The Effect of Adaptive Text Presentation Techniques on Acquires Expressive Reading Skills of Elementary School Students

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Abstract

The study examines the effect of adaptive text presentation techniques (conditional/ stretch) on expressive reading skills of elementary school students. The participants are two experimental groups: Group A (n = 10) were taught content through adaptive conditional text presentation techniques, and group B (n = 10) were taught content through the adaptive stretch text presentation techniques. The results showed that the adaptive text presentation techniques (conditional/ stretch) have an affect on enhancing students' expressive reading skills. Also, the comparison of the techniques showed no significant difference between the mean scores of the two groups. In light of these results, it is recommended that an expansion of the use of adaptive presentation techniques for enhancing students' skills in elementary schools is needed.

Keywords: Adaptive text presentation techniques, Adaptive conditional text presentation techniques, Adaptive stretch text presentation, Expressive reading skills, Elementary school students.

1. Introduction

The education sector today is characterized by its rapid change, as a result of being affected by technological innovations, which greatly contributed to the innovation of a several of electronic tools that can be used to promote the educational process and develop its outputs (Lo, Chan &Yeh, 2012). In light of the advent of many technologies to improve the various fields of life, was necessary to take what supports education in educational institutions at their various levels in order to reach a society free from ignorance and illiteracy, a society that seeks to make education an enjoyable, a society that forces workers in educational institutions to face technological challenges and radical changes in the characteristics of the learner, which is increasing at a high speed, and with it, the challenges of the current educational systems reality (Schneider &Preckel, 2017). Every learner has an individual way of learning, there is a visual, auditory, and kinaesthetic learner, the learning environments and their contents needed to take into account those patterns while designing and preparing them for the electronic contents was necessary (Raufi et al., 2015).In this context, adaptive technology has been specifically designed to overcome the saying "one scale fits all" as it works to provide a rich framework that meets the needs of online learners, and through the user model, it provides structures of links within the electronic learning environment that allow the learner to go to the information that interests him (Alfonseca, Rodríguez, &Pérez, 2007).

The objective of adaptation is to adapt the content with the various needs of learners or to individualize education so that each learner receives the content by the techniques that suit him; therefore, what is adapted in the educational process is the educational content (Elmabaredy, Elkholy&Tolba, 2020). The content is prepared in different techniques that suit the different patterns of learners, thus adapting the techniques of presenting the content, where that the same content is presented to students in different techniques such as it is presented in auditory techniques and visual techniques, this process is called adaptive presentation (Elmabaredy, Elkholy&Tolba, 2020).

The adaptive presentation includes the adaptive text presentation techniques and the adaptive multimedia presentation techniques. The adaptive text techniques is one of the adaptive hypertext systems that express adaptive learning that provides learners with a personal learning environment that includes different learning resources, in addition to adaptive content that includes multiple media such as text, pictures, audio, video, and achieves the active learning, and personal; individualized learning is the primary feature of adaptive learning (Qu, Wang &Zhong, 2009; Phobun&Vicheanpanya, 2010).

The personal and individualized environment of learning done by adaptive presentation techniques adapts pages content a user accesses with goals, knowledge, and other user characteristics (Brusilovsky, 1997).In addition, the adaptive presentation requires deciding what knowledge should be presented and how it should be arranged and shown, depending on the context and student (Bunt, Carenini&Conati, 2007).It is also possible to use the

adaptively changing presentation to confirm/reconfirm the content or to propose links for a user (Knutov, Bra &Pechenizkiy, 2009).

ElJanati, Maach, and ElGhanami (2019) mentioned that studies in the adaptive presentation field are insufficient and that the standard content presentation makes students find it difficult to attend classes that do not suit their desires and needs.The current study is concerned with adaptive text presentation (Conditional text and Stretch text). With the conditional text technique, all possible information about a notion is split into many segments of text; every segment is related to a condition represented in the model of the user regarding the level of user awareness, where this system presents only the segments that the condition is valid (Aydoğdu&Yalçın, 2020). The stretch text technique, shuts off various segments of the content based on the level of user knowledge (Aydoğdu&Yalçın, 2020).

