METHOD

2.1. Participants and/or other sources of Data

The participants of this research are the selected Grade 8 – Rose learners in MataasnaPaaralangNeptali A. Gonzales. The researcher will survey Google Forms to the Grade 8 students to identify who can join the implementation of the said e-Book. Then, will tell the student – participants to download the Kotobee Reader app on the gadget they intend to use. Afterward, the researcher will explain the features of Kotobee as the students explore it and this will be done via Google Meet. The flow of the intervention is shown in Figure 1.

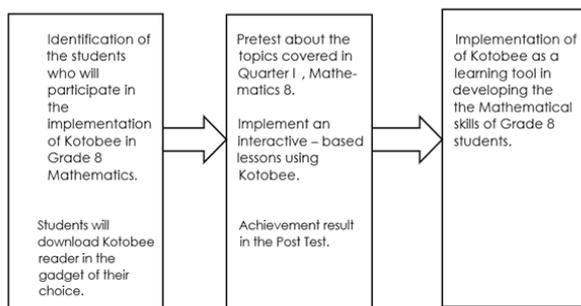


Figure 1. A Flow Chart of the Study

After the implementation of the workshop, then the researcher will survey the impacts of using Kotobee in their teaching–learning process and discover how the positive nature of Kotobee helps students to learn in both modular and online classes. With this tool, there are unlimited opportunities to engage students in meaningful, engaging, and interesting ways to learn stuff. It is expected that through this ebook, mathematics education will be effective and enjoyable for Grade 8 learners amidst this pandemic.

2.2. Innovations, Interventions, and Strategies

An ebook is a book publication made available in digital form, consisting of text, images, or both, readable on computers and other electronic devices. Some e-books have no printed counterpart, despite being called "electronic versions of printed books." An e-book can be viewed on any computer device with a controlled viewing screen, such as desktops or laptops, tablets, or smartphones.

Men typically refer to books as their "best friend." With the advent of the e-book, our old acquaintance has become a "smart" friend in today's world of ever-increasing convenience and ease-of-use expectations. Do You Know? The first ebook was invented as early as 1971 when Michael S. Hart launched Project Gutenberg and made a digital copy of the US Declaration of Independence. This was the first eBook in the world. There will

be no untidy pages or misplaced bookmarks! When compared to printed books, ebooks provide several advantages. Books can be hard to store. You can have a lot of ebooks stored on the same thing, which makes it great for going on trips. The backlighting can be changed, and the font size can be made bigger. This feature makes it perfect for people who can't see well. Numerous ebooks have features such as searchable text, thesaurus and dictionaries, and others.

In the Kotobee author app, an ebrand theme and logo can be used to make the ebook app look like your own, with the interactive ebook creator and editor, it can make amazing ebooks, engage our learners by including video, music, questions, widgets, and other interactive elements. Export to more than 12 types of ebooks, including apps for phones and tablets. Create a one-of-a-kind experience by utilizing tools and reading options of your choosing. To interface with the organization's learning management system, using SCORM, LTI, or Tin Can. A variety of file types can be imported into the program, and you can start from scratch or import from existing files.

This Kotobee app (eBook) aims to guide Grade 8 learners with the concepts, postulates, and theorems that describe and illustrate a Mathematical System. This eBook guides the learners by providing varied examples and differentiated learning activities. The eBook comprises of competencies in Quarter III:

- Describes a mathematical system.
- Illustrates the need for an axiomatic structure of a mathematical system in general, and in Geometry in particular: (a) defined terms and (b) undefined terms; (c) postulates; and (d) theorems.
- Illustrates triangle congruence.
- Illustrates the SSS, SAS, SAA, and ASA Congruence Postulates.
- Solves corresponding parts of congruent triangles.
- Proves two triangles are congruent.
- Proves statements on triangle congruence.
- Applies triangle congruence to construct perpendicular lines and angle bisectors.

