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The Effectiveness of Using Assemblr Edu Application Media Based on AR (Augmented Reality) on Understanding the Concept of Elementary School Geomatry 3D

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ABSTRACT

The purpose of the following research is to understand the effectiveness of the use of AR-based assemblr edu (augmented reality) applications applied to students in elementary school geometry 3D. To understand the weight that students get before and after the assemblr edu application media is applied to learning. The following research uses an experimental quantitative approach method through the One Group Pretest Posttest Design design. The results of research using the assemblr edu application have an effective impact on understanding the concept of geomatry elementary school. The average score of students increased from 49 to 72. Statistical analysis with the SPSS version 25 application obtained the average value of the N-Gain score reached 0.74 which indicates a high category. While the significance data shows 0.000 (2-tailed) (0.000), the t-count value is 43.214 while the t-tabel is 21.788. The increase in the weight of the pretest and posttest understanding of the concept of geometry 3D is 0.88211 and is included in the high improvement category. The ES weight is 2.110 which is categorized as "high". Based on the existing requirements, the ES weight shows that the use of AR-based assemblr edu application media (Augmented Reality) is effective.

Keywords: Assemblr Edu; Augmented Reality; Concept Understanding

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1. INTRODUCTION

Education plays a crucial role in the 21st century generation of learners, especially when supported by technological advancements in education. These advancements will facilitate the learning process. Education enables a change in the purpose of learning from a one-way delivery of knowledge and information, to a guiding process that supports the development of knowledge and information of learners as the center (student-centered). Learning is the process of organizing learners in their environment, which in turn can optimize their motivation to learn (Binmuslim, 2019). According to Muntoha in (Sutriyani & Widyatmoko, 2020) Education is one of the main aspects as a determinant of a nation's intelligence. Therefore, it is necessary to have educational institutions and teachers who are able to organize professional learning in the classroom. However, professional learning with creativity and innovation has not been fully implemented by educational institutions in Jepara. It appears that student learning outcomes have not increased and tend to show a decreasing graph, this also implies that the use of teaching models used by teachers is still traditionalistic and needs development. Learning is a stage undertaken by students to achieve certain goals. A conducive learning environment can make the learning stage more efficient, effective and enjoyable. Learners will not be limited to existing learning procedures, but will be faced with problems that require them to understand the concepts behind them and get a variety of procedures or strategies to solve these problems.

Concept understanding skills are closely related to problem solving. Based on Uno and Perkins in (Diana et al., 2020) explained that understanding is the ability of an individual to use the information learned. The parameters of student understanding are shown when students are able to explain concepts in their own words, apply the information appropriately to new contexts, form new analogies, and generalize. Memorization and recitation do not indicate understanding. another opinion from (Mayasari & Habeahan, 2021) Concept understanding is a crucial aspect for students. This understanding is achieved through the process of examining the skills that students have. Without a good understanding, students will have difficulty remembering the information that has been conveyed by the teacher. Based on researchers' views in various learning environments, the main cause of students' low scores is a lack of understanding of concepts. This makes them unable to work on a number of problems given by the teacher. Many students'

math scores, especially on the material of geometry 3D, are still below the KKM. Students will understand the concept better if a comprehensive review of the material is carried out, besides that there has been no development of suitable learning media in optimizing student learning outcomes so that the use of this teaching material will help students maximize knowledge.

This is in accordance with the statement (منار على محمد, 2022) teaching materials (learning media) are tools for teachers at the teaching and learning stage. This media is used as a solution for teachers to facilitate and increase the effectiveness of material delivery. The use of teaching materials is a crucial aspect of the success of the teaching and learning stage, the expression was stated by Supriyono in (Rahmannisa et al., 2023). The use of media increases student learning motivation and minimizes boredom. Technological advances have a major impact on the teaching and learning stages and can be used as a learning resource for students. This software allows the media presented to be more diverse and creative, if desired. Based on research (منار على محمد, 2022), digital-based teaching materials can optimize student learning motivation through various formats, animation and audio. The more innovative and creative the teaching materials used by teachers, the more motivated students will be to learn. One of the solutions to solve students' low understanding of the concept of geomatry material is the use of AR (augmented reality) based teaching materials tailored to the needs of modern students in the 21st century.

