

The Effect of the Smart Board on the Academic Achievement of Students with Learning Disabilities in the English Language

Mohammad Abedrabbu Alkhalwaldeh¹, Mohamad Ahmad Saleem Khasawneh²

^{1,2}Special Education Department, King Khalid University

ABSTRACT

The current study aims to investigate the effect of using the smart board on the academic achievement of students with learning disabilities in English language. This technology is one of the techniques that has gained the attention of educational institutions in a large number of developed countries, because it has a clear impact on the educational process, students' cognitive and achievement levels, and the formation of positive trends for them. To achieve the objectives of the study, a sample of (16) students with learning difficulties from the first to sixth grades was selected in Irbid Governorate schools for basic education in the first semester of 2021/ 2022. The study instrument was applied to them represented in pre-diagnostic tests in the English language at six different levels according to the curricula for the basic classes prepared by researchers, (15) session for (8) weeks, and after the end of the program, the diagnostic test was re-applied to the same sample of students, as the results showed that there were statistically significant differences between the pre-and post-tests in favor of the post-test. This study recommended the need to develop the educational process and strategies for employing educational materials in the smart board, with the need to provide the smart board in all schools in a sufficient number, especially for the stage of the first cycle of basic education. Also, the necessity of equipping schools with the capabilities that allow the proper employment of educational technology innovations. In addition, encouraging parents of students with learning disabilities to practice computerized educational enrichment activities.

Keyword: - Smart board, Academic achievement, Learning disabilities, and English language

1. INTRODUCTION

The smart board is one of the latest methods used in the interactive process. It is a special type of interactive sensitive whiteboard that is dealt with by touch or by pen and written on it electronically. It can also be used and displayed on the computer of various applications (Jung & Suhyun, 2012). The use of this technology in the classroom provides many advantages, including replacing more attractive and interesting ways with traditional presentation techniques, the ability to control the displayed texts, images, and graphics, making use of Internet resources and materials in a creative and effective manner, as well as providing space for storing educational materials and facilitating the ability to retrieve them quickly (Onder & Aydin, 2016). In addition to providing opportunities to give immediate feedback, providing an opportunity for group viewing of the displayed content, using computer software in the classroom without being next to the device, designing computerized educational activities equipped with multimedia, and the ability to add phrases and explanations to educational videos, as well as allowing students by interacting kinetically with the device, including the use of fingers and pens (Malkawi, 2017).

Recent literature indicates that the interactive whiteboard is one of the modern technological innovations that represent a revolution in presentation methods, especially in the field of teaching, as it is possible to display learning materials in an attractive and interactive manner and employ all its skills and tools to develop practical and performance skills for students, in addition to the various features that It can be implemented by this board, such as recording, documentation, application, direct drawing on the board and the computer, as well as the ease of preparing lessons via the board, save, print, and arrange the contents of the board, saving time and effort, and direct

communication, whether inside the classroom or via the global network and e-mail (Mohammed & Bataineh, 2016; Buzkan, Ersoy, Cico & Ceni, 2016; Cakiroglu, 2016; İstifçi et al., 2018; Bicak, 2019).

The interactive whiteboard has been called a variety of names by its distributors, including the Electronic Whiteboard, the Interactive Whiteboard, the Smart Board Demirli, the Touch-Screen Interactive, and the Digital Board (Clark, 2012). The educational interactive board is characterized by helping the teacher to identify and simplify the main ideas, and ease of use with other visual, kinesthetic and audio teaching aids (Hativa, 2015). There is an exchange and interaction between the teacher and the learner, and it is characterized by presenting the topic or idea in an integrated manner and in a logical sequence using pictures, drawings and simple shapes, which leads to more positivity for the learner, as well as positive participation and attention and arousing the interest of learners, and it is compatible with all stages and curricula, according to the educational content of the lesson, as well as the clarity of the fonts and writings used in them; Which helps to improve the learning process, saves time and effort, helps expand the learner's experiences, facilitates building concepts, arouses the learner's interest, and satisfies his need for learning, as it presents the material in exciting, interesting and attractive ways, which achieves fun and diversity in learning situations for the student, and increases learners interact with the medium during its presentation of their participation in its use; Which helps to stay longer for the learning effect (Davidivitch & Yavich, 2016; Batdı, 2017; Davidovitch & Yavich, 2017; Gündüz & Kutluca, 2019). The smart board can also be used and activated with students with learning difficulties, as it is possible to follow lessons in advance and add comments and notes during the explanation of the educational material, which enables the student with difficulties to interact with these contents by writing and moving them, and provides him with better opportunities for the learning process (Akar, 2020; Khasawneh, 2021).

