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The Adoption of Tablet and e-Textbooks: first grade core curriculum and school administration attitude

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Abstract
This study aimed to investigate the effect of using e-textbooks, activities, games, and worksheets that loaded onto students tablets on first grade students' achievement on their core curriculum (science, math, English, Arabic) compared to the use of the traditional teaching method. It also, investigated the school administration reflection toward the use of Tablet as a teaching tool. The study used a quasi-experimental control group design. The study sample was formed of (80) male and female first grade students who are studying at one private school in the city of Irbid-Jordan, during the first semester of the scholastic year 2014/2015. An open interview was conducted with the school principle and the principle assistants. A selected software and e-textbook for students' core curriculum were saved on each student's tablet. Participants of the study were divided into two groups: the control groups (40 students) were taught using the traditional textbook, and the experimental group (40 students) was taught using Tablet. Both groups had given a pre-test and a post-test to measure their achievements in their core subjects. The motive for this research was to move from using traditional teaching tools to use tablet as a new teaching tool that can deliver class materials to improve learning outcomes. The result of the study showed that using e-textbook as a teaching tool had improved students learning and motivated them. School administration reported that using e-textbook on teaching was a good idea.
Keywords: core curriculum, tablets, e-learning, elementary education, educational technology, school administration.

1. Introduction

The use of tablet PC's readers and e-textbook reduced learners' cognitive load and enhanced students learning performance and it became mainstream reading devices in the future of education. (Huang. K., Chen. K., and Ho. C., 2014). Using instructional design process to prepare the e-textbooks learning materials that will assisted learning process by reduce students cognitive load and enhance students learning outcomes (Lai & Newby, 2012). Students used e-Books to learn new topics in literacy in a way that support their reading process. This way of teaching was impacted students on reading literacy for k-12 classrooms. It considers a change that led to best practice method on reading literacy instruction (Felvégi & Matthew, 2012). It also been used to teach literacy for kindergarten students it included word meaning, lessoning sections, and comprehension sections. The use of compuetr applications and e-book activities has a good effect on students learning outcomes (Shamir, 2009). The e-textbooks can be save on students Tablets consider as a practical and economic learning tool. Students tired from carrying out their pack full of books and notebooks. Using the e-textbook could enable students to take notice and submits their assignments, and teachers can check their work online (Mock, 2004).

The study was conducted in Turkey to investigate school principals' opinion on the FATIH Project to introduce technology applications on schools. The result of the study indicated that this new method of teaching was motivated. They recommended that specialization staffs are needed to help teachers and students to solve any problem rises during the process. The use of technology and tablet PC saved teachers time and support students learning by using many multimedia types such as pictures, video, and animation (Akkoyunlua, Baskanb, 2015) A study conducted to examine the effect of using computer applications and e-book on learning math for preschoolers at risk for learning disability students. The study found that using e-book improved students vocabulary and math skills (Shamir and Baruch, 2012). The study compare between students' attitudes toward the use of a tablet-computer equipped with digital learning resources and electronic textbooks as a teaching method compare to traditional teaching methods. The finding of the study revealed that the use of the digital materials as a learning resources increased the flexibility of understanding (Marco. K., Marcus. S., and Michiel V. O., (2012). A study examined the effectiveness of using e-book that were downlouded on students Tablets to learn vocabulary acquisition and story comprehension among kindergarten at risk students. The finding of the study revealed that students who used e-book activities improved their vocabulary and comprehension skills (Shamir,Korata & Shlafer, 2011). A study focused on the effects of eBooks on enhancing learning practices. It compared between the use of an eBook-reader in a master program for occupational psychology and for master program for education. The finding of the study revealed that both groups reported that this tool increased the flexibility of students learning. They developed new study strategies through preparing notes, class materials and the preparation of assignments (Nie, Armellini, Witthaus, & Barklamb, 2011). A study was conducted to

examine the use of e-book on students Tablets by kindergarten children. The result of the study indicated that kindergarten children are very much at ease with use of e-book. They were being able to use the e-books easily. It was the only choice for them so they get used to it very fast (Shiratuddin and Landoni, 2003).