Generally, techniques of the adaptive presentation can lead to improving the skills of the student such as Expressive reading skills. Expressive reading skills are the process of decoding and converting printed symbols into sounds that form the audible spoken language (ElJanati et al., 2019). Skills represent one of the important dimensions in the educational process that must be focused on, as they help the individual to face problems in his life, as well as if the individual acquires a certain skill that leads to the performance of the work very efficiently (Murray & Pérez, 2015). Many researchers were observed that there is a low level in acquires skills, essentially that related to using platforms in the presentation of the lessons, also they observed that adaptive presentation content is presented depending on one standard model for all students that do not meet their desires, needs and taking into account their differences individual (Knutov et al., 2009). Based on the report of UNESCO (2018), should improve student's skills and qualify them for the digital age. According to those recommendations, the adaptive text presentation technique can be contributing to the enhancement outcomes of the students that reflect the performance that includes a set of skills (Laar, Deursen, Dijk&Haan, 2020). Therefore, this study seeks to answer the following questions:

RQ1: What is the effect of the adaptive conditional text presentation technique on acquire expressive reading skills of elementary school students?

RQ2: What is the effect of the adaptive stretch text presentation technique on acquire expressive reading skills of elementary school students?

RQ3: Which technique of the text adaptation (conditional/stretch) has the highest effect on enhancing acquires expressive reading skills of elementary school students?

2. Literature Review

2.1 Adaptive Learning

Adaptation means that something has become in accordance with a specific condition and attribute, and the adaptation of the person means that harmonizes and agrees with the

circumstances or makes his inclination, behavior, or character similar to something (Kobsa, Müller &Nill, 1994).Adaptation in learning environments is a relatively modern terminology, as it is one of the most important features of e-learning systems, and adaptation means the ability to be aware of the user's behavior so that it takes into account the level of knowledge, as well as providing the appropriate material for each user (Laar et al., 2020).

There are several definitions of adaptive learning, Wang, kao, and dai(2019) defined it as a system that monitors the important characteristics of the learner and adjusts the learning environment to suit the learner and to provide support and reinforcement. It is defined as an exciting pedagogical approach, which can provide individualized learning for students by dynamically changing the difficulty of the content based on a continuous evaluation of their capabilities (Wanget al., 2019). Murray and Pérez (2015) defined it as providing a customized educational resource for students, especially learning content, as this resource guides individuals to find educational content by suggesting customized educational paths that suit their needs.

Kara and Sevim (2013) mentioned the advantages that make adaptive learning represented in efficiency and effectiveness, especially with the advancement of technology, where the development in program hardware helps to employ adaptive learning in different fields of science; adaptive learning environments allow teachers to provide different experiences to their students based on their needs, characteristics, and interests, and this is what is difficult to provide in traditional learning environments, especially in classrooms with high student density, as is the case in most developing countries; The advanced technology enables learners to choose adaptive content according to the level of knowledge of the learner, or the current knowledge state, and the systems can monitor the process of building knowledge for each learner simultaneously, and provide immediate feedback according to the responses of each learner; The interactive teacher's role in the system is centred on helping the learners to master each skill, giving short tests about the content, keeping the result confidential for each learner, and providing additional assistance.

2.2 Teaching Using Adaptive Learning

Teaching using adaptive learning includes a set of basic tasks that include determining the content to be covered, learning objectives to be achieved, learning time, resources and appropriate teaching techniques, and evaluation techniques (Kellner& Jacobs, 2015).Teachers also have a major role in the application of adaptive learning, as the teacher must know the characteristics of learners, identify appropriate strategies for content and are compatible with learners, and keenness to follow up students and provide them with support them (Bower, 2015).Dziuban, Moskal, Cassisi, and Fawcett, (2016) indicates that the teacher should be familiar with the principle of instructional design in order to design good content and achieve the desired goals of this type of education.

Bower (2015) suggested a framework for designing adaptive learning that includes identifying appropriate ways to represent information so that it is commensurate with the

cognitive requirements of learners, such as using speaking, sound, or drawing tools; and the design of multimedia clips due to their effectiveness in improving learning; in addition to a diagram to denote the different stages, clarify the interactions, learning strategies, tools, and content, develop learning materials and adaptive learning strategies with choosing the appropriate authoring tool for the content and system, and start implementing the content design using the authoring tool and then experimenting with the content by an experimental group and knowing the strengths and weaknesses and modifying them.

