Journal of Namibian Studies, 34(2023): 437–456 ISSN: 2197-5523 (online)

Interactive Multimedia to Improve Reading Skill of Students with Special Needs

Dr. Mohamad Ahmad Saleem Khasawneh[1]

Abstract

Reading has a significant influence on a child's future growth and development, which is why it is essential for children who have special needs to acquire this skill. Learning that makes use of visual aids is very important for children who have particular requirements. Because students with special needs struggle with abstract cognition and have a reduced capacity for recall, the instructional tools or media that they use should be tailored to accommodate these characteristics. The end result of this study should be the creation of multimedia apps that are both practical and interactive. In order to carry out this study, we needed to make some adjustments to the approach that Borg and GalL had created. The study included 30 participants from the seventh-grade. The students were from those who have special neesds. The findings of the study suggest that introducing beginner readers to interactive forms of multimedia may improve their reading ability. And by gaining a very acceptable media expert validation score, material expert validation in the right category, and learning expert validation in the very feasible category, it is possible and helpful for children who have special requirements. According to the findings of the research, the created interactive multimedia does an excellent job of conveying information. When beginning their reading lesson, students that have specific educational needs may gain a great deal from utilizing the generated medium.

Keywords: Interactive Multimedia, Reading Skill, Special Needs

Introduction

Students who are able to receive an education while having a mental disability are the ones who are thought to be mentally retarded. Students with difficulties in their mental development, which have an effect on their ability to think, are the ones who are diagnosed as having mental retardation. According to Conti et al. (2017) students who have mental retardation are individuals who are limited in their ability to think or make use of their intelligence in some way. People say that a child has a mental handicap if they have trouble responding

[1] Assistant Professor, Special Education Department, King Khalid University, Saudi Arabia, mkhasawneh@kku.edu.sa

critically and reasonably to the world around them and if they struggle to think critically and rationally about it. According to Bronsard et al. (2016) children with mental disabilities are included in the population of children who experience these difficulties. It was concluded, on the basis of the statements made by a number of specialists working in the sector, that students with mental impairment had obstacles in their abilities to think clearly and critically.

Mental obstacles have an impact on a person's capacity for thought, which, in turn, has an impact on that person's capacity for comprehension. The term "cognition" refers to a broad field that includes all academic skills that are linked to a person's perceptual abilities. Cognition is a rather expansive field. According to Sternberg et al. (2018) cognition is defined as the process of not only obtaining new knowledge but also retaining it and putting it to use in one's daily life. Hwang et al. (2018) stated students that suffer from mental retardation have a difficult time remembering information, keeping their attention on a single task, engaging in abstract thought, and generally have bad recollections. It is possible to come to the conclusion that barriers to student cognition are the cause of students having difficulty capturing knowledge, storing it, and reprocessing it into critical and logical knowledge, which in turn causes low levels of abstract thinking skills. This conclusion can be drawn because it is possible to draw the conclusion that barriers to student cognition cause students to have difficulty capturing knowledge, storing it, and reprocess the assertions made by a number of different authorities allow for the inference of this conclusion (Zhu, 2016).

Due to the fact that students with mental retardation tend to have low levels of abstract thinking abilities, it may be difficult for them to visualize things. As a result, the concept of demonstration is one of the specific learning principles that are utilized when working with students who have mental retardation. The use of instructional aids is necessary for the learning process because of the limitations that students have in terms of their capacity for abstract thought (Hsu et al., 2018). According to Puspitarini & Hanif, (2019) learning media are only one of the numerous options that educators draw upon to better aid their student charges. According to one school of thought, the selection of relevant instructional resources needs to be guided by the degree to which the pupils are capable of engaging in critical thinking. The elementary school level is represented by the enactive level's description of the scenario (Videla et al., 2022). Direct experience, fake experience (demonstration), theater, demonstrations, field excursions, and performances should all serve as the foundation for the educational materials that are employed. This is because all of these types of learning are more effective than reading about or hearing about something.

The explanations that have been presented by a number of professionals suggest that students who have mental retardation want instructional aids, more especially learning media, so that they may either provide real-life experience or simulate real-life experience (demonstration). According to the widespread view, students who suffer from mental impairment have an urgent need for the provision of visual help. One of the purposes of teaching aids is to assist students in correctly identifying items by placing them in the appropriate context. The outcomes of the interviews and observations indicated that students with mental impairment had trouble recognizing items and had trouble memorizing material. It was determined that this was really the case. The reading skills of the students are suffering as a direct result of the situation that has arisen.

Memory issues are very frequent in persons who have mental retardation; this is a continuous obstacle that is thought to have a neurological root cause; as a result, it interferes with the ability of a mentally retarded person to read. Reading is often difficult for students who have mental retardation because of deficiencies in their capacity for perceptual and memorization abilities.

The eventual outcome of this study will produce a product called interactive multimedia, which, if it is effective, can perhaps increase the starting reading ability of students who have mental retardation and pique the interest of students who already have that attention.

Theoretical Background

Special Needs Reading Context

The reading that is being referred to in this research is the reading that comprises the first stage of reading. When children enter kindergarten, it is expected of them that they be able to read, and if they are unable to do so, it may have long-term ramifications for their intellectual progress. If a kid is unable to read, it may have long-term repercussions. According to Çakıroğlu (2018) the ability to convert written symbols into meaningful sound pronunciations is the most critical skill for youngsters to have gained at this point in their educational development. At this time in their development, children ought to have achieved mastery of this ability. In order for the learning process to be effective, the characteristics of the pupils need to be included into the use of visual aids (Syahrin et al., 2022; Khasawneh, 2022a).

The kinds of media that are used in the process of assisting in the education of pupils who have mental impairment are subject to a number of prerequisites before they can be employed (Malki & Einat, 2018). According to Southwick et al. (2016) the capacity to stimulate the attention of the pupils in the issue at hand, resilience in the face

of harm or danger, lack of abstraction, pragmatism, and accessibility are some of the prerequisites. Because persons who have these qualities have a propensity to learn slowly and have difficulty understanding complex concepts, the instructional strategy that is used must place a focus on the employment of a number of distinct senses in order to be effective. The sensory way of learning calls for the maximum amount of attention that can be properly directed toward it.