The Tablets and e-textbook presented information and curriculum documents through different multimedia applications such as texts and pictures, its included subject contents, activities and exercises (Jonassen, 1997). It also define as a digital objects with different content type that design using multimodal approach , which used to integrate the subject concept in the book with features that can be provided in an electronic way (Vassiliou and Rowley, 2008).

An electronic book (e-book or digital book) defined as a book that published in a digital form. It should have base elements such as: text, images, and other multimedia so it can be readable on computers or other electronic devices (Wikipedia). It also defines as: an electronic version of a printed book (Gardiner, Eileen and Ronald, 2010). Usually e-textbook can be read on special electronic device (e-book readers) including computers, tablet computers, and smartphones (Jump up, 2010). the e-reader or a tablet was increased in 2014 to 50% of Americans. For that the readers for e-book was increased in U.S.A to 28% in year 2014 compare to 23% in 2013 (Jump up, 2014).

E-textbooks offer the opportunity for students to access the paper textbook in an interactive way by having a multimedia content that saved on students personal tablets, such as pictures and videos, interactive presentations, and hyperlinks. It can include Tests, discussion board, and student portfolio. Using a Touchscreen technology and special pen offers students the chance to practice and do worksheet which increase students learning experience. E-textbook is a helpful tool to improve the learning environment for student with disabilities (Wikipedia (2014). It can be a useful tool for special need students such as vision impairments. They can use the text-to-speech or screen readers to have text book documents to be read aloud to them. Students can use some tools to change text font size and type and background to improve text readability (Courduff, 2010).

In e-book design process there are many elements that required during the design stages:

1. Cover: designing the book cover in a way that attracts students to read the book. At the same time reflect the book topics and ideas.
2. Table of Contents: table of content need to be organized based on the headings that are in the e-book. E-book designers must use the most publishing software and an automatic function. It should link each item in the table of content with the related topic in the e-book headings
3. Headers & Footers: it should contain items such as page number, page headers and page footers
4. Topic Headings: the e-book need to have a variety of headings that let students know if they are
5. Lists: using list to explain new ideas in a good design that motivate students learning process
6. Photos, Graphics, Images: using images, photos, and graphics in a suitable way that reflect the e-book content and topics is a major goal of the e-book..
7. Links: Good design and use of the links bottoms by using colors, effects, shapes, background and fonts is an essential step in e-book design.
8. Quotes: in e-book design quote or indent are significant importance components. It should have Fancy quotation marks an author attribution.
9. Body Copy: e-book designers need to seriously consider how to design the typography for the e-book by choosing the write font, color, size, font type, and page background (Bloggers, 2011).

E-textbooks can be downloading on students tablets. it should have interactive diagrams, photos, Animations, 3D objects, and videos. The main components of the e-textbook are:

- Interactive galleries: students can see collection of interactive photos, use highlighting with different colors, and write notes.
- Study cards: during the study from the e-textbook all the notes and highlights students put will appear on the student study cards.
- sharing: during the study you can share idea or note with others directly onto Facebook wall or Twitter feed or email.
- Interactive textbooks: using extra reading materials, students can tap the name of the e-book and start reading it right away to finish their assignments (Apple Online Store, 2014).

Tablets as a tool that been used in education can't consider a replacement of the traditional teaching method. Using tablets in classroom from principles perspectives: teachers need training program on how to benefit from using this device in their classroom, it needs a special assessment process, and it support communication with other schools.

2. *The important of the study*

Educational technology is the new tool to support teaching and learning process. The rapid change in technology added new computer devices and software to be use in education. Tablet and e-textbook consider as a new way

to improve teaching and motivate students. It is a suitable way to encourage using computer applications on school. It could be a good support for educators and learners. The important of this research is to support the use of tablet applications to deliver subjects materials in a suitable way. It also introduce the best design process for class materials and e-textbook to be consider as a good teaching tool (Teacher Network, 2015).