2.3 Adaptive Media Technology

Adaptive media technology is defined as systems that offer users a lot of freedom across super spaces via the internet, and integrate hypermedia with the user model, so the content provided by the system corresponds to the user's knowledge, goals, and preferences (Phobun&Vicheanpanya, 2010).Adaptation in adaptive media systems generally includes two areas: adaptive presentation and adaptive navigation, and each field has different technologies (Phobun&Vicheanpanya, 2010; Khamees, 2016; Elmabaredyi, 2020).

2.3.1 Adaptive Navigation

Adaptive navigation technology aims to support the student as he navigates the education course by changing and adapting the form of links according to his goals and level of knowledge (Khamees, 2016). Adaptive navigation is done by adding at least one of the following concepts:

- Annotation: Links are enriched with additional comments or visual cues in order to provide the student with information that allows them to know their content before choosing them; these comments can be in the form of text, icons, colored texts, or texts of different types and different sizes of fonts (Khamees, 2016). There are three types of comments (Dziuban et al., 2016):
    - History-Based Annotation: to indicate whether the link has been visited or not.
    - Knowledge-Based Annotation: used to denote a student's knowledge status by topic related to the node.
    - Prerequisite-Based Annotation: used to define the educational prerequisite concepts for each page according to each student's knowledge status. This type of comment is used in the form of a "help" button that the student presses if he wants to see the background knowledge necessary for the concept under study.
- Sorting: The links are arranged and rearranged on the pages according to the student's model and some of the student's important characteristics in order to place a link at the beginning of the list indicating its importance.

- Hiding: The links hiding technique helps to limit and control the volume of information within the navigation space in order to reduce the student's cognitive overload (Phobun&Vicheanpanya, 2010).
- Direct guidance: It is the simplest techniques to present and provide the student with adaptive navigation, as it indicates the next best node that must be visited, and does not give him the flexibility to ignore the system's proposals, and is usually used in educational systems that apply curriculum sequencing technique (Dziuban et al., 2016).
- Mapping: Amap is displayed for the student that reflects the general structure of the interconnected space of the educational curriculum and determines its position within this space. Uses hiding, direct guidance, and annotation technology to support the curriculum map view(Khamees, 2016).

2.3.2 Adaptive Presentation

Adaptive presentation technology aims to adapt the content of a page by adapting the text or multimedia presentation techniques when presenting it to the student by hiding some details that are not among his current interests (Bunt, et al., 2007). (Khamees, 2016) mentioned that there are several technologies help to achieve this, and they are:

- Conditional text: The concept of a course is divided into parts of texts, as each part is associated with a condition indicating the type of student and his level (beginner, intermediate, expert).
- Stretch text: It is used to give students additional clarifications related to a topic by clicking on hot words or active links.
- Page variants: A different set of pages have been linked with a concept of the educational course so that each group is presented according to the type of the student, his knowledge level, or his learning style.
- Fragment variants: Each page is divided into several fragment variants, and several different contents are prepared for each fragment so that the appropriate content is chosen according to the characteristics of each student.
- Frame-based: A concept of the course was presented in the form of a frame structure, whereby each slot is linked to different contents of the same concept or to other frames so that the appropriate opening is chosen and displayed according to the characteristics of each student.

According to Elmabaredy (2020), the adaptive presentation based on adaptive media technology has a set of important educational advantages and values, including represented a source of knowledge for the learner in answering his questions and includes multiple types of knowledge that play an important role in the adaptive system, and it works on adopting and adapting the level of the educational material and the way it is presented accordance with the

style and capabilities of the learner, and contribute significantly to improving the performance of learners in various skills such as expressive reading skills.

2.4 Expressive reading skills

Reading is one of the most important skills that a person acquires, and works to develop it in his life, as it is an indispensable means of communication. Reading, as indicated by Morrison and Wilcox (2020), is a complex mental process that includes the interpretation of the symbols that the reader receives through a sample; this process requires understanding the meanings and it requires linking personal experience with meanings, which makes the psychological process associated with reading complex to a large degree. Pereira, Vieira and Teófilo (2019) pointed out that reading is a process that links the language of speech with written symbols and includes the meaning and the symbol indicating the pronunciation. Proficiency in reading is intended: reading comprehension, analysis, investigation, and contemplation, it has been found that the student who excels in reading often excels in other subjects (Allan, 2019).