Augmented reality (AR) is a 3-dimensional learning media used for interesting teaching and learning stages and is believed to optimize passion or motivation for learning in students. Based on (Mursyidah & Saputra, 2022) AR is a technology that absorb virtual 2D and 3D objects into real 3D environments, allowing people to have a more natural relationship with computers by projecting virtual objects into the real world. Similarly expressed by (Dobrovská & Vaněček, 2021) in the field of education, augmented reality is very suitable, and many applications are successfully used to improve the learning process. With the advancement of the times and the development of gadget technology owned by 21st century students today, this facilitates the learning process between teachers and students. One of the applications of technology in education is through the use of AR (augmented reality) through the assemblr edu application.

The use of AR has strong implications in strengthening students' competence and material understanding. Findings by (Nugraha et al., 2021) indicates that pupils can have an engaging, stimulating, and interactive learning experience with AR media, which improves their comprehension of the material covered in class. In addition, in research (Setyawan et al., 2020) AR can be used as a tool to visualize the structure of abstract concepts and models and to understand objects. Because the use of AR is very interesting and informative.

Observations conducted on Thursday, March 27, 2023 yielded data on 13 pupils' daily math exam scores; on average, only 45% of them received scores higher than the KKM. In addition, the diversity of traits and characters and the different levels of learning understanding among students make it difficult for teachers at the learning stage. Students' difficulties in understanding concepts are caused by their ignorance of the material, so teachers need to provide a real picture so that learning material is easier to understand. Unconducive classroom conditions and less enjoyable teaching and learning stages make students less active and uninterested in learning. This happens because the teacher only focuses on the material in the LKS (Student Worksheet) handbook. Based on the description above and the support of relevant theories, researchers conducted this study to analyze the effectiveness of using AR teaching materials through the assemblr edu application on understanding the concept of geometry 3D in elementary school students.

2. RESEARCH METHOD

This study employs an experimental quantitative approach method, a Purposive Random Sampling sample selection strategy, and a One Group Pretest-Posttest design. According to Nurdyansyah (2020), this technique involves random sample selection where the sample group is targeted to have certain attributes in a study. In the following study, the purposive random sampling technique was applied with the data collection subjects being 5th grade students of State Elementary School 03 Sekuro, totaling 13 students. Research data collection was carried out through tests that were tested on students. The pretest and posttest test instruments used were descriptive questions totaling 10 questions. The data analysis technique used is N-gain score testing and one-sample t-test testing using the IBM SPSS 25 application.

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3. RESULTS AND DISCUSSION

The results of research at SDN 3 Sekuro grade 5 in mathematics subjects regarding the material of geometry 3D show that the use of assemblr edu teaching materials has proven effective in optimizing the understanding of the concept of geometry 3D in elementary schools. In order to create a positive learning environment where students actively engage with one another and teachers, educators must be able to maximise the learning resources already in use while also keeping up with the ever-accelerating pace of technological advancement. This view is also stated by Rully Charitas Indra Prahmana & Hartono in (Al Mawaddah et al., 2021) "Through the use of computers, smartphones, and the web, individuals have been able to progress innovation, instruction, and media, which has motivated individuals to get to be more profitable and proficient in their every day lives." which means through the use of computers, smartphones, and the internet, people can advance technology, education, and media, which has inspired people to become more efficient and productive in their daily lives. In fact, teachers must develop appropriate learning strategies to ensure expertise and potential development in students. According to (Hayati, 2021) in her research argues that they enjoy games that involve hands-on activities and learning by doing. Thus, teachers must be able to manage and create learning content that integrates elements of play. The above ideas are evidence that advances in educational technology and learning media have encouraged people to use electronic devices more effectively and efficiently in carrying out their daily activities. Teachers must also create effective learning strategies to ensure that learners acquire developed skills.