Interactive Media and Special Needs

For the purpose of directing the development and use of interactive media for students with special needs, a great number of distinct theories have been developed. At the core of these ideas is the question of how best to accommodate the individual needs of these pupils.

The UDL hypothesis is one option to consider in this scenario. This approach emphasizes the necessity of constructing inclusive classrooms in order to accommodate students who have a range of varied abilities. The framework known as Universal Design for Learning (UDL) suggests that educational resources and activities should be developed with a number of representational, expressive, and interactive options in mind (Rose et al., 2018). This is done to ensure that all students are able to fully participate in the learning process.

A different point of view is offered by the Multi-Modal Interaction Design, or MMID. Keeping this principle in mind, it is very important for us to develop interactive media that students of all levels of expertise and interests may profit from while also enjoying (Yates et al., 2021). According to the Multiple Modes of Interaction Design (MMID) philosophy, all students should be able to comprehend and make use of the educational materials that have been provided (Català-Oltra et al., 2022).

Another theory is called the Self-Directed Learning Theory (SDL), and it emphasizes the value of giving students control over their own education. According to the SDL theory, the structure of interactive media should be designed in such a way as to provide students with the ability to set their own learning goals, make choices on what and how they study, and obtain feedback on their progress (Lee & Hannafin, 2016).

Last but not least, the idea of Game-based Learning (GBL) emphasizes the significance of include games and game-like aspects in the activities that take place in the classroom in order to maintain the students' level of interest and to heighten their level of learning. GBL believes that games and simulations may be used to assist students, particularly those with special needs, practice and apply newly acquired abilities in a manner that is both interesting and engaging.

In conclusion, theories such as Universal Design for Learning (UDL), Multimedia Instructional Design (MMID), and Game-Based Learning (GBL) provide direction for the design and use of interactive media for students with special needs. These theories emphasize the significance of designing learning experiences that are accessible, engaging, and effective, and that are tailored to the specific requirements of these students.

Over the last several years, a number of studies have been conducted to investigate the possibility that interactive multimedia might assist children who have learning disabilities in more efficiently acquiring reading skills. It has been shown that children who have intellectual impairments, as well as those who have autism, ADHD, dyslexia, and other developmental issues, may benefit by engaging with interactive media (Khasawneh, 2022b).

In this study, we posed the question, "Does the use of text-to-speech and other comparable read-aloud aids help reading comprehension for children with reading disabilities?" According to the findings of a "meta-analysis" that was carried out by Wood (2018), the use of interactive multimedia was found to assist students who had challenges in learning to comprehend what they read. The authors have a hypothesis that the interactive characteristics of the multimedia led to increased levels of learning because of the students' increased levels of active involvement and sustained attention to the material.

Researchers El Kah & Lakhouaja (2018) demonstrated that dyslexic pupils who used interactive multimedia had improved reading fluency as well as comprehension. The authors contend that by include both visual and aural components in their work, they were able to provide the students with a learning experience that was both more intriguing and more engaging for them.

The study conducted by Lau & Win (2018) found that autistic children saw substantial improvements in their level of reading comprehension after utilizing interactive multimedia. The authors have a hypothesis that the multimedia worked as a visual and aural assistance for the students with autism, which encouraged them to actively engage in the learning process.

According to the findings of study done by Alabdulakareem & Jamjoom (2020), introducing interactive multimedia into reading teaching was beneficial for ADD/HD children (ADHD). The authors hypothesize that the students' elevated levels of interest and attention to the subject matter were a contributing factor to their improved reading comprehension.

According to the findings of study carried out by Terrazas-Arellanes et al. (2018), the reading comprehension of students with intellectual

disabilities was shown to significantly increase when they were presented with interactive multimedia. The authors believe that the use of multimedia made it possible to create a more engaging and interactive learning environment, which in turn led to increased levels of student engagement and retention.

Methods

Participants

The actual product requirements are determined via the process of needs assessment, while ideas for the product's conceptual and theoretical foundations are derived through the research of relevant literature. The study included 30 students from the seventh grades in Abha city, Saudi Arabia. These students were all males and were diagnosed with special needs.

Instrument

To determine the degree of help that was necessary, an assessment was carried out using a variety of data collection methods, such as observation, interviews, and questionnaires. Experts in the field of media were given the checklist to evaluate the instrument’s validity, experts in the field of materials were asked to evaluate the product's suitability based on the materials it contains, and learning specialists who work with children who have special needs were consulted to determine whether or not the product's content is compatible with the requirements of students who have intellectual disabilities.

Data collection and analysis

The evaluation criteria in the questionnaire are presented in the form of a checkbox, with a score of 4 indicating that it is highly appropriate to the student's characteristics, highly interesting for students, and highly effective for students; a score of 3 indicating that it is appropriate to the student's character, attractive to students, and effective for students; a score of 2 indicating that it is inappropriate to the student's character, less attractive to students, and effective for students; and a score of 1 indicating that it The percentage data that was generated is then compared to the revised criteria that must be met in order to qualify.

Results

This interactive multimedia package was given its stamp of approval by a media professional, a materials expert, and an educator of students who need special education services before it was released to the public. The method of validating the product included gathering data via the use of a questionnaire that made a variety of assertions

and recommendations on the product. Following the collection of data from validators, this knowledge is used to guide subsequent versions of the product, one of which will become the first product to be evaluated in a constrained environment.

Table 1. Effectiveness Test

Df	0.05	0.01
1	6.31	31.82
2	2.91	6.96
3	2.35	4.54
4	2.13	3.74
5	2.01	3.36
6	1.94	3.14

According to the results of the data validation conducted by media professionals, it has a 97% chance of being successfully implemented in educational settings. The results of the percentage of experts indicate that 76% of the materials may be considered appropriate for students who have mental disability. This is a goal that can be accomplished given that there are 88 percent more learning professionals than there are children with special needs. The combined scores of the three separate experts came to an average of 87%. Scores between 81% and 100% were regarded to be exceptionally feasible in accordance with the product validation criteria. As a consequence of this, the use of interactive multimedia products as a kind of educational assistance for those who suffer from mental retardation became a feasible prospect.