Typographical sign and their interpretation, endowment and hyphenation signs, the system of paragraphs, the use of different fonts, punctuation marks, and margins, and the use of references to the reference at the bottom of the page are also among the basic skills that we should mean by their formation in teaching reading (Gramatkovski, Kochoska, Ristevska&Sivakova, 2017).There is no doubt that expressive reading depends to a large extent on understanding the reciter, criticizing it, and interacting with it, and this component requires the addition of some tendencies and habits such as starting to read in the spirit of appreciating what the topic presents, reflecting on it and what it presents and embodying the characters, values, and emotions in it, and the emotional participation of the writer in social situations affective states, or issues that are dealt with in the written material, and the emotion of the writer's style in light of the images, the text of the presentation and the format of the phrase (Al- Rahma, 2020). The use of a variety of mediums to present courses, books, and stories contribute to making students exposed to a wide range of vocabulary that they may not normally encounter in their own reading and speaking, which leads to acquires them skills in reading and develop them(Al- Rahma, 2020).

2.5 Previous Studies

Given the importance of adaptive media technology and its educational characteristics, some previous studies have dealt with it and focused on employing it in the development of various aspects of learning.

Tsoulouhas, Georgiou, and Karakos (2012) debated with the adaptive presentation of content in synchronized learning environments and concluded that the employment of adaptive media technology-based presentation provided dynamic electronic content that adapts to the changes occurring within the learner model. Mohammad's study (2015) aimed to measure the effect of different interaction patterns (teacher-learner / learner-learner) in adaptive hypermedia via the web on developing web design skills among primary school

students, and the results showed that there were no statistically significant differences between the mean scores of the experimental groups' students in the post-application of the achievement test and the assessment card due to the effect of the difference in the interaction pattern (teacher-learner / learner-learner).

Ahmed's study (2015) discussed two types of adaptive presentation based on an extended and dark text in an electronic learning environment and their impact on the development of some programming and self-organizing skills among students of educational technology, and the results showed the presence of an effect of both types on the development of achievement, programming and self-organization skills of the two research groups, and the absence of significant differences Statistically between the mean scores of the two research groups (extended / dark text) in achievement, programming skills, and self-organization.

The study of Ramoud and Ramadan (2016) dealt with a model for the adaptive display of hypermedia content and measuring its impact on the development of photographic skills among educational technology students, and the results concluded that there is an effect of the model in developing students' skills. In the same context, Khalil's (2018) study dealt with the relationship between the adaptive presentation pattern (fragment/pages) and the style of learning in a virtual learning environment and its impact on developing the skills of producing 3D elements and engaging in the learning of educational technology students, the results showed that the largest effect was for the fragment variants pattern compared to the page pattern.

The study of Elmabaredy et al. (2020) aimed to develop and compare two different techniques of adaptive presentation techniques (adaptive multimedia/ frames). Moreover, this study aimed at investigating the effect of both treatments on improving learning outcomes. The results showed that the adaptive presentation techniques have an effect on enhancing students' learning outcomes. Also, the comparison of the techniques showed a significant difference between the mean scores of the two groups of students. The study concluded that the adaptive multimedia-based technique showed a higher impact relatively than the frame-based technique.

By reviewing previous studies, it is evident that some studies have focused on dealing with adaptive presentation techniques based on adaptive high-media technology, such as fragment, pages, extended text, dark text, and stretch text, and reached their effectiveness and importance in improving the learning process, while other studies focused on techniques of adaptive navigation based on adaptive media, the current research is characterized by dealing with adaptive text presentation -one of the techniques of adaptive presentation - and studying its impact on the development of expressive reading skills among elementarystudents.

3. Research Method

3.1Respondents

All respondents in this study (n = 20) were sixth-grade students, Abdullah bin Masoud elementary School, Jeddah. The respondents were randomly divided into two experimental

groups: Group A (n = 10) taught content through the adaptive conditional text technique and group B (n = 10) taught content through the stretch text technique.

