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The Effect of Blended Education on the Psychomotor Skills of Students of King Faisal University's College of Education

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Abstract: Introduction: The world is currently witnessing near-total closure due to COVID-19, and new technology has been developed to find solutions that accept and allow for the educational process to be applied while taking precautions into account. As a result of research in academics at the College of Education, modes of education have moved towards a blended form that mixes both traditional teachings inside classrooms and online teaching. Therefore, we aimed to determine the effect of this type of teaching in the development of the psychomotor skills of physical education students studying digital photography at the College of Education. **Methods**: We used the experimental method with a sample that we selected using the intentional method, which included 11 students studying digital photography at the department of physical education at the College of Education, King Faisal University. **Results**: All ten skills that we assessed showed statistically significant differences between their respective means of the pre-and post-measurements of the sample, the latter of which were favored. **Conclusions**: The physical education students showed excellence in working with the blended digital photography program. They have sufficient skills that qualify them to benefit from the program, thus developing their psychomotor skills.

Keywords: blended education; psychomotor skills; Faculty of Education; Saudi Arabia

1. Introduction

With the emergence of Covid-19, higher education institutions around the world were forced to close in the spring of 2020 and education faced unprecedented difficulties [1-3]. As a result, the immediate shift to online learning [4-6]. It is believed that the loss of direct human interaction between teachers and learners, as well as among the learners themselves, is the result of feeling lonely and isolation [7-9]. Moreover, many people refuse to accept this comprehensive transformation from the traditional education system to e -learning, which is the reason for the emergence of mixed education. It is one of the most successful education strategies, as it does not cancel the e -learning system or the traditional system, but rather mixes the two method [10-13]. Due to differences in translating the word "blended learning", several terms sim- lar to blended learning appeared, including "blended learning", "hybrid learning", "blended e-learning", "multi-entry learning", "authored learning" and "mixed learning"[14].

Isaacson (Isaacson 2002) indicated that, when defining blended learning, the focus should be on the word "blend", and its linguistic definition should be taken from the Oxford Dictionary, which indicates the following: a homogeneous form of ingredients and to become one . Thus, blended learning is the blending of learning strategies

and methods into a single strategy[15]. Douglas (2004) defined it as mixing traditional methods of teaching and learning, including technology-based learning; blending self-learning and collaborative learning through the Internet; or mixing virtual learning-ing and in-person learning, which is based on the learners interacting directly in class-rooms[3, 16]. Milheim (2006) defined it as a style of education that combines the characteristics of classroom teaching and online learning in an integrated model, taking advantage of the possibilities available to each of them in educating students [17]

Cameron (2006) described it as the participation of several methods of implementation, such as collaborative programs, web-based lessons, and knowledge management practice[18]

Blended education is a style of education that combines both traditional education inside classrooms and e learning to benefit from the advantages of both methods. [19, 20]The distribution of content elements and activities between traditional education and e-learning is one of the basic determinants of designing blended education programs, as some activities can be presented in-person, and others can be provided through virtual education programs and systems [5, 21, 22].

Because of the Coved -19 epidemic, some organizational procedures have changed in the teaching courses in all academic programs[6, 22, 23], as all colleges at King Faisal University have moved to integrated education, which mixes traditional education within the classroom and e learning[24]. A psychomotor activity is a behavioral activity that gives a learner a series of kinetic responses regarding oneself, in which the individual perceives a movement and then thinks about it and absorbs it, and a kinetic aspect is represented in its practice[25]. Psychomotor skills are a group of positive behavioral performances that combine psychological and physical factors in addition to the cognitive abilities of the sur-rounding space, image, body, movement and time[26-28]

On the other hand, the integration between the educational fields was used as an educational idea that can be applied, including inter -studies between art education and physical education [3, 29, 30]. That idea that was employed in this study, where the course of digital photography and the development of self -skills was taught to the students of the Bachelor of Physical Education program through integrated education, which was very effective.[14, 31].

Whereas, a graduate of the Bachelor of Physical Education Program is interested in his job as a teacher to have a good note of motor performance, and since one of the characteristics of motor performance is speed, Streamline and continuity[29]. so the graduate must notice quickly and fully realize the strengths and weaknesses of kinetic performance (the dynamic time construction of performance), And the digital photography course, with its techniques that depend on speed and muscular compatibility in freezing the image in a specific time that may smaller parts of a second, contributed to its role in developing self -skills, motor for the student of a bachelor's degree in physical education. This is also helped by the current boom in the use of computers, unlimited capabilities and technologies[32].

