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Analysis of Student Perceptions on Blended Learning Using Learning Management System (LMS) for Physical Education, Sports, and Health Courses

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Abstract*—This study investigates student perceptions of LMS-based Blended Learning in Physical Education, Sports, and Health subjects at Public Junior High School 25 in Barru Regency, South Sulawesi, Indonesia. A descriptive quantitative design was utilized for this research. Probability sampling was employed to ensure representativeness. Data was collected through a structured questionnaire consisting of twenty- five items designed to measure four key aspects of LMS- based blended learning: e- learning knowledge, e- learning accessibility, e- learning usefulness, and e- learning usage satisfaction. The reliability of the questionnaire was confirmed via Cronbach's α, which produced a value of 0 830, and McDonald's ω, yielding a value of 0 0.850, indicating strong internal consistency and reliability of the instrument. Results showed that 82. 55% of respondents agreed or strongly agreed that e- learning knowledge is vital for supporting blended learning, suggesting awareness and confidence among students regarding the role of digital learning tools in enhancing their educational experiences. Additionally, 61. 61.41% agreed or strongly agreed that e- learning accessibility significantly aids the implementation of blended learning, emphasizing that easy access to LMS platforms is crucial for student engagement. Furthermore, 60. 16% acknowledged the importance of e- learning usefulness in the current educational landscape, highlighting a widespread recognition of digital tools' significance in education. Lastly, 53. 83% stated satisfaction with e- learning usage is a key factor influencing successful blended learning experiences. These findings indicate a favorable perception among students toward LMS-based blended learning in physical education, sports, and health subjects. The study emphasizes the importance of e- learning knowledge, accessibility, usefulness, and satisfaction for creating effective blended learning environments. Further research is suggested to examine the long-term effects of LMS-based blended learning on student outcomes across diverse educational settings.

***Keywords*—Perception; blended learning; learning management system (LMS); physical education; sports; health.**

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I. Introduction

Education, which serves as the cornerstone for developing human potential, has undergone continuous evolution. Recent decades have witnessed a substantial transformation in educational approaches, mainly due to advancements in information and communication technology. The traditional educational landscape has undergone considerable transformation [1]. The digital era has revolutionized our engagement with information, including in education [2]. This evolution has necessitated incorporating technological tools into educational practices to address contemporary requirements [3]. The emergence and advancement of information and communication technology (ICT) have reshaped the global educational environment. Combining the benefits of online education and face-to-face classroom instruction, blended learning offers a cutting-edge approach. This method creates an engaging learning atmosphere that addresses students' requirements in today's digital world [4]. The evolution of blended learning models is one of the most significant advancements in modern education [5]. Combination learning, also known as blended learning, is an educational approach that integrates traditional classroom instruction and online educational methods [6]. This strategy creates a more comprehensive learning experience by leveraging the strengths of both in-person and digital learning environments to meet the educational objectives [7].

Students exhibit various approaches to learning. While some thrive in face-to-face educational settings, others excel at independent online study materials [8]. The blended learning model caters to this diversity by incorporating multiple instructional methods, thereby addressing the various needs of different learners [9].

The hybrid approach to blended learning has numerous advantages [10]. The combination of online and in-person instruction allows students to tailor their learning schedules by taking advantage of flexibility in timing and location [11]. The digital component also improved access to educational materials. Nevertheless, face-to-face interactions are essential for cultivating social skills and building interpersonal relationships. Hybrid learning, also known as blended learning, is an educational strategy that combines online and in-person teaching methods within a single course or program. Different researchers have interpreted and defined blended learning in various ways, highlighting the range of approaches and understandings within this educational framework.

Blended learning integrates online digital resources with conventional face-to-face teaching methods in educational settings [12]. Integration has the potential to enhance the overall educational experience and provide students with increased flexibility in their learning journey. A study by [13] suggests that blended learning combines online instruction with traditional classroom methods. The study also observed that this approach improves both the productivity and quality of the learning experience. While, Bull [14], an expert in education research, defines blended learning as an approach that integrates diverse instructional techniques, electronic resources, and educational content to establish a more comprehensive and impactful learning setting.

Christensen et al [15] defines blended learning as an educational method where students primarily engage in independent learning through technology, with educators providing guidance and support when necessary. Garrison and Kanuka [16] describe blended learning as an educational approach that integrates online learning components with traditional face-to-face classroom methods, emphasizing student interactions and their utilization of learning materials.