Table 2. T Test

Subject	D= X2 – X1	Difference in Pre-Post-Test
1	22	484
2	52	2704
3	33	1089
4	26	676

Data for both the pre-test and post-test were gathered via limited-scale field research. Because of these statistics, we are able to deduce that the T-test formula is used to the data that was gathered both before and after the test in order to calculate the final score. It is possible to reposition the table to accommodate a different number of students if that becomes required. In this particular scenario, when t count is equal to 5, and t table df is equal to 2.35, t count is greater than t table. It is thus reasonable to assert that students' participation in interactive multimedia activities contributes to an improvement in the students' fundamental reading skills.

Discussion

The learning process makes great use of a variety of sensory modalities in order to maximize the amount of knowledge that pupils are able to remember (Lodge et al., 2016). The following are some of the criteria that must be met in order for props or media to be considered suitable for use in the education of individuals who have mental retardation: the media must make students responsive to the material that is being studied; the media must not be easily damaged; the media must not be dangerous; the media must not be abstract; the media must be usable; and the media must be easy to obtain.

During the course of this investigation, images, films, and animations were all utilized as examples of interactive media. This was done in accordance with the findings of previous research, which led researchers to the conclusion that the application of interactive media may result in an increase in student participation during the process of learning. According to the conclusions of this study, subsequent researchers should take into consideration the possibility of using similar kinds of media for children whose education is hampered by a number of different problems.

In addition, it was demonstrated that the influence of the synthetic structural analytic technique on the early reading skills of children with mental retardation had a positive influence on the application of the method, which in turn had a positive effect on the method itself. This was demonstrated by the fact that the technique was shown to have a positive effect on the method itself. One of the suggestions offered for future studies is that the Synthetic Analytical Structure method be used for developing compelling learning materials (Iss et al., 2016). This was one of the recommendations provided.

The demand for educational media, the findings of prior research, and some of these remarks regarding the challenges faced by students who have mental retardation formed the foundation for the creation of interactive multimedia. This foundation was the result of the demand for educational media, the findings of prior research, and some of these remarks. We call a piece of multimedia "interactive" if the user is given a controller that they are able to operate while interacting with it. This makes the multimedia piece more engaging for the user. This gives the user the ability to choose the mode of teaching that caters to their need the most effectively. We say that a medium is interactive if a user may provide instructions to it, and if those instructions are followed by a response from the medium. The method of Synthetic Analytical Structure was used as a guide for the presentation of the content in the interactive multimedia that was developed to improve the reading abilities of students who have

mental retardation (Jamshidifarsani et al., 2019). This was done in order to help these students better understand what they are reading.

As a direct consequence of the students' processing and further study of the material in partnership with the professionals, there were advances achieved in each and every aspect of the assessment. These advancements can be directly attributed to the fact that. After that, the data are input into the algorithm for the T test, which generates the t count larger than the t table. This suggests that the use of interactive multimedia is effective in increasing the beginning reading skills of children who have been diagnosed with a mental impairment. This illustrates that there was a change in the results between the pre-test and the post-test, which was conducted at the same location. The pupils' reading comprehension of sentences significantly increased, and they also demonstrated extremely impressive development in the words domain (Kuhn et al., 2017). The children performed very well on the portion of the test that included syllables and letters.

One of the advantages of using interactive media is that it allows for the creation of a learning environment that is not only more creative but also more engaging. According to Popenici & Kerr (2017) educators need to have creative and innovative minds in order to properly support students' educational experiences. The term "full media performance" refers to the combination of text, pictures, audio, and music, as well as animated graphics or videos, into a single component that complements and supports each other for the purpose of achieving educational goals. This can be done by combining text, pictures, audio, and music, as well as animated graphics or videos. Improve your kids' desire to study by giving them more reasons to do so. It is a valuable talent to have the ability to visualize concepts that, in the past, have been challenging to convey only via explanations or other methods that are more conventional (Fischer et al., 2020).

Students that have particular requirements may find that the many educational strategies that may be chosen from thanks to the proliferation of interactive media to be highly useful (Gillis & Krull, 2020). Students could find it helpful to visualize and comprehend difficult ideas via the use of simulations, for instance, which not only make learning more intriguing and engaging but also help students perceive and comprehend more complicated ideas. Students that take part in activities that use virtual reality (VR) may get access to classrooms that are more engaging and immersive, as well as classrooms that may be customized to better suit the students' unique learning styles.

One of the many advantages of interactive media is that it can be adapted to meet the requirements of children with disabilities (Pinchevski & Peters, 2016). This is only one of the many advantages of interactive media. This is only one of the numerous advantages that

may be gained by using interactive media. Students who have visual or hearing impairments may benefit from the accessibility of interactive media that incorporates features such as text-to-speech, closed captioning, and audio explanations (Dhanjal & Singh, 2019). Students who have learning disabilities may also benefit from the accessibility of interactive media. These components may be included into the design of interactive media in some kind.

Additionally, children who have special needs may benefit from the capacity of interactive media to create an environment that is both safe and encouraging for the purpose of practicing newly learned skills and furthering their development. This is because the goal of these activities is to further the children's development. The use of educational games and simulations is an excellent way to hone a variety of skills, such as problem-solving, critical thinking, and decision-making, to name just a few of the many possibilities that are available. Educational games and simulations can be found online and in many different formats.

Conclusion

When creating this interactive multimedia product, the specific needs of students who have mental impairment were taken into consideration at every stage of the design process. Because of the improvements that have been made to make this multimedia resource more attractive and less difficult, students will have an easier time utilizing it. This medium is accompanied with a reference book that describes not only the function of the medium but also its purpose. This book is intended for the use of teachers and student assistants. This media features a wide range of visually appealing elements, as well as audio and video material, and animated graphics. This media makes use of a mechanism known as Synthetic Analytical Structure in order to communicate reading information, which is complemented with audio. Students might perhaps be encouraged to engage in independent study with the assistance of this form of media. The fact that this medium is a compact disk makes it easier to use and easier to store than other similar formats.