3. Purpose of the study

The purpose of this study was to examine the effectiveness of using Tablet and e-textbook on first grade students achievments in theire core curriculum (scince, math, social study, arabic language, and english language) and school adminstration reflection toward that. The specific questions answered by this study were:

1) Is there a significant difference between the first grade students on the experimintal group (used Tablet on teching) achievments in theire core subject (scince, math, social study, arabic language, and english language)?

2) Is there a significant difference between the first grade students achievments of the expermintal group who used the Tablet in theire core curriculum (scince, math, social study, arabic language, and english language) and the control group who used the traditional teaching method?

3) What are the school administration openion toward using the tablet for teaching first grade students the core curriculum from the administration point veiw?

4. methodology

In action research there are five steps to conduct this investigation: (1) identification of research problem, (2) collection and organization of data, (3) interpretation of data, (4) action based on data, and (5) reflection on the result (Mills, 2010).

A. Sample

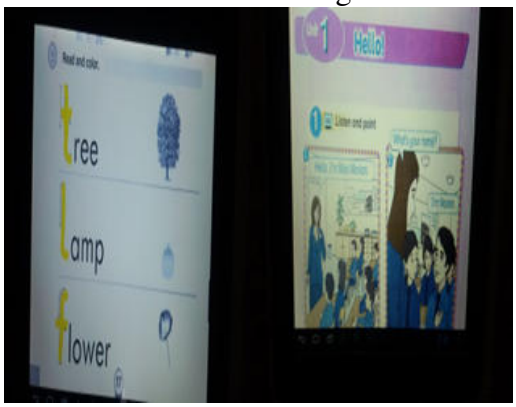
The school chosen for the study was a one private elementary school. There were 80 first grade students (sections: 1, 2, 3, 4) were involved in this study. Two sections were chosen randomly as experimental groups, the other two sections were signed as a normal group who used traditional teaching method.

B. Research Instruments:

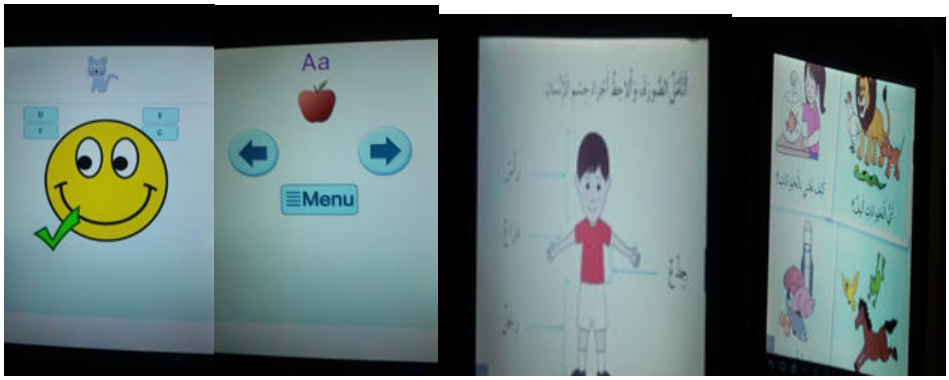
1- e-textbook on students Tablets

The school made an arrangement with a software company to design e-textbooks, activities, worksheets and games for first grade students' core subjects (science, math, English, Arabic). With the communication with teachers the software company designed the curriculum that included: e-textbook, activity, games, and worksheets. The company downloaded the curriculum items on students' tablets and train teachers to use the items in a suitable way. The design included for each subject: table of content, work sheets, table of figures, storage area, search engine, games, and group project area as shown on pic 1,2,3,4.