The interactive whiteboard has received great attention from many studies in recent times, the results of which showed the growth and effective role of the blackboard in teaching and learning situations. Paragina, Paragina and Jipa, (2011) study found that the interactive whiteboard provides flexibility for both the student and teacher in learning situations, and provides strategies for teaching for the teacher to achieve effective teaching. The results of Kaynak and Ünal (2018) also showed that the use of the interactive whiteboard increases the level of communication and interaction in the classroom, and increases students' motivation and attention, as it successfully employs visual and auditory learning styles, while I share the results of the study of Saraç (2017) and Gündüz and Kutluca (2019) that teachers and students emphasized that the use of the interactive whiteboard in teaching helps in providing interaction and cooperation within the classroom, and that it has a positive impact on improving students' understanding and learning experiences.

The Wuezer (2008) study aimed to identify the effect of using the interactive whiteboard in learning English for second grade students, and the results of the study showed a significant improvement in the average scores of the experimental group by a doubling in terms of the number of new words learned compared to their colleagues in the control group. The experimental group showed superiority in pronouncing and reading new words accurately and using them in formulating new contexts.

Onder and Aydin (2016) explored the impact of using a smart board in a biology lesson in tenth grade secondary school on students' academic accomplishments. The research included a quasi-experimental design with pre- and post-test control groups, as well as semi-structured interviews with the students. The research's study group consisted of 50 tenth-grade students from an Anatolian High School in the Buca District of Izmir province. The contents of the lessons with the students in the test group were prepared utilizing methods and techniques based on a constructive learning approach and delivered on a smart board. The students in the control group were taught the existing curriculum's activities. As a consequence of the research, a considerable difference was discovered between the test group and control group students' accomplishments. The test group pupils outperformed the control group students in terms of academic success.

Malkawi (2017) investigated The impact of employing a smart board on tenth-grade students' English language achievement and verbal engagement. The study included eighty-one students from two sections chosen at random from among five sections; the experimental and control groups were chosen at random; the experimental group was taught using a smart board, while the control group was taught using the traditional method supported by a computer. On the experimental group, an achievement test in English was used, and Flanders' adapted tool for the study of verbal interaction was used. The findings revealed substantial disparities in student achievement, with the experimental group outperforming the control group. The ratio of speech of pupils who were taught utilizing a smart

board revealed a statistically significant change. And the percentage of questions asked by the teacher and her encouragement to her students has increased, as has the rate of teachers speaking during teaching with a smart board, and periods of interruption verbal communication, and the percentage of questions asked by the teacher and her encouragement to her students, and the responses of the students and their initiatives.

Bıçak (2019) the instructors' opinions on the smart board's usability in the classroom and their need to modify it in the teaching process were determined. The research was carried out on ten different middle school branch instructors who worked in public schools in Turkey's northern province. A semi-structured interview form is utilized to collect data. Although instructors were favorable about smart board practices, the results suggested that they were deficient in their usage of smart boards and that additional practice-oriented in-service courses were needed.

Akar (2020) examined the impact of using a smart board on academic attainment was investigated. 47 experimental papers assessing the effect of smart board use on the academic success that were acquired through the literature review and satisfied the researcher's inclusion criteria were examined using the random-effects model and meta-analysis approach. The findings revealed that using a smart board had a good, big, and significant impact on academic attainment. The calculated effect size does not differ according to the type of publication, school level, and field of science (course), publication year, sample size and duration of experiment implementation. Also, the results were obtained under the theme of the positive aspects of smart board use: "it provides permanent learning", "supports visual and auditory learning", "makes topics more concrete".

Based on mentioned above, this study comes to address the impact of the smart board, as one of the technological innovations in the achievement of students with learning disabilities in English language.

2. METHODOLOGY

The current study used the quasi-experimental approach (pre and post measurement for one group).