Future research can focus on the use of interactive multimedia in developing skills other than reading among students with special needs. The study recommends performing deep analysis in the role of using multimedia in helping students acquire different skills. The study also recommends decision-makers to consider the results of the study in giving instructions to teachers who deal with student with special needs.

Acknowledgments

The authors extend their appreciation to the Deanship of Scientific Research at King Khalid University for funding this work through Small Research Groups under grant number (RGP.2 / 129 /44).

Bibliography

Alabdulakareem, E., & Jamjoom, M. (2020). Computer-assisted learning for improving ADHD individuals' executive functions through gamified interventions: A review. Entertainment Computing, 33, 100341. https://doi.org/10.1016/j.entcom.2020.100341

Bronsard, G., Alessandrini, M., Fond, G., Loundou, A., Auquier, P., Tordjman, S., & Boyer, L. (2016). The prevalence of mental disorders among children and adolescents in the child welfare system: a systematic review and meta-analysis. Medicine, 95(7). 10.1097/MD.0000000000002622

Çakıroğlu, A. (2018). The language acquisition approaches and the development of literacy skills in children. International Electronic Journal of Elementary Education, 11(2), 201-206. https://iejee.com/index.php/IEJEE/article/view/747.

Català-Oltra, L., Martínez-Gras, R., & Penalva-Verdú, C. (2022). The Use of Languages in Digital Communication at European Universities in Multilingual Settings. International Journal of Society, Culture & Language, 1-15.

Conti, D., Di Nuovo, S., Buono, S., & Di Nuovo, A. (2017). Robots in education and care of children with developmental disabilities: a study on acceptance by experienced and future professionals. International Journal of Social Robotics, 9(1), 51-62. https://doi.org/10.1007/s12369-016-0359-6

Dhanjal, A. S., & Singh, W. (2019, February). Tools and techniques of assistive technology for hearing impaired people. In 2019 International conference on machine learning, big data, cloud and parallel computing (COMITCon) (pp. 205-210). IEEE. 10.1109/COMITCon.2019.8862454

El Kah, A., & Lakhouaja, A. (2018). Developing effective educative games for Arabic children primarily dyslexics. Education and Information Technologies, 23(6), 2911-2930. https://doi.org/10.1007/s10639-018-9750-2

Fischer, C., Pardos, Z. A., Baker, R. S., Williams, J. J., Smyth, P., Yu, R., ... & Warschauer, M. (2020). Mining big data in education: Affordances and challenges. Review of Research in Education, 44(1), 130-160. https://doi.org/10.3102/0091732X20903304

Gillis, A., & Krull, L. M. (2020). <? covid19?> COVID-19 remote learning transition in spring 2020: class structures, student perceptions, and inequality in college courses. Teaching Sociology, 48(4), 283-299. https://doi.org/10.1177/0092055X20954263

Hsu, T. C., Chang, S. C., & Hung, Y. T. (2018). How to learn and how to teach computational thinking: Suggestions based on a review of the literature.

Computers & Education, 126, 296-310. https://doi.org/10.1016/j.compedu.2018.07.004

Hwang, B., Choi, H., Kim, S., Kim, S., Ko, H., & Kim, J. (2018). Facilitating student learning with critical reflective journaling in psychiatric mental health nursing clinical education: A qualitative study. Nurse education today, 69, 159-164. https://doi.org/10.1016/j.nedt.2018.07.015

Issa, H., Sun, T., & Vasarhelyi, M. A. (2016). Research ideas for artificial intelligence in auditing: The formalization of audit and workforce supplementation. Journal of Emerging Technologies in Accounting, 13(2), 1-20. https://doi.org/10.2308/jeta-10511

Jamshidifarsani, H., Garbaya, S., Lim, T., Blazevic, P., & Ritchie, J. M. (2019). Technology-based reading intervention programs for elementary grades: An analytical review. Computers & Education, 128, 427-451. https://doi.org/10.1016/j.compedu.2018.10.003.

Aburezeq, I. M., Dweikat, F. F., Al-Shaar, A. S., & Khasawneh, M. A. S. (2022). Case Study on the Dissemination of Radicalism on social media. Information Sciences Letters, 11(6), pp. 2339–2343. DOI: http://dx.doi.org/10.18576/isl/110640

Al Sabi, Y. N., Jaradat, S. A., Ayasrah, M. N., Khasawneh, M. A. S., & Al Taqatqa, F. A. S. (2022). Shyness and its Relation with Self-esteem in Light of Some Variables. Information Sciences Letters , 11(6), pp. 2345–235. DOI: http://dx.doi.org/10.18576/isl/110641

Al-Ajeely, S. A., & Khasawneh, M. A. S. (2022). The Role of University Education in Confronting the Phenomenon of Terrorism and Promoting Belonging among Young People. Journal of Positive Psychology and Wellbeing, 6(1), 3206-3211. https://journalppw.com/index.php/jppw/article/view/5194

Al-Amrat, M. G. R., & Khasawneh, M. A. S. (2022). Students with Special Education Disabilities' Spatial Skills. Journal of Positive Psychology and Wellbeing, 6(1), 3185-3194. https://journalppw.com/index.php/jppw/article/view/5190

Alatoom, E. K. T., & Khasawneh, M. A. S. (2022). The Reality of Online Education and its Obstacles from the Perspectives of Resources Rooms Teachers in Amman Schools During the COVID-19 Pandemic. Journal of Positive Psychology and Wellbeing, 6(1), 3195-3205. https://journalppw.com/index.php/jppw/article/view/5192

Alkhasawneh, T., Al-Shaar, A. S., Khasawneh, M., Darawsheh, S., & Aburaya, N. (2022). Self-Esteem and its Relationship to some Demographic Variables among Students with Learning Disabilities. Information Sciences Letters, 11(6), pp. 1929–1936. http://dx.doi.org/10.18576/isl/110609

Alkhawaldeh, M. A. (2020). and Mohamad Ahmad Saleem Khasawneh (2020). The Impact of Using an Infographic-based Training Program on Improving Visual Motor Memory Among EFL Student. INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY, 405-416. DOI: 10.17485/ijst/2020/v13i04/148906