The research team was concerned with studying the impact of integrated education on the development of psychological skills among physical education students who study digital photography in the Department of Art Education by answering the following questions:

Q1. What is the reality of using blended education in developing psychomotor skills among students at the College of Education?

Q2. To what degree has blended education been employed in developing psychomotor skills among students at the College of Education?

Q3. Does a statistically significant difference ($\alpha \leq 0.05$) exist between the pre-and post-tests' psychomotor skill performances of students at the College of Education?

The aim of this study to recognize the effect of blended education on developing psychomotor skills among physical education students studying digital photography at the Department of Art Education.

Materials and Methods:

Study Approach:

In this study, we have chosen the pre-experimental method due to its suitability to the nature of the re-search. We designed a pre- and post-measurement for one experimental group, where we assessed the stu-dents' mastery of

psychomotor skills in digital photography before and after taking the course. This meth-od allowed us to measure changes in the dependent variable after the independent variable (digital pho-tography course) was introduced.

Study population and sample:

The study population consisted of all students at the Department of Physical Education at the College of Education, King Faisal University, who were studying digital photography and image editing in the second semester of the academic year (2021-2022). The population size was 11 students. We selected the entire population as our sample in an intentional manner because of the nature of the course, the number of students enrolled in it, and the suitability of the course's nature and subject matter to our study. However, we excluded the female portion of the sample because only male students were taught this semester.

Study tools:

To measure the students' mastery of psychomotor skills in digital photography, we used a practical skill application test and observation cards. The practical skill application test aimed to measure the students' ability to apply psychomotor skills that they learned during the course. We designed the test based on a review of educational literature and studies related to this field[19]. The test contained 9 points and was limited to four hours. During the test, the students had to complete a set of tasks that demonstrated their mas-tery of psychomotor skills in digital photography, including taking different types of photographs (slow-motion, fast-motion, press photoshoot, silhouette, landscape, portrait), and designing a poster that expressed an event on the university's campus, using their skills in image editing and word processing on the provided Photoshop program.

The observation cards aimed to determine the impact of blended learning on the development of psycho-motor skills among physical education students studying digital photography. We prepared an observation card to evaluate the students' performance before and after taking the course. The card assessed the stu-dents' ability to prepare the necessary equipment for taking a photographic snapshot, and knowledge of the mechanism of action of a photographic camera, the use of basic rules in the composition of a photograph, aesthetics in taking a successful shot, sports and fast-motion photography skills, slow-motion night pho-tography skills, silhouette photography skills, portrait photography skills (children, young men, and elder-ly), photojournalism skills, nature photography skills (live, silent), field control skills, and image editing skills with computer programs. We followed a systematic approach to design the observation card, starting with determining its objectives and evaluating its effectiveness.

Practical skill-application test:

We developed a test to measure psychomotor skills, and we based the test on a review of educational literature and studies related to this field [5]. The test contained 9 points and was limited to four hours. Digital photography was a considered factor when designing this test. Digital photography is an art that amateurs and specialists can practice alike, and in which they can achieve a high degree of creativity and skill. During the study of the course, and with a professional digital imaging camera, the students made the following:

-Slow-motion night shot.
-Sports shot or a fast-motion shot.
-Press photoshoot.
-Silhouette shot.
-Landscape photograph (live, silent).
-A shot that reflects personal knowledge of how to deal with field of depth.
-Portrait photographs of a child, a young man and an elderly person.

These shots should reflect one’s mastery of the basic rules of creating a successful photograph.

With the help of one of these images, the students designed a poster that expressed an event that was organized on the university’s campus. They made use of their skills in editing images and word processing on the provided Photoshop program (Using a computer drawing board (tablet) and an electronic drawing pen, which helps the

student to develop visual motor coordination), ensuring that their works were sent in a suitable quality in the JPG format and that any one image does not exceed 1 megabyte.

Test Validity:

To ensure the validity of the practical skill application test, we presented it to a group of specialists in physical education and art education. After editing the test questions with the help of specialists in graphics and educational technologies, the specialists were asked to express their opinions and observations regarding the test. 89% of the specialists agreed that the quality and effectiveness of the test were sufficient for its implementation. This feedback helped us ensure the validity of the test.