Based on research conducted in class 5 State Elementary School 03 Sekuro 03 Sekuro with 13 students on Thursday, March 27, 2024 and in the implementation given twice treatment (treatment) by using assemblr edu application media based on augmented reality, obtained the results of the pretest and posttest test equipment done by students. The value data can be examined in Table 1:

Table 1. *Pretest* and *Posttest* scores

Test	Lowest Score	Highest Score	Total Score	Average	Number of Students
Pretest	42	58	640	49	13
Posttest	58	80	931	72	13

Source: Research Data, 2024

The pretest and posttest values in table 1. were tested using prerequisite testing, namely normality testing. According to (Usmadi, 2020) normality testing is used as a statistical test to understand whether research variables or data have a normal data distribution or not. To test the normality of pretest and posttest data in the following study, Shapiro-Wilk testing was used. This test aims to ensure that the data is normally distributed with the condition that the significance level is > 0.05. The test was run using IBM SPSS for Windows version 25 software, and the results can be examined in table 1.

Table 2. Normality Test Results Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.184	13	.200*	.937	13	.414
Posttest	.153	13	.200*	.950	13	.592

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The outcomes of the normality test are shown in Table 2, which demonstrates that the data is normally distributed with a significance level of 0.200 > 0.05 for the student pretest. The data's normal distribution was further explained by the posttest's significance level of 0.200 > 0.05. The following results are supported by research conducted (Yulianto et al., 2022) that the values are normally distributed, where the significance level is 0.200 which exceeds 0.05, so the data can be used. In the following study, the hypothesis was tested using N-Gain score testing, which was used to evaluate the increase in understanding of the concept of geometry 3D in grade 5 students before and after being treated using AR-based assemblr

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edu application media (Augmented Reality). The N-Gain score hypothesis test was conducted with the IBM SPSS for Windows version 25 application, and the results are presented in table 5 below.

Table 3. N-Gain Test Results Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Ngain_Score	13	.28	.55	.7463	.88211
Ngain_Percent	13	27.59	55.10	74.6263	8.21063
Valid N (listwise)	13				

According to Table 3, the N-Gain score's mean or average score is 0.74, falling into the high category. The 0.88211 improvement in pretest and posttest scores for comprehending the idea of geometry 3D is likewise categorised as high. According to (Zulfa et al., 2023) The normality test, also known as the N-Gain test, is used to measure how effective a treatment is. This is supported by previous research which explained that the understanding of the concept of geometry 3D increased significantly, indicated by the posttest value that exceeded the pretest. According to the N-Gain produced by (Alqadri et al., 2021), the acquisition of a high N-Gain value, which is at a score of 0.76, from the limited trial results. The elementary school level's utilisation of 3D augmented reality-based learning resources demonstrates great satisfaction and the method's viability. In fact, based on (Anggraeni et al., 2023), AR media has a positive impact on learning to build space. This shows that previous research is in line with the results of current research regarding the effectiveness of augmented reality-based assemblr edu application media in improving understanding of the concept of geometry 3D in grade 5 elementary school students.

The results of the N-Gain Score test analysis showed a value of 0.88211, which is categorized as "high". Sourced from research (Herman et al., 2023) revealed the feasibility and satisfaction with the use of 3D Augmented Reality-based teaching materials aimed at elementary school education levels in the learning process. In research (Kuzgun, 2019) that AR technology attracts children's attention, helps them interact, and gives them a sense of reality. This shows that the use of these media can significantly optimize the understanding of the concept of geometry 3D in grade 5 students. Hypothesis testing using the one sample t-test test in the following study was carried out with the help of IBM SPSS for Windows version 25 software, and the results can be examined in table 4.

Table 4. *One Sample* Test Results One-Sample Test

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
pretest	35.824	12	.000	49.154	46.16	52.14
posttest	43.214	12	.000	71.308	67.71	74.90

Research data in table 4. The results of the One Sample Test above, can be observed that the utilization of the assemblr edu application media shows the score of significance (2- tailed) obtained 0.000. That way, the score is below the predetermined significance level of 0.05. The results of this study indicate that the significance level (2-tailed) is 0.000 < 0.05, which means that Ha has been approved and Ho is denied. It is possible to draw the conclusion that there is a difference between the pretest and posttest average values—that is, between the values obtained before and after treatment. In addition, in the results of this analysis there is a t-count value which was originally a pretest of 35.824 an increase in the posttest with a value of 43.214. As for the t-tabel set in the 12 differentiation is 21.788 . The score obtained indicates evidence that the use of assemblr edu application media based on augmented reality (AR) is very effective for the learning activity process. This is supported by the results of research conducted (Car et al., 2023) entitled "Uses of

Augmented Reality in Preschool Education" shows AR (Augmented Reality) users have the ability to relate to events, study objects around them and receive data. In line with other research conducted (Lino Padang et al., 2022) which suggests that because the representation is realistic, interactive and can be observed in various angles, assemblr edu teaching materials can help motivate students in learning.