.3.2 Research Design

This study aims to investigate the effect of the adaptive conditional text technique on improving expressive reading skills and investigate the effect of the adaptive stretch text technique on improving expressive reading skills, furthermore, comparison between adaptive conditional text technique and stretch text technique, thus, the depending on quasi-experimental techniques is justified (Muller, 1985; Scher, Kisker&Dynarski, 2015). This study used a quasi-experimental technique by pre-testing of the expressive reading skills, then apply the experimental treatments and intervention, then post-test of the expressive reading skills. Therefore, the study involved a comparison of the results of the pre-test and post-test to assess the impact size of the responses of the participants. Thus, instruments involved a test to measure the skills performance of students, also, create an adaptive learning program by following the techniques of designing educational systems according to the ADDIE model based on the PDCA quality model,since it is a typical model and defined by consistency and coverage of all phases of instructional design (Shelton &Saltsman, 2011; Battou, Baz&Mammass, 2017).

3.3 Materials and Instruments

For the design and development of an adaptive media technology environment, the ADDIE general model for educational design and development has been relied upon, as it is a standard model and is characterized by clarity and comprehensiveness for all stages of educational design, and the general model is based on five basic stages, namely: analysis, design, development, implementation, and evaluation.

- Analysis: At this stage, students 'characteristics were analyzed, and the research problem analyzed and identified, as well as the identification and analysis of the elementary students' needs for expressive reading skills, in addition to analyzing the general objectives, and identifying and analyzing the content of expressive reading skills.

- Design: In this stage, the scenario was designed, the procedural objectives were prepared and formulated, the sources were identified and selected, which were represented by texts in addition to internet links, as well as the definition of learning strategies and evaluation techniques.

- Development: In this stage, the actual implementation of the scenario was carried out, and the authoring programs were used to produce learning resources and media, and the development and production of the environment. Adaptive content was authored and produced using Articulate Storyline software, where the content's main and subpages were designed, and then the link between each page and a test was designed to measure students' previous skills and record it in the form for each student, and then designing a list that includes many cultural sources and hypermedia.

- Implementation: At this stage, the content was packaged according to SCORM standards, and then uploaded to the Internet via the Moodle Learning Management System.
- Evaluation: At this stage, the adaptive texts technique was presented to a group of arbitrators specialized in the field of educational technology to review the content design and make any observations or suggestions, and the technique was also applied to an exploratory sample of 16 students (other than the basic research sample), to monitor any difficulties or problems that students may encounter.

Preparation of the achievement test: The test aimed to measure the elementary students' achievement of the cognitive aspects of expressive reading skills, in order to build the test a table of specifications was prepared and then the test was formulated, and the total number of questions was (7) questions with sub-questions of each, prepared electronically and that by relying on the Moodle learning management system tools, and by presenting the test to a group of arbitrators to verify its validity, some adjustments were made. Then, the test's reliability was verified by calculating the Alpha Cronbach coefficient, and its value was (0, 83).

After students log in to the learning environment, they are instructed to open and answer the pre-test and follow them until everyone has finished taking the exam. During the second semester of the academic year 2020/2021, the implementation of the basic research experiment was started. Then, access to the displayed content according to adaptive conditional text technique and adaptive stretch text technique, and all students followed up the presentation and practiced the required skills and applied them, activities were then implemented, and students' learning was monitored, and communicated electronically with them to respond to questions and inquiries and evaluate activities. The post-test of the instrument included re-application of the achievement test to the experimental research group, to measure the change in performance as a result of exposure to experimental treatment.

4. Results and Discussion

To answer the first question, which stated: "What is the effect of the adaptive conditional text presentation technique on expressive reading skillsof elementary school students ?, the validity of the first hypothesis was tested, which stated:" There is a statistically significant difference between the mean scores of the experimental group students in the two pre-tests, and the post-test for the achievement test in favor of the post-test, and to verify the validity of this hypothesis, the independent sample "T" test was used, as well as the calculation of the effect size using the η^2, and the results were as shown in Table (1) following:

Table (1): results independent sample "T" test and η^2

Achievement test	N	Mean	St,dev	T	df	Sig	η^2
Pre	30	16.83	3.47	3.301	58	0.002	0.158
Post	30	19.90	3.72				

Table (1) showed that there are statistically significant differences between the mean scores of the students of the experimental group in the pre and post-test of the achievement test in favor of the post-application, as the calculated value of "T" is (3.301), which is statistically significant at the level of significance (0.05) It is also evident that the value of "η^2" is (0.158), which indicates the great influence of adaptive conditional text presentation technique on expressive reading skills among students of the elementary level, and accordingly the first hypothesis of the study is accepted.