The eBook includes illustrative examples with detailed solutions, intended to help you understand new concepts and learn new skills. You should study these examples and understand each discussion and be guided with each step in the practice exercises so that you will be well prepared in answering the activities at the end of each lesson. Activities vary from easy to average to difficult ones.

2.3. Plans for Dissemination and Utilization

The research design to be used for this research will be a quasi–an experimental approach. This research design is intended for an interventional study used to estimate the impact of an interactive–based lesson using the Kotobee e– book to the Grade 8 students in developing their mathematical skills

3. RESULT AND DISCUSSION

3.1. The Mean Percentage Scores Results

Table 1 presents the pre-test results of the respondents in General Mathematics before using the CLAID learning modules.

Table 1. PRE-TEST RESULTS IN MATHEMATICS (Before using the Kotobee e-book)

PARTICIPANTS	Mean Score	Percentage Score	Standard Deviation
Learners who are using Kotobee e-Book	6.94	69.40	2.01
Learners who are in Traditional Method of Lesson Delivery	7.13	71.30	2.89

As shown from the table above, the percentage scores of both learners who will be participating in using Kotobee-Book and those who will be under the traditional method of lesson delivery, their Pre-test for Mathematics 8 are 69.40% with a standard deviation of 2.01 and 71.30% with a standard deviation of 2.89 consecutively. Based on the DepEd assessment and grading ruling in terms of descriptors, grading scale, and remarks, the mean percentage scores in the pre-test “Did Not Meet Expectation or Failed” before using the Kotobee-Book.

Table 2. WEEKLY MEAN AVERAGE SCORES IN MATHEMATICS 8 (While using the Kotobee-Book)

Week	Expected Score	Kotobee e-Book Users	Non – Kotobee e-Book Users
1	20	19.00	16.81
2	20	18.81	17.06
3	20	19.13	16.81
4	20	18.38	17.00
5	20	18.50	17.56
6	20	18.44	15.69
7	20	19.38	18.19
8	20	19.88	18.69
OVERALL WEEKLY AVERAGE SCORE		18.94	17.23

Table 2 shows the weekly mean average scores of the learners while using the Kotobee-Book through teacher-made learning

Table 4. SIGNIFICANT DIFFERENCE ON THE PRE-TEST (Before) AND POST-TEST (After) RESULTS AMONG GRADE 8 STUDENTS

Participant	Overall Mean		t-Value		Decision	Remarks
	Pre-Test	Post Test	Computed Value	Critical Value		
Learners who are using Kotobee-Book	6.94	9.13	3.78	1.75	Reject	Significant

Data revealed that there is a significant difference in the results between the pre-test and post-test of the learners before and after using the Kotobee e-Book since the computed t-value of **3.78** is greater than the critical value of 1.75 at a 0.05 level of significance. Findings show that the utilization of **Kotobee-Book** improves and has an impact on the learner’s performance in Mathematics 8. Table 2.2 presents the third quarter grades of the learners in Mathematics 8 which contributed to the utilization of Kotobee-Book.

activity sheets to determine the weekly performance of the learners.

Based on the data presented, most of the weekly mean assessment results of the learners who are using Kotobee-Book got above 92% which is 17% far from a 75% threshold score defined by the SDO in terms of an objective test compared to the learners who are not using the Kotobee e-Book. Week 8 assessment results got the highest average score of 19.88 or 99% and Week 2 got the lowest weekly assessment average score of 92%. Findings reveal that while using the Kotobee-Book the learners are improving weekly based on the results from the data.

Table 3. POST-TEST RESULTS IN MATHEMATICS 8 (After Using the Kotobee-Book)

PARTICIPANTS	Mean Score	Percentage Score	Standard Deviation
Learners who are using Kotobee e-Book	9.13	91.30	1.19
Learners who are in Traditional Method of Lesson Delivery	8.31	83.10	3.27

Table 3 shows the post-test of the Grade 8 learners in Mathematics from Mataas na PaaralangNepatali A. Gonzales in SDO Mandaluyong after using the Kotobee-Book.