Alkhawaldeh, M. A., & Kha-sawneh, M. A. S. (2020). Developing acoustic analysis skills among students with developmental apraxia of speech

(DAS). Indian Journal of Science and Technology, 13(22), 2237-2244. DOI: 10.17485/ijst/v13i22.148932

Alkhawaldeh, M. A., & Khasawneh, M. A. S. (2021). Learning Disabilities in English at the Primary Stage: A Qualitative Study from the Students' Perspective. http://ijmrap.com/wp-content/uploads/2021/06/IJMRAP-V3N12P107Y21.pdf

Alkhawaldeh, M. A., & Khasawneh, M. A. S. (2021). Problems Faced by English Language Teachers in Teaching Students with Learning Disabilities. Journal of Research and Opinion, 8(11), 3058-3065. https://doi:10.15520/jro. v8i11.132

Alkhawaldeh, M. A., & Khasawneh, M. A. S. (2021). The availability of teaching aids in resource rooms and their use by teachers in Irbid Governorate. Science and Education, 2(8),390-401. https://openscience.uz/index.php/sciedu/article/view/1772/1694

Alkhawaldeh, M. A., & Khasawneh, M. A. S. (2021). The challenges that English teachers face in the employment of the evaluation matrix in classes for students with learning difficulties. Journal La Edusci, 2(5), 30-38. https://doi.org/10.37899/journallaedusci.v2i5.494

Alkhawaldeh, M. A., & Khasawneh, M. A. S. (2021). The Effect of Flipped Classroom Strategy via Smart Phones in Academic Achievement in the English Language for Blind and Visually Impaired Students. Journal of Asian Multicultural Research for Educational Study, 2(3), 1-10. https://doi.org/10.47616/jamres.v2i2.203

Alkhawaldeh, M. A., & Khasawneh, M. A. S. (2021). The Training Program Effectiveness to Improve English Pronunciation for Students with Hearing Impairments in the Elementary Level. Journal La Sociale, 2(5), 1-11. https://doi.org/10.37899/journal-la-sociale.v2i5.401

Alkhawaldeh, M. A., & Khasawneh, M. A. S. (2022). Problems faced by English language teachers in teaching students with learning disabilities. Science and Education, 3(5), 677-687. problems-faced-by-english-language-teachers-in-teaching-students-with-learning-disabilities.pdf

Alkhawaldeh, M. A., & Khasawneh, M. A. S. (2022). The challenges that English teachers face in the employment of the evaluation matrix in classes for students with learning difficulties. Science and Education, 3(5), 688-699. https://openscience.uz/index.php/sciedu/article/view/3458

Ayasrah, M. N., Alkhawaldeh, M. A., Khasawneh, M. A. S., & Alnajjar, F. Y. A. (2022). The Role of Teacher Interpersonal Communication with Autistic Students in Developing Social Skills. Clinical Schizophrenia & Related Psychoses. DOI: 10.3371/CSRP.MMWY.100127

Hadhrami, A. S. A. L., Al-Amrat, M. R., Khasawneh, M. A. S., & Darawsheh, S. R. (2022). Approach to Improve Reading Skill of Students with Dyslexia. Information Sciences Letters, 11(6), pp. 2333–2338. http://dx.doi.org/10.18576/isl/110639

Khasawaneh, M., & Arabia, S. (2016). The Impact of a Training Program Based on the Visual Words Composition Techniques on the Development of Reading Comprehension Skills among the Students of Primary Stage. Advances in Bioresearch, 7(2). https://www.researchgate.net/publication/329091984_International_Journal_of_Academic_Research

Khasawneh, M. (2022). The Relationship of Curriculum, Teaching Methods, Assessment Methods, and School and Home Environment with Learning Difficulties in English Language from the Studetns' Perspectives. Journal of Innovation in Educational and Cultural Research, 3(1), 41-48. https://doi.org/10.46843/jiecr.v3i1.51

Khasawneh, M. A. (2012). Spatial ability for children with learning disabilities in hail and its relationship with some variables. European Scientific Journal, 8(22). DOI: https://doi.org/10.19044/esj.2012.v8n22p%25p

Khasawneh, M. A. (2019). Using Social Media Networks by Learning Disabilities Teachers. International Journal of Educational Research Review, 4, 766-780. https://doi.org/10.24331/ijere.634880

Khasawneh, M. A. (2021). The effect of the spread of the new COVID-19 on the psychological and social adaptation of families of persons with disabilities in the Kingdom of Saudi Arabia. Health Psychology Report, 9(3), 264-275. DOI: https://doi.org/10.5114/hpr.2020.99003

Khasawneh, M. A. S. (2020). The Extent of Bullying Against Students with Learning Disabilities According to the Age Variable. International Journal of Learning, Teaching and Educational Research, 19(6), 267-281. DOI: 10.26803/ijlter.19.6.16

Khasawneh, M. A. S. (2020). The leadership roles of Saudi special education teachers from their own perspectives. Indian Journal of Science and Technology, 13(25), 2520-2528. DOI: 10.17485/ijst/v13i25.110

Khasawneh, M. A. S. (2020). THE SPATIAL ABILITY OF SCHOOL STUDENTS WITH LEARNING DISABILITIES IN SAUDI ARABIA. https://www.researchgate.net/publication/340332933_THE_SPATIAL_ABILITY_OF_SCHOOL_STUDENTS_WITH_LEARNING_DISABILITIES_IN_SAUDI_ARABIA

Khasawneh, M. A. S. (2021). An electronic Training Program on Developing the Written Expression Skills among a Sample of foreign language learners EFL who are at-risk for Learning disabilities during the emerging Covid-19. Academy of Social Science Journal, 7(10), 1974-1982. DOI: HTTPS://DOI.ORG/10.15520/ASSJ.V7I10.2713

Khasawneh, M. A. S. (2021). Attitudes of teachers of learning disabilities in English language towards the use of information technology in Irbid from their point of view. Journal of Advances in Social Science and Humanities, 7(10), 1957-1966.DOI:10.15520/jassh.v7i10.661