This result is consistent with the results of Ramoud and Ramadan (2016) and Khalil (2018), but differs from Ahmed's study (2015). It is evident from the previous results that the adaptive conditional text presentation technique has an affect on improving expressive reading skills of the elementary school students, due to the characteristics of adaptive media systems and their capabilities in determining students' previous knowledge and then harmonizing them with the available information and skills, and then directing each student to the path that suits him according to his experiences and skills needs, as well as learning through adaptive media technology is done individually. For each student according to his own pace and pace, which helped students to follow up skills, train them, and implement them as well as implement the required activities with perfection

To answer the second question, which states: "What is the effect of the stretch text presentation technique on expressive reading skillsof elementary school students?" The validity of the second hypothesis was tested, which stated the following: "There is a statistically significant difference between the mean scores of the experimental group students in the two pre-tests and the post test for the achievement test in favor of the post test. To verify the validity of this hypothesis, the independent sample test "T" was used, As well as calculating the effect size using η^2, and the results are as shown in Table (2) the following:

Table (2): results independent sample "T" test and η^2

Achievement test	N	Mean	St,dev	T	df	Sig	η^2
Pre	30	17.63	2.93	3.68	58	0.001	0.190
Post	30	20.60	3.30				

Table (2) showed that there are statistically significant differences between the mean scores of the students of the experimental group in the pre and post-test of the achievement test in favor of the post-application, as the calculated value of "T" is (3.680), which is statistically significant at the level of significance (0.05) It is also evident that the value of "η^2" is (0.190), which indicates the great influence of adaptive stretch text presentation technique on expressive reading skills among students of the elementary level, and accordingly the second hypothesis of the study is accepted.

The technology of stretch text presentation provided each student with the ability to repeat, replay and follow up skills more than once, as well as the ability to stand and focus on some important performances, which helped them master the required skills, in addition to the adaptive presentation of the content that included dividing the main skills into sub-skills,

and then presenting them In sequential and logically organized performances, help students perceive the relationships between major and sub-skills and performances, thus facilitating their application, training, and practice until mastery; This result is consistent with studies of Tsoulouhas et al. (2012) and Muhammad (2015).

To answer the third question, which states: "Which technique of the text adaptation (conditional/stretch) has the highest effect on enhancing expressive reading skillsof elementary school students?" The validity of the third hypothesis was tested, which stated the following: "There is a statistically significant difference between the mean scores of the experimental group students in the two techniques (conditional/stretch). To verify the validity of this hypothesis, the independent sample test "T" was used, As well as calculating the effect size using η^2, and the results are as shown in Table (3) the following:

Table (3): results independent sample "T" test and η^2

Techniques	N	Mean	St,dev	T	df	Sig	η^2
Conditional	30	19.90	3.72	0.772	58	0.443	0.010
Stretch	30	20.60	3.30				

Table (3) showed that there are no statistically significant differences between the mean scores of the techniques, as the calculated value of "T" is (0.772), which is not statistically significant at the level of significance (0.05). It is also evident that the value of "η^2" is (0.010), which indicates the do not difference influence of adaptive text presentation techniques on expressive reading skills among students of the elementary level, and accordingly, the third hypothesis of the study is rejected.

This indicates that a good design of adaptive text presentation techniques, and adjusting their capabilities to take into account the students' preferences leads to the opportunity for each student to choose what suits him and his preferences of techniques, which leads to motivating students, and pursue learning through preferred media and sources, as well as employing their different senses appropriately. During skills training, the provision of links and external sources supports the learning of skills and makes the learning environment richer, thus developing students' cognitive and skill aspects.

5. Conclusion

The study examines the effect of adaptive text presentation techniques (conditional/ stretch) on expressive reading skills of elementary school students. Based on the study results, shows that expressive reading skills are affected by adaptive conditional text presentation techniques (conditional/ stretch). So, for the students to be acquired with these skills, it is necessary to promote adaptive conditional text presentation techniques (conditional/ stretch). The results also demonstrate that do not different influence of adaptive text presentation techniques on expressive reading skills among elementary school students. Therefore, to enhance skills, it is necessary to give priority to promoting the skills of students through all adaptive presentation techniques.