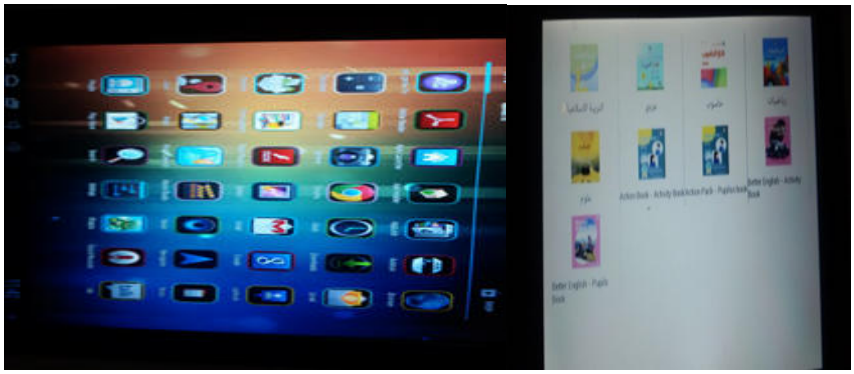
Pic 1: e-textbook for first grade curriculum



Pic2: Activities sheets on students Tablets



Pic 3: Tablets and e-textbook table of content



2- Achievement Test

The researcher with the help of the teachers designed an achievement test elements to measure students' achievement on their core curriculum (science, math, social study, Arabic language, and English language). The researcher used the tests result to measure the first grade students' achievement on their core subject. The test consisted of 25 items for each subject. The pre-test was given to ensure that the control group was similar to the experimental group in their previous skills.

3- Interview questions

The researcher wrote two interview questions to collect information about school administration opinion regarding the use of e-textbook on teaching and difficulty facing applying this teaching method. Also a follow up questions were added during the interview.

5. Procedure

1) At the beginning of the semester, students were begun getting in the classroom, settling down, turning their Tablets on and connecting to internet. The teachers gave students a brief instructions how to use the tablets and the e-textbook for each subject.
2) Researcher with the help of teachers design an achievement test to measure students' achievements on the core subjects
3) Teachers for each subject administer the pre-test for their students to ensure the equivalency of the two groups.
4) the e-textbook for each subject was downloaded on students Tablets. students started using theire Tablets under the supervised of their teacher.
5) Students follow teachers lesson plan that facilitate the instruction for the use of their e-textbook on all subject
6) In some cases students participated in self-learning process using the tablets activities, e-textbook, and practice sheets
7) Students also worked some times as a group to solve some problems or games or activities
8) The normal group studied using the traditional teaching method
9) After the end of the semester a post-test was administered for each subject for the two groups

10) Teachers correct the tests and the researcher used a suitable analysis method to analyze the data to answer the research questions.
11) The researcher conducted an interview with the school principle and the principle assistant to obtain their opinions regarding the use of e-textbook for first grade students' core curriculum.

6. Result and Discussion

The most prevalent findings of this study are:
Teachers for each subject administer the pre-test for their students to ensure the equivalency of the two groups. The data was analyzed; it showed that both groups were equivalents as shown on table1

Table 1: Pre-test for both experimental group and regular group

	GROUP	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Pre- test	Regular	42	65.95	12.589	-.588	82	.558
	Experimental	42	67.52	11.874			

The result releated to the first research question "Is there a significant difference between the experimintal group students (used e-texbook) on their achievments in theire core curriculum (scince, math, social study, arabic language, and english language)?" indicated that there are a significant deferent between the experimintal group students achevement on their pre test and post test as shown on table 2. It showed that their was a significant improvement on students core curriculum acheivements. which point to the positive result toward the use of e-textbook on student core curriculum learning and teaching processs.

Table 2. experemental group compare between pre test and post test

	Mean	N	Std. Deviation	t	df	Sig. (2-tailed)
Pre-test	67.52	42	11.874	-14.410	41	.000
Post-test	94.50	42	1.954			

The result related to the second reserch question "Is there a significant difference between the achievments of the expermintal group who used the e-texbook achievments in theire core subject (scince, math, social study, arabic language, and english language) and the control group who used the traditional teaching method?" revealed that it was significant in the side of the experiminal group as shown on table 3.