Assemblr edu as a media means of learning resources in the results of this study indicate that the media assistance process of teaching and learning activities is able to influence students in understanding a concept, especially in geometry 3D material in elementary school delivered by educators. In line with (Iskandar et al., 2023) that the use of assemblr edu has a fairly strong influence on student interest and motivation to learn. However, the use of assemblr edu can be one of the innovations of educators as a diverse learning media and create meaningful learning experiences. Other research conducted (Ermawati & Zuliana, 2020) also reinforces the use of learning media affects grade 5 students' ability to understand math concepts, which has a positive impact on activities and interactions between students when mastering the subject matter. This helps learners to achieve the best level of achievement. It also provides the value obtained by students before getting treatment (pretest) and the value after getting treatment (posttest) of 5th grade students in using assemblr edu application media based on augmented reality (AR) on understanding the concept of geometry 3D at State Elementary School 03 Sekuro there is a significant difference in understanding the material in the classroom, especially in mathematics subjects. Learning resources in the learning process, one of which is assemblr edu application media can help educators and students. Then the research conducted (Sugiarto, 2022) stated that assemblr edu helps students understand the concept of material, and student responses regarding feasibility as media are 99.11%.

This can show that with this value obtained from the calculation stage entered in the ES (effect size) equation to determine the value of the effectiveness of its use and after calculation obtained an ES weight of 2.110 which is categorized as "high". Based on the existing requirements, the ES weight shows that the use of AR-based assemblr edu application media (Augmented Reality) is effective in optimizing understanding of the concept of geometry 3D in grade 5 Elementary School.

4. CONCLUSION

According to the study's findings, students at the 03 Sekuro State Elementary School have a considerably better grasp of the idea of creating space now that they have used the AR-based assembly edu application media (Augmented Reality). The results of the analysis using the N-Gain score test show an increase in the score of understanding the concept of geometry 3D from pretest to posttest of 0.88211, which indicates a significant increase. In addition, the results of the one sample t-test test display the significance weight (Sig.) worth 0.000 < 0.05, which rejects the null hypothesis (Ho) and accepts the alternative hypothesis (Ha). In addition, there is a t-count value which was originally a pretest of 35.824 an increase in the posttest with a value of 43.214. As for the t- table set in the differentiation of 12 is 21.788 which explains that there is a difference in the average value before (pretest) and after (posttest) the application of the media. The learning media of assemblr edu application based on augmented reality (AR) is proven to be effective than learning that does not use teaching materials in optimizing student learning understanding in the mathematics subject of elementary school geometry 3D material. This is evident from the average value of the results after the test (posttest) after the use of learning media in class 5 which is higher with a score of 49 than before the test (pretest) whose average score is 72. Furthermore, the effect size (ES) value calculated from the calculation process reached 2.110, categorized as "high" according to existing criteria. This explains that the use of AR-based assemblr edu application media is effective in optimizing the understanding of the concept of geometry 3D by students.

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REFERENCES

[1] Al Mawaddah, A. W., Hidayat, M. T., Amin, S. M., & Hartatik, S. (2021). Pengaruh Penggunaan Media

Pembelajaran Quizizz terhadap Hasil Belajar Siswa pada Mata Pelajaran Matematika melalui Daring di Sekolah Dasar. *Jurnal Basicedu*, *5*(5), 3109–3116. https://doi.org/10.31004/basicedu.v5i5.1288

[2] Alqadri, S. N. Z., Iriani, R., & Hamid, A. (2021). Pengembangan Multimedia Pembelajaran Interaktif Menggunakan Articulate Storyline Dengan Model Pembelajaran Auditory, Intellectually Dan Repetition (AIR) Pada Materi Larutan Penyangga. *Journal of Chemistry And Education*, *4*(3), 108–115.