2.1 Study Population and Sample:

The study population consisted of basic stage students in Irbid schools who are registered in the learning disabilities records for the academic year 2021/2022, according to the official version of the Jordan Ministry of Education. The number of students with learning disabilities in the English language was limited, as their number reached (45) students. The number of students with learning difficulties in the English language subject in the elementary school from the first to the sixth grade has been limited, and their number has reached (16) students.

2.2 Study Instruments

The study instruments were as follows:

The first instrument: (teaching using the smart board): the objectives of the study unit and activities were determined, and the activities included (intellectual puzzles and memory games, most of which depend on focus and attention as well as motor activities) and exercises in proportion to the teaching of three levels of English language using the smart board and then presented to a specialist in preparing educational software to ensure its suitability for use in the smart board.

The second tool: (An achievement test to detect the effect of using the smart board on students' achievement in the English language before and after the application): The English language test consisted of (16) questions, and the achievement test was corrected by giving a score for the correct answer, thus the total of the correct answers for the test (16), the criteria of validity and reliability were extracted by presenting them to a number of experts. The reliability was extracted by retesting, as the value of Cronbach's alpha coefficient of the test was (0.856).

2.3 Application Procedures

The study instrument (pre measurement) was applied to the sample members through the teachers of learning disabilities of English, and the program was applied by (15) lessons for a period of (8) weeks, at a rate of (2) lessons

per week, and the lessons were applied collectively according to the type of disability for each student at an average of (4) students in each group at most, and the interactive whiteboard was used in the lessons with an average time of (25) minutes per lesson and an average of (6) different activities in each lesson. The activities included intellectual puzzles and memory games, most of which depend on focus and attention, as well as kinesthetic activities. The application started from 10/9/2021 to 10/11/2021, and the post-measurement of the instrument was taken to measure the students' achievement level after applying an enrichment program based on the smartboard on the study sample members in the same way and sequence that was the pre-measurement.

2.4 Data Analysis

The current study used the following statistical tests using the Statistical Package for Science program Social (SPSS):

- Means and standard deviations.
- The T-test for two independent groups.

3. RESULTS AND DISCUSSION

Below is showed of the results according to the study question.

Table 1: T-test results for two related groups

Subject	Groups	N	Mean	St.d	T (value)
English	Pre-test	16	6.90	3.40	19.05
	Post-test	16	20.80	3.57	

Table (1) shows that there are statistically significant differences between the pre and post-tests in favor of the post, and this result indicates the effect of the smart board in raising the student's achievement level in the English language. This result is in agreement with the studies of Onder and Aydin (2016), Malkawi (2017), Bıçak (2019), Akar (2020). The improvement in the achievement level of students with learning difficulties in the English language is due to the use of the smart board. Its high ability to keep students away from the boredom that accompanies teaching in the traditional way. On the other hand, technological means are the focus of the attention of most students, including students with learning difficulties. Therefore, this technology meets the students' desires and saturates their motives. It is also characterized by the fact that it can be used in an easy and accessible way without difficulty, engaging their senses and stimulating their motives. It also actively contributes to simplifying and clarifying concepts, in addition to the fact that teaching through it provides a positive interactive educational atmosphere and causes interesting and exciting methods, which reflects positively on the achievement of students with learning difficulties and contributes to increasing their motivation to learn.

4. CONCLUSIONS

The activation of the smart board in educational activities contributed positively to the development of the academic achievement of English language for students with learning disabilities for basic education, which leads to enriching the educational activities provided for students with learning disabilities. In addition, the smart board works on developing the educational process and strategies for employing educational materials.

5. RECOMMENDATIONS

To complement the results of the study, it came up with a number of recommendations, including:

- 1) Encouraging teachers of learning disabilities to use the smart board in the educational activities provided to students with learning disabilities in basic education schools.

- 2) Enriching the educational activities provided to students with learning difficulties.
- 3) The need to develop the educational process and strategies for employing educational materials in the smart board, with the need to provide the smart board in all schools in a sufficient number, especially for the stage of the first cycle of basic education.
- 4) The necessity of equipping schools with the capabilities that allow the proper employment of educational technology innovations.
- 5) Encouraging parents of students with learning difficulties to practice computerized educational enrichment activities.

ACKNOWLEDGMENT

The authors extend their appreciation to the Deanship of Scientific Research at King Khalid University for funding this work through Big Research Groups under grant number (RGP.2 /103/42).