Test Reliability:

We confirmed the stability of the practical skill application test using the retest method. We repeated the test on the same research sample twice in succession, with an interval of two weeks, which allowed us to measure the test's reliability coefficient (Cronbach's alpha) between the results obtained for the two tests. The Cronbach's alpha was 0.827, indicating that the test was highly reliable.

Observation Card:

We followed a systematic approach to design the observation card, starting with determining its objectives and evaluating its effectiveness. The observation card aimed to evaluate the students' performance before and after taking the course, and we followed the following steps:
First, we determined the objectives of the card. The card was used to assess psychomotor skill performances among physical education students studying digital photography (the research sample), with the aim of revealing the effectiveness of the blended educational environment, which includes two styles of educational content organization (prepared / ready), evaluating the following elements:
-Ability to prepare the necessary equipment for taking a photographic snapshot, and knowledge of the mechanism of action of a photographic camera.
-Ability to make use of basic rules in the composition of a photograph, and its aesthetics in taking a successful shot.
-Sports and fast-motion photography skills.
-Slow-motion night photography skills.
-Silhouette photography skills.
-Portrait photography skills (children, young men and elderly).
-Photojournalism skills.
-Nature photography skills (live, silent).
-Field control skills.
-Image editing skills with computer programs.
All of these skills depend mainly on the ability of the physical education student to realize the element of time and control it in freezing the movement that he is photographing in a fraction of a second. In addition to the visual kinetic compatibility in the implementation process, whether photography or design.

Test Validity and Reliability:

In order to ensure the validity and reliability of our research tools, we presented the practical skill-application test and observation card to a group of specialists in physical education and art education. The specialists were asked to express their opinions and observations regarding the test and observation card. We used their feedback to make necessary modifications and improvements to the tools. We also measured the reliability coefficient (Cronbach’s alpha) between the results obtained for the practical skill-application test, and the Cronbach’s alpha was 0.827, which implied that the test was highly reliable.

Data Analysis:

We used descriptive statistical analysis methods to analyze the data collected from the practical skill-application test and observation card. We calculated means, standard deviations, and percentages to describe the data. We also used inferential statistical analysis methods to determine the significance of the differences between the pre- and post-test scores of the students. We used the paired samples t-test to de-termine whether there were significant differences between the means of the pre- and post-test scores. We also used the effect size (Cohen's d) to measure the magnitude of the differences between the means of the pre- and post-test scores.

Ethical Considerations:

We obtained ethical approval from the Research Ethics Committee at King Faisal University before con-ducting the study (KFU-REC-2023- FEB-ETHICS575). We also obtained informed consent from all par-ticipants in the study, and we ensured their anonymity and confidentiality by assigning code numbers to the participants instead of using their names.

3. Results

Table 1. Results of the test to determine differences between traditional learning and e-learning for measurements of the sample under investigation.

	Mean-pre	Mean-post	Mean Differences	t	P-value	Cohen's D	Degree of effect
First skill: Being able to prepare the necessary equipment to take the photograph, and knowing how the camera works.							
Determining the appropriate location for the photographer in relation to the target (distance and angle) and familiarity with the mechanism and technique of the camera.	1.6364	3.9091	2.27	-9.59	0.0001	2.9	Large
The Accuracy and success specifying the camera's position and familiarity with types of lenses.	1.8182	3.6364	1.82	-6.14	0.0001	1.9	Large
Preparing the appropriate flashes and knowing their characteristics.	1.9091	3.8182	1.91	-21.00	0.0001	6.3	Large
Preparing media storage and image management.	2.5455	4.0909	1.55	-7.46	0.0001	2.2	Large
Knowing the types of mounts and their supplements as well as the differences between them.	1.7273	3.5455	1.82	-8.03	0.0001	2.4	Large
The second skill: the ability to employ the basic rules in the composition of the photograph and its aesthetics in taking a successful shot.							
Simplicity, focus and avoiding confusion.	1.7273	3.7273	2	-6.63	0.001	2.0	Large
Dynamic lines of movement in the image.	1.4545	3.5455	2.09	-6.64	0.0001	2.0	Large