Blended learning, as described by [17] which combines web-based and face-to-face educational methods to establish a flexible learning environment that caters to students' needs. E-learning specialists Bonk and Graham [18] define blended learning as an approach that integrates various learning methods, including traditional classroom instruction, web-based learning, and additional educational components. This definition highlights the widespread agreement on including in-person and online elements in blended learning. However, the specific application of this approach may differ based on the requirements, educational goals, and circumstances of individual schools or academic programs. Cendra and Gazali [19] propose that the perception of blended learning can be evaluated using four key indicators: a) understanding of blended learning concepts, b) ease of access to blended learning resources, c) perceived advantages of blended learning, and d) overall contentment with the blended learning experience.

Although blended learning offers significant potential, its implementation is not without obstacles [20]. These hurdles include issues with access to technology, students' difficulties in navigating online learning platforms, and the complexities educators face in creating a well-balanced educational experience that combines traditional and digital elements [21]. The effectiveness of the blended learning approach was significantly influenced by how students perceived it [22]. Their recognition of its benefits, such as enhanced convenience and improved learning outcomes, could affect their willingness to participate actively and engage in the educational process.

Examining how students perceive blended learning has become increasingly important in the digital education landscape because of its intricate challenges and possibilities. Gaining insight into students' perspectives can offer valuable information to enhance the design of blended learning approaches, ensuring that they align more closely with students' requirements and expectations [23]. By gaining comprehensive insight into the context of students' views on blended learning, we can identify the potential challenges that might emerge. Consequently, efforts to enhance this educational approach can be more focused and productive, fostering a learning environment that adapts to and responds to the requirements of contemporary students.

II. Materials and Methods

This study employed both qualitative and quantitative methods to examine student perspectives thoroughly. This study was conducted in Public Junior High School 25, Barru regency, South Sulawesi, Indonesia. The participants in this research were students who were enrolled in Physical Education, sports, and health classes. This study utilized a questionnaire as the primary method for gathering data, consisting of written questions and statements for respondents to answer. Questionnaires are considered efficient data collection techniques in many studies. Additionally, to evaluate the study's outcomes, the researchers employed a Likert-scale questionnaire as the research instrument.

A Likert scale was employed to evaluate the attitudes, opinions, and perceptions of individuals or groups regarding social phenomena [24]. This scale allows the variables to be translated into specific indicators. This study employed a descriptive research approach, utilizing quantitative descriptive data analysis. The analytical method involved descriptive statistics, which encompassed the use of percentages. Descriptive statistical techniques include presenting data through various visual aids such as tables, graphs, diagrams, circles, and pictograms. Additionally, they involve calculating the central tendencies (mean, mode, median), measures of dispersion (deciles, percentiles), data distribution, standard deviation, and percentages. The primary analytical technique used in this study was the calculation of the relative frequency percentages.

III. Results and Discussion

A. Data Description

This study gathered information through surveys distributed to students. Before the distribution, the questionnaire underwent testing to assess its validity for respondents. The survey comprised twenty-five items, covering four key areas: 1) knowledge of e-learning, 2) access

to e-learning, 3) benefits of e-learning, and 4) satisfaction with e-learning use. For the validity assessment, 149 students participated in the test. The outcomes of this evaluation are shown in Table 1.

TABLE I
RESULTS OF RELIABILITY TEST QUESTIONNAIRE

Scale Reliability Statistics		
	Cronbach's α	**McDonald's ω**
scale	**0.830**	**0.850**

Note. items 'C', 'E', 'F', 'K', 'L', 'Q', 'T', 'V', and 'X' correlate negatively with the total scale and probably should be reversed

The reliability of the questionnaire is confirmed by the values shown in Table 1, where Cronbach's α is 0.830 and McDonald's ω is 0.850. These figures indicate that the survey instrument is suitable for use.

B. Results

1) Students' Perception of Blended Learning Based on Learning Management System (LMS) in Physical Education, Sport, and Health Subjects in Review of E-Learning Knowledge Indicator: Examining Student Views on Blended Learning Using Learning Management System (LMS) in Physical Education, Sport, and Health Courses: Focusing on E-Learning Knowledge Indicators. The e-learning knowledge component is a crucial metric in this study as it provides insights into students' understanding of e-learning.