Khasawneh, M. A. S. (2021). Auditory memory among a sample of students with learning disabilities in English in Irbid Governorate. Science and Education, 2(11),609-621. https://openscience.uz/index.php/sciedu/article/view/2040

Khasawneh, M. A. S. (2021). Challenges resulting from simultaneous online education during the" Covid-19" pandemic: the case of King Khalid University, Saudi Arabia. Science and Education, 2(8), 414-430. https://openscience.uz/index.php/sciedu/article/view/1774/1696

Khasawneh, M. A. S. (2021). Cognitive Flexibility of Students with Learning Disabilities in English Language and Its Relationship to Some Variables. Shanlax International Journal of Education, 9(3), 49-56. DOI: 10.34293/education.v9i3.4003

Khasawneh, M. A. S. (2021). Developing the Imagination Skills among Students with Learning Disabilities in English Language. Journal of Asian Multicultural Research for Social Sciences Study, 2(4), 1-8. DOI: https://doi.org/10.47616/jamrsss.v2i4.187

Khasawneh, M. A. S. (2021). Emotional intelligence of teachers of Learning Disabilities in English language from their point of view. Investigación educativa actual, 4(4), 1101-1109. DOI: https://doi.org/10.52845/CER/2021-4-4-1.

Khasawneh, M. A. S. (2021). Language skills and their relationship to learning difficulties in English language from the students' point of view. Science and Education, 2(9), 261-272. DOI: 10.34293/education.v9i4.4082

Khasawneh, M. A. S. (2021). Methods of resource room management for teachers of learning disabilities in English language in light of some variables. Science and Education, 2(9), 240-249. DOI: 10.30659/e.6.2.213-221

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. https://openscience.uz/index.php/sciedu/article/view/1406/1350

Khasawneh, M. A. S. (2021). Problems of Teaching Phonological Awareness to Learning Disabilities Students. GIST–Education and Learning Research Journal, 23, 135-149. DOI: https://doi.org/10.26817/16925777.961

Khasawneh, M. A. S. (2021). Problems Teaching English to Deaf Students. Indonesian Journal of Creative Counseling, 1(2), 32-42. DOI: https://doi.org/10.47679/ijcc.v1i2.107

Khasawneh, M. A. S. (2021). Programa de formación para el desarrollo de habilidades de lectura en inglés para estudiantes con dificultades de aprendizaje. Revista EDUCARE-UPEL-IPB-Segunda Nueva Etapa 2.0, 25(1), 84-101.https://doi.org/10.46498/reduipb.v25i1.1445.

Khasawneh, M. A. S. (2021). Social competence for students with learning disabilities in English. Technium Social Sciences Journal, 23(1), 16–27. Retrieved from https://techniumscience.com/index.php/socialsciences/article/view/4439

Khasawneh, M. A. S. (2021). Sources of work stress of English language teachers in secondary government schools in Saudi Arabia. Science and Education, 2(10), 249-254. https://doi.org/10.37899/journallaedusci.v2i4.450

Khasawneh, M. A. S. (2021). Teacher Perspective on Language Competences Relation to Learning Difficulties in English Learning. Journal Educational Verkenning, 2(1),29-37. Retrieved from http://hdpublication.com/index.php/jev/article/view/125

Khasawneh, M. A. S. (2021). The attitudes of Teachers of Learning Disabilities in English Language Toward Using Virtual classes to Teach English Writing. Journal of Asian Multicultural Research for Social Sciences Study, 2(4), 9-18. https://doi.org/10.47616/jamrsss.v2i4.189

Khasawneh, M. A. S. (2021). The degree of practicing effective communication skills among teachers of learning disabilities in English

language from their point of view. Journal Educational Verkenning, 2(2), 1-9. DOI: 10.47616/jamres.v2i2.175

Khasawneh, M. A. S. (2021). The difficulties facing students with learning disabilities in English language skills from the point of view of their parents. Science and Education, 2(11), 592-608. https://openscience.uz/index.php/sciedu/article/view/2039

Khasawneh, M. A. S. (2021). The Effect of Using a Language Games-Based Electronic Program on Acquiring Oral Expression Skills among People with Learning Difficulties in English Language during Covid-19 Pandemic. MANAZHIM, 3(2), 136-150. https://doi.org/10.36088/manazhim.v3i2.1109

Khasawneh, M. A. S. (2021). The effectiveness of a training program based on Erikson's theory in developing independence skills among students with learning disabilities in Jordan. Science and Education, 2(8), 457-471. https://openscience.uz/index.php/sciedu/article/view/1776/1698

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. https://openscience.uz/index.php/sciedu/article/view/1571/1505

Khasawneh, M. A. S. (2021). The extra-curricular environmental activities as practiced by English language students with learning difficulties from their teachers' point of view. Science and Education, 2(4), 275-287. https://openscience.uz/index.php/sciedu/article/view/1226/1177

Khasawneh, M. A. S. (2021). The Impact of Phonological Awareness in Improving Sequential Memory among Students with Learning Disabilities. International Journal of Disability, Development and Education, 1-13. https://doi.org/10.1080/1034912X.2021.1995853

Khasawneh, M. A. S. (2021). The level of cognitive dissonance among students with learning disabilities in English from the point of view of their teachers. Science and Education, 2(11), 577-591. https://openscience.uz/index.php/sciedu/article/view/2038

Khasawneh, M. A. S. (2021). The Level of Emotional Intelligence of English Language Students with Learning Disabilities from the Point of View of Their Parents. Science and Education, 2(7), 264-275. https://openscience.uz/index.php/sciedu/article/view/1706/1635

Khasawneh, M. A. S. (2021). The Level of Job Performance among Teachers of Learning Disabilities in English Language During The COVID-19 Pandemic from Their Point of View. International Journal of Contemporary Research andReview, 12(10),20449-20457. https://doi.org/http://ijcrr.info/index.php/ijcrr/article/view/924/947.