Take into account shape, background, as well as mass and space.	1.7273	3.5455	1.82	-10.00	0.0001	3.0	Large
Balance and consistency of colors and their implications in the image.	1.6364	3.8182	2.18	-6.20	0.0001	1.9	Large
Success in employing the element of shadow and light.	2.0909	3.8182	1.73	-7.29	0.0001	2.2	Large
Equilibrium in the composition within the image.	1.5455	3	1.45	-4.66	0.0001	1.4	Large
Framing the composition within the shot.	1.9091	3.2727	1.36	-6.71	0.0001	2.0	Large
Achieving geometric and aerodynamic perspective in the image.	1.7273	4.4545	2.73	-19.37	0.0001	5.8	Large
Applying the rule of thirds and the center of attention.	1.3636	4.5455	3.18	-17.50	0.0001	5.3	Large
Third skill: Sports and fast photography skills.							
Adjusting the shutter speed and controlling exposure time.	1.7273	3.9091	2.18	-9.64	0.0001	2.9	Large
Adjust the lens aperture appropriate to the idea of sports photography.	1.4545	3.8182	2.36	-11.63	0.0001	3.5	Large
setting the camera's sensitivity (ISO)	1.9091	3.9091	2.00	-10.49	0.0001	3.2	Large
Control the time element and seize the right moment to freeze the movement.	1.5455	3.9091	2.36	-11.63	0.0001	3.5	Large
Fourth Skill: Slow Night Photography Skills							
Adjusting shutter speed and controlling exposure time.	1.7273	3.9091	2.18	-9.64	0.0001	2.9	Large
Adjust the lens aperture appropriate for the idea of slow night photography.	1.8182	3.6364	1.82	-14.91	0.0001	4.5	Large
Adjusting the camera's sensitivity (ISO).	1.5455	3.9091	2.00	-10.49	0.0001	3.2	Large
Understanding the length of time element	2.0909	3.9091	1.82	-5.59	0.016	1.7	Large
Controlling the equipment while taking the shot and avoiding shake	1.9091	3.0909	1.18	-6.50	0.0001	2.0	Large
Fifth skill: Silhouette photography skills							
The elements and shooting angles distribution	2.0909	3.3636	1.27	-9.04	0.0001	2.7	Large
Taking into account the light spaces around and inside the dark elements.	2.9091	4.0909	1.18	-5.22	0.0001	1.6	Large

Choosing the right time and appropriate lighting for shooting.	2.1818	3.5455	1.36	-8.96	0.0001	2.7	Large
the control of camera settings in silhouette photography.	2.2727	2.7273	0.45	-2.89	0.0001	0.9	Large
Sixth skill: Portrait photography skills.							
Mastering the skill of children's portrait photography.	1.7273	2.5455	0.82	-6.71	0.0001	2.0	Large
Mastering the skill of teenager's portrait photography.	2.5455	3.3636	0.82	-6.71	0.046	2.0	Large
Mastering the skill of portrait photography for the elderly.	2.0909	4.1818	2.09	-9.90	0.0001	3.0	Large
Treatment of shadows and light in portraiture.	2.3636	4.3636	2.00	-7.42	0.0001	2.2	Large
Art of expressing emotions.	2.4545	4.4545	2.00	-6.06	0.0001	1.8	Large
Different portrait modes.	2.5455	3.3636	0.82	-6.71	0.0001	2.0	Large
Seventh skill: photojournalism skills							
Various types of photojournalism techniques.	2.3636	3	0.64	-2.28	0.0001	0.7	Medium
Being careful in choosing the right time to take the photo.	1.7273	3.1818	1.45	-9.24	0.0001	2.8	Large
Using the appropriate lenses for photojournalism.	1.7273	2.8182	1.09	-6.71	0.0001	2.0	Large
Using the appropriate flash for photojournalism.	2.1818	3.9091	1.73	-12.26	0.0001	3.7	Large
Eighth skill: Live and silent nature photography skills.							
Skill in highlighting the elements of landscape (water - earth - sky)	2.0909	4.1818	2.09	-7.35	0.0001	2.2	Large
The skill of choosing the appropriate time and equipment for nature photography.	1.8182	3.3636	1.55	-9.82	0.0001	3.0	Large
Success in preparing the composition inside the studio using artificial light sources.	1.3636	2.4545	1.09	-6.71	0.0001	2.0	Large
The ninth skill: Depth of field control skills.							
Aperture control.	1.6364	2.5455	0.91	-10.00	0.0001	3.0	Large
Focal length change control.	2.2727	3.1818	0.91	-10.00	0.0001	3.0	Large
Varying the distance between the camera and the subject.	1.4545	4.8182	3.36	-16.55	0.0001	5.0	Large
The tenth skill: Editing and image editing skills with computer programs							