REFERENCES

- Akar, H. (2020). The effect of smart board use on academic achievement: A meta-analytical and thematic study. *International Journal of Education in Mathematics, Science and Technology*, 8(3), 261-273.
- Bıçak, F. (2019). Investigation of the views of teachers toward the use of smart boards in the teaching and learning process. *Journal of Pedagogical Research*, 3(1), 15-23.
- Buzkan, H., Ersoy, A. F., Çiço, B., & Ceni, A. (2016). The Belief of Teachers and Students on Interactive Board Usage in Secondary Schools: A Case Study of a Private Educational Institution Operating? n Albania. *European Journal of Social Science Education and Research*, 3(3), 146-154.
- ÇAKIROĞLU, Ö. (2016). Teachers and students views on the use of IWBs in secondary schools for enhancing classroom teaching and learning. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi*, (29), 374-386.
- Clark, D. (2012). Interactive whiteboard or souped-up blackboard?. Retrieved December, 15, 2015.
- Davidivitch, N., & Yavich, R. (2016). Who Needs Parent-teacher Meetings in the Technological Era? Davidovitch, N., & Yavich, R. (2017). The Effect of Smart Boards on the Cognition and Motivation of Students. *Higher Education Studies*, 7(1), 60-68.
- Gündüz, S. & Kutluca, T. (2019). Matematik ve fen bilimleri öğretiminde akıllı tahta kullanımının öğrencilerin akademik başarılarına etkisi üzerine bir meta-analiz çalışması. *Journal of Computer and Education Research*, 7 (13), 183-204.
- Gündüz, S., & Kutluca, T. (2019). A meta-analysis study on the effect of the use of smart board in the teaching of mathematics and science to students' academic achievements. *Journal of Computer and Education Research*, 7(13), 183-204.
- Hativa, N. (2015). What does the research say about good teaching and outstanding teachers. *Hora 'ahBa 'akademya*, 5, 50-55. [in Hebrew]
- International Journal of Higher Education*, 6(1), 153-162.
- İstifçi, İ., Keser, A. D., Serpil, R., Önal, M. A., Alan, B., & Türkyılmaz, S. (2018). An analysis of teachers' and students' perceptions on the use of smart boards in foreign language classrooms. *Turkish online journal of language teaching*, (3), 2, 83-110.

- Jung, W. H., & Suhyun, S. (2012). Making learning active with interactive technology in ELL classrooms. *Computers in the School: Interdisciplinary Journal of Practice, Theory, and Applied Research*, 29(4).
- Kaynak, S., & Unal, A. (2018). The effect of using smart board to the 7th grade students' achievement and recognition level in human and environment unit. *The Eurasia Proceedings of Educational & Social Sciences*, 9, 143-150.
- Khasawneh, M. A. S. (2021). Obstacles to using e-learning in teaching English for students with learning disabilities during the Covid-19 pandemic from teachers' point of view. *Science and Education*, 2(5), 470-483.
- Khasawneh, M. A. S. (2021). The effectiveness of using multimedia in the developing the concepts of the English language grammar concepts for people with learning difficulties. *Science and Education*, 2(6), 373-384.
- Malkawi, N. (2017). The effect of using smart board on the achievement of tenth grade students in English language and on verbal interaction during teaching in public schools. *International Research in Education*, 5(1), 197-208.
- Mohammed, A. E. T., & Bataineh, B. O. (2016). The Importance of using Smart Boards in Teaching Small EFL Classes. A Case Study of College of Preparatory Year Programs (PYP), Majmmah University, KSA. *International Journal on Studies in English Language and Literature*, 4(5), 9-17.
- Onder, R., & Aydin, H. (2016). The Effect of the Use of Smart Board in the Biology Class on the Academic Achievement of Student. *Journal on School Educational Technology*, 12(1), 18-29.
- Paragina, F., Paragina, S., Miron, C., & Jipa, A. (2011). The interactive whiteboard and the instructional design in teaching physics. *Procedia-Social and Behavioral Sciences*, 15, 3316-3321.
- Saraç, H. (2017). Türk eğitim sisteminde akıllı tahta kullanımının öğrencilerin öğrenme ürünlerine etkisi: Meta analiz çalışması. *Electronic Turkish Studies*, 12(4), 445-470.
- Wuerzer, B. (2008). The Effectiveness of the SMART Board while instructing limited English proficient learners. *SMARTer Kids Foundation*.