Table 3: compare between experimental post-test and regular post-test

	GROUP	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Post-test	Regular	42	90.93	4.228	-4.970	82	.000
Post-test	Experimental	42	94.50	1.954			

The result related to the third research question "What are the school administration openion toward using the tablet for teaching first grade students the core curriculum from the administration point veiw?"

This research was conducted on one private school in Jordan. The arrangment was made with one software company, they offerd Tablet for each student and they downlouded the core curriculum e-textbook, educational games, and activiteis. After the end of the semester the researcher made an interview with the school adminisrtations (the principle and the principle assisstant). Any change in education setting will not be work without the support of the school administration, from this perspective the researcher interviewed the school principle and his assisstant.

During the interview two main open questions were asked. First question was: What you openion of using Tablet and e-textbook for teaching corecurriculum for first grade students?. The second question was: what are the diffeculties and obesticales that faces the use of Tablet and e-textbook for teaching corecurriculum for first grade students? .

The resut related to the first interview question from the percpective of the school administration was:

- It was a motivated tool for learning process
- Student used the device very easy
- Students accepet and used the e-textbook in a good way
- Students used colers and pen very easy
- Student did not have to carry their heavy paper textbook
- Students used the device pen to write and answer questions and finish worksheets

Result related to the second interview question from the percpective of the school administration was:

- It was a lot of work and pressure on teachers
- Tablets bettery needed charg every few houers
- Students some times forget their Tablets at home
- Some techneqial prblems
- Students used the games or the device camera during the class instruction time
- The software company was not cooperative with the school
- Some lessones was not very well supported with the nedded multimedia

7. Conclusion

The main aim of this study was to investigate the effect of using e-textbook on first grade students' achievement on their core curriculum (science, math, English, Arabic) compared to the use of the traditional teaching method. It also, investigated the school administration reflection toward the use of Tablet as a teaching tool. The e-textbook was downloaded on each student's Tablet. The duration of the study was on school semester. The result revealed that using the e-textbook on students' tablets was a successful way of teaching method. It improved their achievements of their core curriculum. Green & Hannon (2006) as we think of technology change the digital technology is becomes part of our children daily activities. Hardware and software become cheaper and easy to use by small children. Barseghian, T. (2011) the use of Tablet was increased. For example, 1, 5 million devices according to Apple are already in use in education settings. More than 20,000 software applications were built to serve educational purposes.

This finding was supported with many researches that encourage the use of e-textbook and tablets on teaching. Rockinson-Szapkiw., Holder, & Dunn (2011) stated that the use of E-textbooks to study the course materials compared to using the printed textbook was very motivated from the students' perspective. From the administration perspective, it was a good teaching tool. It was useful and motivated for students. At the same time a lot of work and pressure on teachers. They recommended having a technical assistant to help students and make teacher concentrate on the curriculum more than on the technical problems. Long, Liang, and Yu (2013) found that students, teachers, and school administrators need to have more computer educational software materials that designed to support specific educational goals. They need to have training to learn the use of the new software applications and device. To introduce tablets in school, more system and instructional strategies need to be design in a way that help and make the implementation process easy to administrators, teachers and students. Adıgüzel, Gürbulak and Sarıçayır (2011) stated that teachers needed more training program to learn how to use materials and devices to apply technology in their teaching process. During the process of this study the researcher communicate with teachers, students, and administration staff. She recommended that using Tablet and e-textbook is a good tool for teaching and it motivated students learning. The school administration was highly supported and provided a good environment to help teachers and students during the implementation process. It recommended using Tablets applications and e-textbook in education setting. At the same time principles need to support teachers by providing them with training program and technical support.

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