Changing and modifying the colors of the image with the Photoshop image processing program.	1.4545	4.5455	3.09	-14.63	0.0001	4.4	Large
Cutting and pasting using the program.	1.6364	4.9091	3.27	-10.76	0.0001	3.2	Large
The skill of using and moving layers.	1.8182	5	3.18	-10.75	0.0001	3.2	Large
Using filters on the photo.	1.3636	4.1818	2.82	-12.45	0.0001	3.8	Large
Employ the masking tool to combine images and fill shapes.	1.3636	3.7273	2.36	-7.63	0.0001	2.3	Large
Employing the image within the design, adding texts and effects, as well as eye to hand muscular coordination in using drawing tablets	1.9091	4	2.09	-12.86	0.0001	3.9	Large
Being able to render and print the image on different media as well as knowing the settings for that.	1.3636	3.7273	2.36	-11.63	0.0001	3.5	Large

From Table (1), we can see that all ten skills that comprise the observation card have statistically significant differences between the means of the pre and post-measurements of the sample, the latter of which were favored, as the arithmetic mean of the post-measurements of the sample was higher than the arithmetic mean of the pre-measurements for the the first skill, “Preparing necessary equipment for taking photographs and knowing how a camera works”.

The results shown in the table show a rise in student achievement rates in the ten skills in general, which confirms the effectiveness of the program offered to students and its impact on their acquisition of the required skills. The students’ behavioral performances depended on their awareness of the surrounding space and the scene, as well as their awareness of the image, the body, movement and the time required to freeze the required movement to achieve a specific shape.

We note that the value of the tenth skill increased by 4.45, which is the skill of editing and modifying images in Photoshop. The visual kinetic compatibility in the use of computer design panels also increased, which reflects the ease of dealing with the program’s tools and panels by students of physical education. The fourth and eighth skill levels, “Slow-motion night photography skills” and “Live and silent nature photography skills”, had value increases of 3.82 and 2.82, respectively. They are followed by the first skill, with a value increase of 3.8, which is “Preparing necessary equipment for taking photographs and knowing how a camera works”. We also notice a relative decrease in the value of the ninth skill by 2.73, which is “Controlling the field of depth” and is a difficult skill to acquire. It involves a complex process that relies on advanced technologies and deals directly with several types of lenses with different focal lengths.

4. Discussion

Blended education had a significant positive effect on the psychomotor skills of physical education students studying digital photography at the College of Education, King Faisal University in Saudi Arabia. The results showed that there were statistically significant differences in all 10 skills assessed between the pre-and post-measurements of the sample, with the post-measurements showing improvement. The P-values were all less than 0.0001, indicating a very low probability that the results were due to chance. The large degree of effect, as measured by Cohen's d, ranging from 1.4 to 6.3, suggests that the effect of blended education on these skills was substantial.

The students' behavior in each form depended on their awareness of the surrounding space and scene, as well as their awareness of image, body, movement, and the time required to freeze the movement required to achieve a particular shape [31] This is due to the advanced level of students in kinesthetic perception resulting from their practice of courses that include neuromuscular and motor coordination in the Bachelor of Physical Education program, and this was evident in the speed of students' response to the skills of the course. This was confirmed by Al-Rantissi 2015 study to reveal the impact of the use of blended learning and superior media on cognitive achievement, and the acquisition of digital photography skills among journalism students at the University of Gaza [32]. To verify the research hypotheses, the researcher used the experimental method. A test containing 40 multiple-choice questions was applied, with the aim of measuring cognitive achievement, and a note card consisting of 24 items, with the aim of measuring skillful performance. The results of the search revealed that there were statistically significant differences at the level of significance ($\alpha = 0.01$) between the average scores of the students of the experimental group and the students of the control group in the cognitive achievement test, in favor of the experimental group, and the effect size was large and amounted to (0.62), as the results of the performance observation card resulted Al-Mahari reported that there were statistically significant differences at the level of ($\alpha = 0.01$) between the average scores of the students of the experimental group and the students of the control group in favor of the experimental group, and the effect size was large and amounted to (0.76) [10].
The blended learning used in this research paper has proven its effectiveness in learning applied practical skills, and this is what the researchers agreed with (Kobchai Siripongdee, Paitoon Pimdee, and Somkiat Tuntiwongwanich, 2020)[23], as it showed that blended learning is the most appropriate educational approach that provides solutions to overcome the obstacles resulting from the pandemic. Covid-19.
Therefore, blended education is one of the most flexible learning styles and is able to deal with the obstacles that education suffers from in light of the Corona crisis, and this difference in results shows the need for more studies on the best patterns and methods appropriate to the blended education strategy within the framework of a specific educational environment that has its limitations. Like the colleges of education environment.[33]