Khasawneh, M. A. S. (2021). The level of moral dependence among a sample of students with learning disabilities in English from the point of view of their teachers. Science and Education, 2(11), 528-538. https://openscience.uz/index.php/sciedu/article/view/2034

Khasawneh, M. A. S. (2021). The level of motivation among teachers of learning disabilities in English language in light of the COVID-19 pandemic. Social Science Learning Education Journal, 6(11), 642-651DOI: https://doi.org/10.15520/sslej.v6i11.2871

Khasawneh, M. A. S. (2021). The level of stuttering severity among students with learning disabilities in English language. Science and Education, 2(9), 215-226. https://openscience.uz/index.php/sciedu/article/view/1842/1747

Khasawneh, M. A. S. (2021). The perceptions of teachers of Learning Disabilities in English language on the level of their psychological burnout. Journal of Research and Opinion, 8(10), 3048-3057. doi:10.15520/jro.v8i10.130.

Khasawneh, M. A. S. (2021). The reality of extra-curricular educational activities from the viewpoint of students with learning difficulties in English language. 6-2-13-161 (2).pdf

Khasawneh, M. A. S. (2021). The relationship between the acquisition of language patterns and oral expression skills among students with learning difficulties in the English language during the Covid-19 pandemic. Science and Education, 2(5), 490-499. https://openscience.uz/index.php/sciedu/article/view/1408/1352

Khasawneh, M. A. S. (2021). The use of autocratic style by teachers of learning disabilities in English language according to some variables. Science and Education, 2(10), 255-265.

Khasawneh, M. A. S. (2021). THE USE OF DEMOCRATIC STYLE BY TEACHERS OF LEARNING DISABILITIES IN ENGLISH LANGUAGE ACCORDING TO SOME VARIABLES. language, 4(05). https://ijehss.com/uploads2021/EHS_4_305.pd

Khasawneh, M. A. S. (2021). The use of Laissez-faire style by teachers of Learning Disabilities in English language according to some variables. Science and Education, 2(9), 250-260. https://openscience.uz/index.php/sciedu/article/view/1845/1750

Khasawneh, M. A. S. (2021). The Use of Reading Speed Strategy in Promoting Reading Comprehension among EFL Students with Learning Disabilities. Al-Lisan: Jurnal Bahasa (e-Journal), 6(2), 225-235. https://doi.org/10.30603/al.v7i2.2135.

Khasawneh, M. A. S. (2021). Training program on developing reading skills in the english language among students with learning difficulties. Revista EDUCARE-UPEL-IPB-Segunda Nueva Etapa 2.0, 25(1), 84-101. DOI: 10.46498/reduipb.v25i1.1466

Khasawneh, M. A. S. (2022). Developing the imagination skills among students with learning disabilities in English language. Science and Education, 3(4), 627-641.

Khasawneh, M. A. S. (2022). Developing the imagination skills among students with learning disabilities in English language. Science and Education, 3(4), 627-641.

Khasawneh, M. A. S. (2022). Language Skills and Their Relationship to Learning Difficulties in English Language from the Teachers' Point of View. The Journal of Quality in Education, 12(19), 104-113. https://doi.org/10.37870/joqie.v12i19.308

Khasawneh, M. A. S. (2022). The degree of practicing effective communication skills among teachers of learning disabilities in English language from their point of view. Science and Education, 3(2), 492-509. https://orcid.org/0000-0002-1390-3765

Khasawneh, M. A. S. (2022). The level of motivation among teachers of learning disabilities in English language in light of the COVID-19 pandemic. Science and Education, 3(4), 664-677. https://openscience.uz/index.php/sciedu/article/view/3026

Khasawneh, M. A. S. (2022). The level of practicing organizational trust among teachers of learning disabilities in English language from their point of view. Science and Education, 3(2), 481-491. https://orcid.org/0000-0002-1390-3765

Khasawneh, M. A. S. (2022). Work pressures among teachers of learning disabilities in English language from their point of view. Science and Education, 3(2), 510-529. https://orcid.org/0000-0002-1390-3765

Khasawneh, M. A. S. K. (2021). Self-Regulation among students with learning disabilities in English language and its relationship to some variables. https://socialscienceresearch.org/index.php/GJHSS/article/view/3660/3549

Khasawneh, M. A. S. K. (2021). The effectiveness of a training program based on Erikson's theory in developing initiation skills among students with learning disabilities in Jordan.

Khasawneh, M. A. S. THE EFFECTIVENESS OF A TRAINING PROGRAM BASED ON ERIKSON'S THEORY IN DEVELOPING ACHIEVEMENT SKILLS AMONG STUDENTS WITH LEARNING DISABILITIES IN JORDAN.

Khasawneh, M. A. S., & Alatoom, E. K. T. (2022). Developing writing skills among students with learning disabilities in English language. Journal of Social Studies (JSS), 18(1), 63-80.

Khasawneh, M. A. S., & Alkhawaldeh, M. A. (2018). The Relationship between Successful Intelligence and School-Social Growth among Learning Disability Students in Aseer Area. Basic Education College Magazine for Educational and Humanities Sciences, (39).

Khasawneh, M. A. S., & Alkhawaldeh, M. A. (2020). The Effectiveness of Phonological Awareness Training in Treating Deficiencies in Auditory Processing Among Children with Learning Disabilities Among Elementary Cycle Students in Saudi Arabia. International Journal of Language Education, 4(3). https://doi.org/10.26858/ijole.v4i3.14758

Khasawneh, M. A. S., & Alkhawaldeh, M. A. H. (2017). The attitudes of King Khalid's students who are affiliated with Special Education bachelor's degree toward Blackboard Software in their learning. International Journal of Humanities and Cultural Studies (IJHCS) ISSN 2356-5926, 2(4), 2789-2798. https://www.ijhcs.com/index.php/ijhcs/article/view/3061/2888

Khasawneh, M. A. S., & Al-Rub, M. O. A. (2020). Development of Reading Comprehension Skills among the Students of Learning Disabilities. Universal Journal of Educational Research, 8(11), 5335-5341. DOI: 10.13189/ujer.2020.081135

Khasawneh, M. A. S., Alkhawaldeh, M. A., & Hamad, H. A. A. B. (2018). Building a training program based on the theory of voice awareness and measuring its effectiveness in developing the skills of auditory analysis of students with difficulties in synergy, developmental and verbal Verbal Dyspraxia. Basic Education College Magazine For Educational and Humanities Sciences, (41).