6. Recommendations

In light of the findings, the researcher recommends the necessity of using adaptive text presentation techniques in acquiring expressive reading skills and encouraging teachers to use them, as the results of the current study emphasized their effectiveness in acquiring expressive reading skills among elementary school students. Also, there is a necessity of educating teachers about the importance of these technologies and training and qualifying them to use modern teaching methods for developing students' skills. In addition, further studies should be conducted to investigate the effectiveness of using adaptive presentation techniques on new variables such as other reading skills or creative writing.

References

Ahmed, H. (2015) Two modes of presenting adaptive content based on the extended and dark text in an electronic learning environment according to the analytical and holistic thinking style and their impact on the development of some programming and self-organizing skills *Journal of Educational Technology*, a series of refereed studies and research, - 25 (3) 199 237.

Alfonseca, E., Rodríguez, P., & Pérez, D. (2007). An approach for automatic generation of adaptive hypermedia in education with multilingual knowledge discovery techniques. *Computers & Education*, *49*(2), 495-513.

Aydoğdu, Y. Ö., &Yalçın, N. (2020). A Web-Based System Design for Creating Content in Adaptive Educational Hypermedia and Its Usability. *Malaysian Online Journal of Educational Technology*, *8*(3), 1-24.

Battou, A., Baz, O., &Mammass, D. (2017). Toward a framework for designing adaptive educational hypermedia system based on agile learning design approach. In *Europe and MENA Cooperation Advances in Information and Communication Technologies* (pp. 113-123). Springer, Cham.

Bower, M. (2015). Design and implementation factors in blended synchronous learning environments: Outcomes from a cross-case analysis. *Computers & Education*, *86*, 1-17.

Brusilovsky, P. (1997). User as student: Towards an adaptive interface for advanced web-based applications. In *User Modeling* (pp. 177-188). Springer, Vienna.

Bunt, A., Carenini, G., &Conati, C. (2007). Adaptive content presentation for the web. In *The adaptive web* (pp. 409-432). Springer, Berlin, Heidelberg.

Dziuban, C. D., Moskal, P. D., Cassisi, J., & Fawcett, A. (2016). Adaptive Learning in Psychology: Wayfinding in the Digital Age. *Online Learning*, *20*(3), 74-96.

ElJanati, S., Maach, A., &ElGhanami, D. (2019). SMART education framework for adaptation content presentation. *Procedia Computer Science*, *127*, 436–443.

Elmabaredy, A., Elkholy, E., &Tolba, A. A. (2020). Web-based adaptive presentation techniques to enhance learning outcomes in Middle school students. Research and Practice in Technology Enhanced Learning, 15(1), 1-18.

Gramatkovski, B., Kochoska, J., Ristevska, M., &Sivakova, D. (2017). The expressive reading as an opportunity for improvement of the preschool children's speech. *International Journal of Innovation and Research in Educational Sciences*, *4*(1), 99-104.

Kara, N., &Sevim, N. (2013). Adaptive Learning Systems: Beyond Teaching Machines. *Contemporary Educational Technology*, *4*(2), 108-120.

Khalil., S. (2018). The relationship between the adaptive presentation pattern (sections/pages) and the learning style (sequential/holistic) in a hypothetical learning environment and its impact on the development of skills that produce 3D elements and engage in learning for educational technology students. Journal of Studies and Research, (35), 279 - 392.

Khamees, M. (2016) Adaptive e-learning environments, work of the Educational Technology Conference and Global Challenges of Education (pp. 251-237), Arab Society for Educational Technologies, Cairo

Knutov, E., De Bra, P., &Pechenizkiy, M. (2009). AH 12 years later: a comprehensive survey of adaptive hypermedia techniques and techniques. *New review of hypermedia and multimedia*, *15*(1), 5-38.

Kobsa, A., Müller, D., &Nill, A. (1994). *KN-AHS: An adaptive hypertext client of the user modeling system BGP-MS* (pp. 31-36). Univ. Konstanz, Informationswiss..

van Laar, E., van Deursen, A. J., van Dijk, J. A., & de Haan, J. (2020). Measuring the levels of 21st-century digital skills among professionals working within the creative industries: A performance-based approach. *Poetics*, *81*, 101434.