[3] Anggraeni, B., Efwinda, S., Haryanto, Z., Sholeh, M., & Armelia, A. (2023). *SOSIALISASI PEMBELAJARAN BERBASIS AUGMENTED REALITY (AR) BAGI GURU ILMU PENGETAHUAN ALAM beberapa faktor , termasuk pentingnya memilih lingkungan belajar yang menarik*. *7*(3).

[4] Binmuslim, N. (2019). *Belajar Dan Pembelajaran Tujuan Belajar Dan Pembelajaran*. *09*(02), 193–210.

[5] Car, A., Trisuchon, J., Ayaragarnchanakul, E., Creutzig, F., Javaid, A., Puttanapong, N., Tirachini, A., Irawan, M. Z., Belgiawan, P. F., Tarigan, A. K. M., Wijanarko, F., Henao, A., Marshall, W. E., Chalermpong, S., Kato, H., Thaithatkul, P., Ratanawaraha, A., Fillone, A., Hoang-Tung, N., … Chalermpong, S. (2023). No 主観的健康感を中心とした在宅高齢者における 健康関連指標に関する共分散構造分析Title. *International Journal of Technology*, *47*(1), 100950. https://doi.org/10.1016/j.tranpol.2019.01.002%0Ahttps://doi.org/10.1016/j.cstp.2023.100950%0Ahttps://doi.org/10.1016/j.geoforum.2021.04.007%0Ahttps://doi.org/10.1016/j.trd.2021.102816%0Ahttps://doi.org/10.1016/j.tra.2020.03.015%0Ahttps://doi.org/10.1016/j

[6] Diana, P., Marethi, I., & Pamungkas, A. S. (2020). Kemampuan Pemahaman Konsep Matematis Siswa: Ditinjau dari Kategori Kecemasan Matematik. *SJME (Supremum Journal of Mathematics Education)*, *4*(1), 24. https://doi.org/10.35706/sjme.v4i1.2033

[7] Dobrovská, D., & Vaněček, D. (2021). Implementation of augmented reality into student practical skills training. *Intelligent Human Systems Integration 2021: Proceedings of the 4th International Conference on Intelligent Human Systems Integration (IHSI 2021): Integrating People and Intelligent Systems, February 22-24, 2021, Palermo, Italy*, 212–217.

[8] Ermawati, D., & Zuliana, E. (2020). Implementation Of Open-Ended Problems On Mathematical Problem-Solving Skill Of Elementary School Students. *JPSD: Jurnal Pendidikan Sekolah Dasar*, *6*(2), 145–157.

[9] Hayati, F. (2021). *Karakteristik Perkembangan Siswa Sekolah Dasar : Sebuah Kajian Literatur*. *5*, 1809–1815.

[10] Herman, H., Zalukhu, A., Hulu, D. B. T., Zebua, N. S. A., Manik, E., & Situmorang, A. S. (2023). Augmented Reality (AR) pada Geogebra Meningkatkan Kemampuan Spasial dan Pemecahan Masalah Matematis pada Materi Dimensi Tiga. *Journal on Education*, *5*(3), 6032–6039. https://doi.org/10.31004/joe.v5i3.1368

[11] Iskandar, S., Rosmana, P. S., Mutiara, E. A., Nisrina, F. A., Nadhirah, N. E., & Nengsih, N. W. (2023). Pengaruh Penggunaan Media Pembelajaran Assemblr EDU Terhadap Motivasi dan Hasil Belajar Siswa Pada Materi ASEAN Kelas VI. *Al Qodiri: Jurnal Pendidikan, Sosial Dan Keagamaan*, *20*(3), 596–606.

[12] Kuzgun, H. (2019). Utilization of augmented reality in early childhood: a case study. *Unpublished Master's Thesis). Afyon Kocatepe University, Institute of Science, Afyon*.