The table shows that the mean percentage score of the learners is 91.30% which means that the respondents meet the “**Outstanding**” expectation **after using the Kotobee e-book** based on the DepEd ruling in assessment and grading in terms of Descriptors, Grading Scale, and Remarks.

3.2. Levels of Performance of the Participants During the Utilization of the Kotobee e-book

Table 4 indicates the significant difference in the overall mean percentage scores of the Pre-test and Post-test of the learners before and after using the Kotobee e-book.

Table 5. Percentage Of Third-Quarter Grade Of Learners In Mathematics 8

Week	Expected Score	Kotobee e-Book Users	Non – Kotobee e-Book Users
1	20	19.00	16.81
2	20	18.81	17.06
3	20	19.13	16.81
4	20	18.38	17.00
5	20	18.50	17.56
6	20	18.44	15.69
7	20	19.38	18.19
8	20	19.88	18.69
OVERALL WEEKLY AVERAGE SCORE		18.94	17.23

Data revealed that the majority of the learners both users and non-users of Kotobee e-Book got a “**Very Satisfactory**” third quarter grade of 37.5% or 12 out of 32 learners. However, according to the data above there are four (4) learners got “Fairly Satisfactory” and no student was classified as “Did Not Meet Expectation” for their third quarter grade in the subject. Amidst the pandemic, students are trying to pass their subjects even if they struggle. According to the subject teachers, some students were under “modular distance learning” and opted not to attend online distance learning using either Google Meet or FB Messenger classroom platforms.

Selected Grade 8 - Rose learners of Mataas na PaaralangNeptali A. Gonzales from SDO Mandaluyong City were part of the study. These chosen learners were classified as learners who are using the Kotobee e-Book and the ones who were under the traditional way of delivering the lesson.. They were chosen to be the subject of this study to be able to determine their performance in the new normal (Blended distance learning) using a learning material initiated by the SDO.

Table 6. Percentage of Third Quarter Grade Learners in Mathematics 8

THIRD QUARTER GRADE IN MATHEMATICS 8	Kotobee e-Book Users	%	Non - Kotobee e-Book Users	%
100-98 (Outstanding)	0	0	0	0
97-95 (Outstanding)	0	0	0	0
94-90 (Outstanding)	5	31.35	1	6.25
89-85 (Very Satisfactory)	6	37.5	6	37.5
84-80 (Satisfactory)	4	25.00	6	37.5
79-75 (Fairly Satisfactory)	1	6.251	3	18.75
below 75 (Did Not Meet Expectation)	0	0	0	0
Total	16	100	16	100

Based on the Basic Education Learning Continuity Plan (BE LCP) of the said school, they are using blended online distance learning. Google Meet, Google Classroom and FB Messenger Classroom are the learning platform used by teachers. Likewise, Kotobee-Book was used for learners’ material and reference. Pre-test was administered to be able to determine the prior knowledge of the learners in the subject matter. And based on the results, learners “*Did Not Meet Expectations*” towards the different topics in Mathematics 8 for the third quarter before using the Kotobee-Book. During the utilization of the Kotobee-Book, separate learning activity sheets (LAS) were administered weekly to be able to validate the performance of the learners for a specific topic taught while using the e-Book. This weekly assessment was validated by the Master Teacher in charge of JHS Mathematics. At the end of the Quarter, a post-test was administered to be able to determine the performance of the students. Data revealed, that the learners have an “Outstanding” performance in Mathematics 8 thus theKotobee e-Book has greatly influenced the performance of the students in this subject.

Teachers and learners have encountered poor internet connectivity during the administration of the said e-Book. On the other hand, some students experienced also the non-compatibility of the application to their gadgets.

With the use of Kotobee-Book it is evident that learners have mastered the content prescribed in the MELCS for Mathematics 8 in topics for the Third Quarter. As the computed values using the t-table of 2 samples of the pre-test and post-tests revealed that the computed value of 3.78 is greater than the critical value of 1.75 at a 0.05 level of significance. Findings show that the learners improved with the use of the Kotobee-Book.