Lo, J. J., Chan, Y. C., &Yeh, S. W. (2012). Designing an adaptive web-based learning system based on students' cognitive styles identified online. Computers & Education, 58(1), 209-222.

Mohammad, S., S. (2015) The effect of different interaction patterns in adaptive hypermedia via the web on developing web design skills among elementary school students (master's thesis), Faculty of Specific Education, Ain Shams University

Muller, E. (1985). Application of experimental and quasi-experimental research designs to educational software evaluation. *Educational Technology*, *25*(10), 27–31

Murray, M. C., & Pérez, J. (2015). Informing and performing: A study comparingadaptive learning to traditional learning. *Informing Science: The International Journal of an Emerging Transdicipline*, *18*, 111.

Pereira, L. C., Vieira, F., &Teófilo, A. (2019). Expressive Reading and Dramatization of Stories in Teaching English to Young Learners. *CLELE journal*, 7 (1), 45-60.

Phobun, P., &Vicheanpanya, J. (2010). Adaptive intelligent tutoring systems for e-learning systems. *Procedia-Social and Behavioral Sciences*, *2*(2), 4064-4069.

Qu, Q., Wang, Y., &Zhong, Z. (2009). Rapid and quantitative detection of Brucella by up-converting phosphor technology-based lateral-flow assay. *Journal of Microbiological Techniques*, 79(1), 121-123.

Rammoud., R & Ramadan Abd. (2014). The relationship between adaptive navigation pattern (showing/hiding links) with the mobile e-learning environment and the learning style (sensory/intuitive) and its impact on the development of innovative thinking, *Arab Studies in Education and Psychology,* 563) 53 - 114

Raufi, B., Ferati, M., Zenuni, X., Ajdari, J., &Ismaili, F. (2015). Techniquess and techniques of adaptive web accessibility for the blind and visually impaired. *Procedia-Social and Behavioral Sciences*, *195*, 1999-2007.

Scher, L., Kisker, E., &Dynarski, M. (2015). Designing and Conducting Strong Quasi-Experiments in Education. Version 2. *Decision Information Resources, Inc*.

Schneider, M., &Preckel, F. (2017). Variables associated with achievement in Middle school students: A systematic review of meta-analyses. *Psychological bulletin*, *143*(6), 565.

Shelton, K., &Saltsman, G. (2011). Applying the ADDIE model to online instruction. In *Instructional design: Concepts, techniquesologies, tools and applications* (pp. 566-582). IGI Global.

Morrison, T. G., & Wilcox, B. (2020). Assessing Expressive Oral Reading Fluency. Education Sciences, 10(3), 59.

Tsoulouhas, G., Georgiou, D., &Karakos, A. (2012). Adaptive content presentation in asynchronous learning environments. *International Journal of Emerging Technologies in Learning (iJET)*, *7*(2), 43-49.

Wang, T. H., Kao, C. H., & Dai, Y. L. (2019). Developing a web-based multimedia assessment system for facilitating science laboratory instruction. *Journal of Computer Assisted Learning, 35*(4), 529-539.

Appendix A

Questions for the second-year students in the College of Education test in reading skills.

Read the paragraph, and then answer the questions that follow:

The two active students study in a Saudi school and their hobby is exploration. One evening, they went to the bus station and I meet them while they were orienting to the box office and I saw them buy two round-trip tickets from Riyadh to Jeddah. Then I asked them where are you going, and what are you going to do there? Then they answered: They want to visit the orphanage in Jeddah.

1- Who are we talking about in the paragraph?

2- What is their hobby?

3- Where are they wanted to travel?

4- What are they going to do there?

5- Vocalize the following words completely in their grammatical form:

- Are active.
- Their hobby.
- Exploration.
- They went.
- Station.
- Encountered.
- I met them.
- They buy.
- We visit.
- The orphanage.

6- A difference between the verb, the subject, or the object of the following words, and put them in the appropriate place for them:

* Encountered   * They buy * Two tickets   * The orphanage

Verb	Subject	Object

7- Translate the following words into another language:

- Are active...........................
- Their hobby   …………………..
- Travel   …………………..
- Exploration   …………………..
- Station…………………..
- Encountered…………………..
- Box office   …………………..
- Orienting…………………..
- They buy…………………..
- Two tickets…………………..