[13] Lino Padang, F. A., Ramlawati, R., & Yunus, S. R. (2022). Media Assemblr Edu Berbasis Augmented Reality Untuk Meningkatkan Hasil Belajar Materi Sistem Organisasi Kehidupan Makhluk Hidup. *Diklabio: Jurnal Pendidikan Dan Pembelajaran Biologi*, *6*(1), 38–46. https://doi.org/10.33369/diklabio.6.1.38-46

[14] Mayasari, D., & Habeahan, N. L. S. (2021). Analisis Kemampuan Pemahaman Konsep Siswa Dalam Menyelesaikan Soal Cerita Matematika. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *10*(1), 252. https://doi.org/10.24127/ajpm.v10i1.3265

[15] Mursyidah, D., & Saputra, E. R. (2022). Aplikasi Berbasis Augmented Reality sebagai Upaya Pengenalan Bangun Ruang bagi Siswa Sekolah Dasar. *Jurnal Pendidikan Dasar : Jurnal Tunas Nusantara*, *4*(1), 427–433. https://ejournal.unisnu.ac.id/jtn/article/view/2941

[16] Nugraha, A. C., Bachmid, K. H., Rahmawati, K., Putri, N., Hasanah, A. R. N., & Rahmat, F. A. (2021). Rancang Bangun Media Pembelajaran Berbasis Augmented Reality Untuk Pembelajaran Tematik Kelas 5 Sekolah Dasar. *Jurnal Edukasi Elektro*, *5*(2), 138–147. https://doi.org/10.21831/jee.v5i2.45497

[17] Rahmannisa, F., Rustini, T., & Tri Herlambang, Y. (2023). Rancang Bangun Media Pembelajaran Berbasis Augmented Reality Memory Card Game Pada Pembelajaran Ips Kelas 4 Sd. *Sosial Khatulistiwa: Jurnal Pendidikan IPS*, *3*(2), 62. https://doi.org/10.26418/skjpi.v3i2.57571

[18] Setyawan, B. W., Handayanto, A., & Robi, R. W. (2020). Aplikasi Pembelajaran Bangun Ruang Sisi Datar (Barsida) Menggunakan Augmented Reality (AR) Berbasis Android. *Journal Ofinista*, *3*(1), 1–12. https://doi.org/10.20895/INISTA.V2I2

[19] Sugiarto, A. (2022). *P E N G G U N a a N M E D Ia a U G M E N T E D R E a L It Y a S S E M B L R E D U U N Tu K*. 1–13.

[20] Sutriyani, W., & Widyatmoko, H. (2020). Efektivitas Model Pbl Menggunakan Media Lagu Rumus Matematika Terhadap Hasil Belajar Siswa Kelas V Sekolah Dasar. *Tunas Nusantara*, *2*(2), 220–230. https://doi.org/10.34001/jtn.v2i2.1502

[21] Usmadi, U. (2020). Pengujian Persyaratan Analisis (Uji Homogenitas Dan Uji Normalitas). *Inovasi Pendidikan*, *7*(1), 50–62. https://doi.org/10.31869/ip.v7i1.2281

[22] Yulianto, A., Kusumaningrum, S., & Polan, E. F. (2022). Dampak GLS (Gerakan Literasi Sekolah) terhadap Minat Baca Peserta Didik Sekolah Dasar. *Jurnal Papeda: Jurnal Publikasi Pendidikan Dasar*, *4*(2), 125–131. https://doi.org/10.36232/jurnalpendidikandasar.v4i2.2652

[23] Zulfa, L., Ermawati, D., & Reswari, L. A. (2023). Efektivitas Media Pembelajaran Berbasis Augmented Reality Terhadap Pemahaman Konsep Matematika Siswa Sd Kelas V. *Paedagoria : Jurnal Kajian, Penelitian Dan Pengembangan Kependidikan*, *14*(4), 509–514.

[24] منار على محمد, م. ص. ف. (2022). الاكتساب اللغوى(1) وعلاقته بتقدير الذات(2) لدى أطفال الروضة المصابين بطيف التّوحّد(3) وأقرانهم العاديين. *المجلة المصرية لعلم النفس الإكلينيكى والإرشادى*, *10*(1), 1–52. https://doi.org/10.21608/pshj.2022.250026