Khasawneh, M. A., Al Ahmad, F. A., & Al Khawaldeh, M. A. (2018). the Effects of Training Program based on Auditory Perception Skills in Enhancing Phonological Awareness among Learning Disability Students in Aseer Region. Journal of Educational and Psychological Studies [JEPS], 12(3), 591-604. https://doi.org/10.24200/jeps.vol12iss3pp591-604

Khasawneh, M., Alkhawaldeh, M., & Al-Khasawneh, F. (2020). The Level of Metacognitive Thinking Among Students with Learning Disabilities. International Journal of English Linguistics, 10(5). doi:10.5539/ijel.v10n5p343

Khasawneh, MAS (2021). Training program for the development of reading skills in English for students with learning difficulties. EDUCARE-UPEL-IPB-Second New Stage 2.0 Magazine , 25 (1), 84-101. DOI: 10.46498/reduipb.v25i1.1445

Shater, A., AlMahdawi, A. J., & Khasawneh, M. A. S. (2023). The Digital Learning of Disabled Students: Perceptions of Teachers in Public Schools. DOI: http://dx.doi.org/10.18576/isl/120227

Yaser, N. A. S., Samar, A. J., Firas, A. S. A. T., & Mohamad, A. S. K. (2022). USING SOCIAL MEDIA NETWORK BY SPECIAL EDUCATION TEACHERS. International Journal of Cognitive Research in Science, Engineering and Education, 10(2), 39-50. DOI: 10.23947/2334-8496-2022-10-2-39-50

Kuhn, K. E., Rausch, C. M., McCarty, T. G., Montgomery, S. E., & Rule, A. C. (2017). Utilizing nonfiction texts to enhance reading comprehension and vocabulary in primary grades. Early Childhood Education Journal, 45(2), 285-296. https://doi.org/10.1007/s10643-015-0763-9

Lau, B. T., & Win, K. M. (2018). Differentiated animated social stories to enhance social skills acquisition of children with autism spectrum disorder. In Handbook of research on human development in the digital age (pp. 300-329). IGI Global.

Lee, E., & Hannafin, M. J. (2016). A design framework for enhancing engagement in student-centered learning: Own it, learn it, and share it. Educational technology research and development, 64(4), 707-734. https://doi.org/10.1007/s11423-015-9422-5

Lodge, J. M., Hansen, L., & Cottrell, D. (2016). Modality preference and learning style theories: rethinking the role of sensory modality in learning. Learning: Research and Practice, 2(1), 4-17. https://doi.org/10.1080/23735082.2015.1083115

Malki, S., & Einat, T. (2018). To include or not to include—this is the question: Attitudes of inclusive teachers toward the inclusion of pupils with intellectual disabilities in elementary schools. Education, Citizenship and Social Justice, 13(1), 65-80. https://doi.org/10.1177/1746197917705138

Pinchevski, A., & Peters, J. D. (2016). Autism and new media: Disability between technology and society. New Media & Society, 18(11), 2507-2523. https://doi.org/10.1177/1461444815594441

Popenici, S. A., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. Research and Practice in Technology Enhanced Learning, 12(1), 1-13. https://doi.org/10.1186/s41039-017-0062-8

Puspitarini, Y. D., & Hanif, M. (2019). Using Learning Media to Increase Learning Motivation in Elementary School. Anatolian Journal of Education, 4(2), 53-60. https://doi.org/10.29333/aje.2019.426a

Rose, D. H., Robinson, K. H., Hall, T. E., Coyne, P., Jackson, R. M., Stahl, W. M., & Wilcauskas, S. L. (2018). Accurate and informative for all: Universal Design for Learning (UDL) and the future of assessment. In Handbook of accessible instruction and testing practices (pp. 167-180). Springer, Cham.10.1007/978-3-319-71126-3_11

Southwick, S. M., Lowthert, B. T., & Graber, A. V. (2016). Relevance and application of logotherapy to enhance resilience to stress and trauma. In Logotherapy and existential analysis(pp. 131-149). Springer, Cham. 10.1007/978-3-319-29424-7_13

Sternberg, R. J., Wagner, R. K., & Okagaki, L. (2018). Practical intelligence: The nature and role of tacit knowledge in work and at school. In Mechanisms of everyday cognition (pp. 205-227). Psychology Press.

Syahrin, S., Algryani, A., & Irudayasamy, J. (2022). An Interplay of Communities of Practice and Multiliteracies Framework: A Case Study of the Uses and Practices of English Literacy in Oman. International Journal of Society, Culture & Language, 1-14.

Terrazas-Arellanes, F. E., Gallard M, A. J., Strycker, L. A., & Walden, E. D. (2018). Impact of interactive online units on learning science among students with learning disabilities and English learners. International Journal of Science Education, 40(5), 498-518. https://doi.org/10.1080/09500693.2018.1432915

Videla, R., Rossel, S., Muñoz, C., & Aguayo, C. (2022). Online Mathematics education during the COVID-19 pandemic: Didactic strategies, educational resources, and educational contexts. Education Sciences, 12(7), 492. https://doi.org/10.3390/educsci12070492

Wood, S. G., Moxley, J. H., Tighe, E. L., & Wagner, R. K. (2018). Does use of text-to-speech and related read-aloud tools improve reading comprehension for students with reading disabilities? A meta-analysis. Journal of learning disabilities, 51(1), 73-84. https://doi.org/10.1177/0022219416688170

Yates, A., Starkey, L., Egerton, B., & Flueggen, F. (2021). High school students' experience of online learning during Covid-19: the influence of technology and pedagogy. Technology, Pedagogy and Education, 30(1), 59-73. https://doi.org/10.1080/1475939X.2020.1854337

Zhu, L. (2016). Language, emotion and metapragmatics: A theory based on typological evidence. International Journal of Society, Culture & Language, 4(2), 119-134.