Learners on the other note, have enjoyed using the said e-book because of the following reasons:

- it is accessible everywhere.
- it has interactive elements that capture their interest
- it has an environment-friendly option that easy to navigate

3.3. Challenges Encountered by the Students in Using Kotobee e-book

The researcher interviewed the students as to the challenges they encountered in the utilization of the Kotobee-Book learning materials. These constitute three challenges which were specified as follows: a) Validity and reliability of the content of the e-book; b) learning activities included in the e-book for the students; and c) Submission of the Kotobee e-Book.

4. CONCLUSION

Based on the findings of the study, the following conclusions are drawn:

- a) Using Kotobeebook has affected how well students in Grade 8-Rose do in Math Quarter III, as shown by the significant difference between the mean percentage scores on the re-test and the mean percentage scores on the summative test.
- b) Students learned while using the Kotobeebook, too, based on the results of their weekly assessments and their quarterly test.
- c) Both teachers and students had trouble getting their devices to work together.

In General, Learners of all different ability levels will find it simple and intuitive to use Kotobee's platform. Learners were able to acquire an understanding of content whether it was accessed online or offline by using Kotobee, while the interactive components were preserved. Because of this, education might take place at any time and in any location. Kotobee's extensive feature set includes several elements that facilitate the transition from traditional learning to blended learning and raises the bar for educational attainment. Free interactive ebooks can be accessed on mobile devices and personal computers and laptops for students. Lessons that are not only well-organized but also include audio, video, and photo links and videos.

ACKNOWLEDGMENT

For us (Educators), conducting this Division Action Research has been a truly life-changing event, and we could not have done it without the help and guidance we received from many people.

First and foremost, we want to express our gratitude to Mr. Resty Rodelas, our Mathematics Education Supervisor, for all of his help and encouragement. We would not have been able to achieve our goals without his direction and encouragement. Our School Heads, Mr. Henry A. Sabidong (Principal, MPNAG) and Mrs. Liberty A. Nobleza (HeadTeacher III-Mathematics, MPNAG), were also instrumental in convincing us to write and propose this division action research. Our team is enthusiastic to present this research professionally and quickly for the benefit of our School and students as a result of their unwavering support. Mrs. Nerissa N. Torrecampo, a former coworker, was extremely helpful and supportive. We are also appreciative of the understanding and assistance of the Grade 8 Rose students in MPNAG, School Year 2021-2022 during the study implementation process. Their excitement to learn about the topics was palpable. We never hear complaints of hardships in our daily conversations, only overflowing statements of thanks. To the parents who have shown their children that they can be trusted. We are also grateful to our colleagues MPNAG Mathematics teachers, who have supported us from the beginning to the completion of our studies and have always been very helpful and supportive. Finally, we want to thank our family, who have been by our side throughout this Research,

living every minute of it with us, and without whom we would not have had the guts to begin this journey in the first place, and who have made it possible for us to finish what we started.

REFERENCE

- [1] Chen, 2002, Zucker and others (2009) tool used to transfer knowledge
- [2] Chen, H. Y. & Jang, S.J. (2013). Exploring the reasons for using electric books and technological pedagogical and content knowledge of Taiwanese elementary mathematics and science teachers
- [3] DepEd Order No. 12 s. 2020 titled "Adoption of the Basic Education Learning Continuity Plan for SY 2020-2021 retrieved from
- [4] Dr. Padmapriya P.V. (2015) Effectiveness of Self-Learning Modules Achievement in Biology Among Secondary School Students
- [5] Lai, J.Y., & Chang, C.Y. (2011). User attitudes toward dedicated e-book readers for reading
- [6] Patricia, M. & Michael, D. (2005). The effects of spatial layout on relationships between performance, path styles and mental representation in a hypermedia information search task, *Interactive Technology & Smart Education*