According to Table 2, approximately 85.25% of the participants agreed or strongly agreed that online learning is a platform for educators to disseminate materials and post assignments. By contrast, only 14.75% expressed disagreement or strong disagreement. This finding aligns with a comprehensive meta-analysis by Castro and Tumibay [25], who found that students generally show positive perceptions towards material accessibility in blended learning environments. This suggests that most respondents believe that the blended learning approach in online education enhances course materials and tasks distribution.

Table 2 also reveals that approximately 79.87% of respondents agree or strongly agree that online learning enhances information delivery, while 20.13% disagree or strongly disagree.

TABLE II
STUDENT FEEDBACK ON THEIR PERCEPTIONS OF BLENDED LEARNING UTILIZING LEARNING MANAGEMENT SYSTEM (LMS) IN PHYSICAL EDUCATION, SPORTS, AND HEALTH COURSES, SPECIFICALLY ADDRESSING THE E-LEARNING KNOWLEDGE INDICATOR

Statement	**Strongly agreed**		**Agreed**		**Disagreed**		**Strongly disagreed**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Online learning is one of the tools used by teachers for learning activities in terms of sharing materials and uploading assignments.	40	26.85	87	58.39	21	14.09	1	0.67
Online learning makes it easier to deliver information.	34	22.82	85	57.05	24	16.11	6	4.03
Average	**74**	**24.83**	**172**	**57.72**	**45**	**15.10**	**7**	**2.35**

This is consistent with Churiyah et al.'s [26] findings on Indonesia's education readiness for conducting distance learning during the COVID-19 pandemic demonstrated that effective content delivery in online learning environments significantly correlates with student satisfaction and engagement. These findings indicate that the blended online learning system improves the efficiency of information transmission in educational settings, supporting Martin et al.'s global study which demonstrated that well-structured online learning platforms facilitate effective educational content distribution [27].

2) Students' Perception of Blended Learning Based on Learning Management System (LMS) in Physical Education, Sports, and Health Subjects in Review of E-Learning Accessibility Indicators: Table 3 shows the findings of a study examining how students view blended learning that utilizes a learning management system (LMS) in physical education, sports, and health courses, explicitly focusing on e-learning accessibility factors.

TABLE III
STUDENT FEEDBACK ON THEIR PERCEPTION OF LMS-BASED BLENDED LEARNING IN PHYSICAL EDUCATION, SPORTS AND HEALTH COURSES, ANALYZED THROUGH E-LEARNING ACCESSIBILITY METRICS

Statement	**Strongly agreed**		**Agreed**		**Disagreed**		**Strongly disagreed**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**
By using online learning, learning can be done anywhere and anytime.	44	29.53	91	61.07	13	8.72	1	0.67
The implementation of online learning is not as easy as expected.	8	5.37	43	28.86	76	51.01	22	14.77
Online learning makes it easier for students to access learning materials.	41	27.52	73	48.99	30	20.13	5	3.36
Online learning is ineffective for students living in areas with difficult networks.	7	4.70	29	19.46	70	46.98	43	28.86
It is quite easy to use online learning in learning	36	24.16	86	57.72	24	16.11	3	2.01
The operation of the online learning system is stable and smooth.	29	19.46	83	55.70	32	21.48	5	3.36
The imbalance of network access and technology can hinder learning.	8	5.37	29	19.46	74	49.66	38	25.50
An online learning system can be easily used	46	30.87	79	53.02	22	14.77	2	1.34
Average	**219**	**18.37**	**513**	**43.04**	**341**	**28.61**	**119**	**9.98**

According to Table 3, approximately 90.60% of the participants agreed or strongly agreed that online learning enables studying from any location at any time, with only 9.40% disagreeing or strongly disagreeing. This finding aligns with Dhawan's findings on online learning as a panacea during the COVID-19 crisis, highlighting flexibility as a key factor in the successful implementation of online learning. [28]. This suggests that most respondents believe the blended learning approach offers flexibility in terms of time and place for the learning process.

The data in Table 3 indicates that 34.23% of respondents agreed or strongly agreed that online learning implementation was more challenging than anticipated, while 65.77% disagreed or strongly disagreed. This aligns with Aristovnik et al.'s global perspective on the impacts of the COVID-19 pandemic on higher education students' lives, which found decreasing implementation challenges as users became more familiar with online learning platforms [29]. This implies that most participants did not perceive online learning as particularly difficult to implement.