The study's finding is consistent with previous research that has shown blended education to be an effective approach to learning. Blended education, also known as hybrid education, combines traditional classroom instruction with online learning and has been found to have a positive impact on student learning outcomes[14]. This approach allows for more flexibility and personalized learning experiences for students and allows teachers to better tailor instruction to meet the needs of individual students.[34, 35]

One of the strengths of the study is that it specifically focused on psychomotor skills, which are physical skills that are developed through mental processes[36, 37]. This is an important area of research as psychomotor skills are an essential component of physical education and are critical for overall physical development and fitness[38, 39,40].

However, the study also has some limitations. The sample size was relatively small, with only 11 students, which could limit the generalizability of the results. Addition-ally, the study did not consider other factors that could impact the results, such as students' prior knowledge and experience with digital photography, students' prior experience with blended education, or students' motivation to learn.
Furthermore, it would be important to conduct a more detailed analysis of the specific psychomotor skills assessed in the study, as well as their relationship to digital photography, in order to better understand the results and their implications[28]. Additionally, it would be beneficial to conduct a more in-depth examination of student perceptions and attitudes towards blended education, as well as the effectiveness of different blended education models, in order to gain a more complete understanding of the impact of blended education on psychomotor skills.

In conclusion, the study provides valuable insights into the impact of blended education on psychomotor skills and the results suggest that blended education can be an effective approach to learning for physical education students studying digital photography. However, additional research with larger sample sizes, considering other

factors that could impact the results, and a more in-depth examination of student perceptions and attitudes towards blended education is needed to further confirm these findings.

5. Conclusion

It is clear that the digital photography course can significantly contribute to the development of physical education teachers' skills in preparation, observation, diagnosis, and intervention. The use of digital pho-tography and image processing software can help these teachers to effectively capture and analyze the movements of their students, identify areas of weakness, and provide tailored interventions to improve their performance. Moreover, the physical education students who have been exposed to the integrated digital photography program have shown excellence in their motor skills development, indicating that this program can positively impact their physical abilities.

Furthermore, the fact that these students showed a clear distinction in visual kinesthetic compatibility while dealing with image processing panels on the Photoshop program is a noteworthy observation. This highlights the importance of using modern digital tools in physical education, as they can enhance stu-dents' engagement and motivation by providing a more immersive and interactive learning experience. It is essential for physical education teachers to stay up-to-date with the latest technological advancements and incorporate them into their teaching practices to ensure that their students receive the most effective and engaging learning experiences possible.

In conclusion, the integration of digital photography into physical education courses can bring significant benefits to both teachers and students. The mastery of these skills can help physical education teachers to develop their preparation, observation, diagnosis, and intervention skills, while providing an engaging and interactive learning experience for their students. It is recommended that physical education teachers re-ceive training in digital photography and image processing software to help them effectively integrate these tools into their teaching practices.

6. Recommendations

Based on the findings of this study, it is recommended that further research be conducted with larger sample sizes and considering other factors that could impact the results, such as students' prior knowledge and experience with digital photography, students' prior experience with blended education, or students' motivation to learn. Additionally, it would be beneficial to conduct a more in-depth examination of student perceptions and attitudes towards blended education, as well as the effectiveness of different blended education models, in order to gain a more complete understanding of the impact of blended education on psychomotor skills.

Furthermore, it would be beneficial for further studies to compare the results with similar studies to see if the findings are consistent with other research in this field. This will help to put the findings in context and provide a more comprehensive understanding of the impact of blended education on psychomotor skills

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