Regarding the effectiveness of online learning for students in areas with poor network connectivity, 24.26% of the respondents agreed or strongly agreed that it was not effective, while 75.74% disagreed or strongly disagreed. These findings correspond with Bao's case study of online teaching in higher education at Peking University during COVID-19, which demonstrated that technological barriers have become less significant over time [30]. This indicates that most participants believe that online learning remains effective, even in areas with network challenges.

The findings also revealed that 72.48% of respondents agreed or strongly agreed that online learning facilitates easier access to study materials, compared to 27.52% who disagreed or strongly disagreed. This pattern supports Sahu's (2020) findings on the impact of university closures due to COVID-19 on the education and mental health of students and academic staff, particularly regarding improved accessibility of educational resources [31]. This suggests that overall, participants view online learning as beneficial for accessing educational resources.

In terms of user friendliness, 81.88% of respondents agreed or strongly agreed that online learning is easy to use, with only 18.12% disagreeing or strongly disagreeing. This suggests that the majority of participants found online learning relatively straightforward. Approximately 75.16% of respondents agreed or strongly agreed that the online learning system operates smoothly and stably, while 24.84% disagreed or strongly disagreed. This implies that most participants perceived the online learning system as reliable and consistent in their performance. Concerning the potential hindrance to learning due to uneven network access and technology, only 24.83% of respondents agreed or strongly agreed, while 75.17% disagreed or strongly disagreed. This suggests that most participants did not view disparities in network access and technology as significant obstacles to the learning process.

3) Students' Perception of Blended Learning Based on Learning Management System (LMS) in Physical Education, Sports, and Health Subjects in Review of E-Learning Benefit Indicators: According to Table 4, approximately 78.53% of the participants agreed or strongly agreed that utilizing online learning platforms facilitates concluding teacher-provided material. In comparison, roughly 21.47% disagreed or strongly disagreed. This indicates that most respondents believe that online learning tools enhance their ability to synthesize information from instructional content. This finding aligns with Hamid et al.'s [32] study on the effectiveness of online learning environments, which demonstrated that students' ability to conclude course materials improved when using online learning platforms

The same table reveals that approximately 83.22% of those surveyed agreed or strongly agreed that online learning supports students' educational activities, with only 16.78% expressing disagreement or strong disagreement. This suggests that most participants perceived online learning as beneficial to their academic pursuits.

Table 4 also demonstrates that 42.28% of the students agreed or strongly agreed that online learning hinders obtaining teacher feedback, whereas 57.72% disagreed or strongly disagreed. This implies that most respondents did not find online learning to be an obstacle to receiving instructor feedback.

Additionally, regarding whether online learning enhances students' confidence in communicating with teachers about challenging materials, approximately 72.48% of respondents agreed or strongly agreed, while only 27.52% disagreed or strongly disagreed. This leads to the conclusion that most participants believe online learning boosts their confidence in discussing difficult concepts with instructors. Regarding the ease of understanding and completing assignments through online learning, approximately 75.16% of the participants expressed or strongly agreed, while only 24.84% disagreed or strongly disagreed. This indicates that most respondents believed that online learning facilitates comprehension and task completion for students.

Concerning the comprehension of materials during online learning, roughly 34.9% of respondents agreed or strongly agreed that students understood less, whereas 65.1% disagreed or strongly disagreed. These findings suggest that students can effectively grasp material when learning occurs online. This is consistent with Maqableh and Alia's research [33] on the impact of online learning on student comprehension during the COVID-19 pandemic, which found that online learning environments did not significantly hinder students' understanding of course content.

Concerning the quality of teacher-student interactions in online learning, about 63.09% of the participants agreed or strongly agreed that it improved, while only 36.91% disagreed or strongly disagreed. This leads to the conclusion that most respondents perceived online learning as enhancing the interaction between educators and students. This finding supports Octaberlina and Muslimin's research [34]on the impact of online learning on teacher-student interactions, which demonstrated that well-designed online learning platforms can facilitate more effective communication and collaboration between instructors and learners.

TABLE IV
LEARNER FEEDBACK ON THE PERCEPTION OF INTEGRATED LEARNING UTILIZING LEARNING MANAGEMENT SYSTEMS (LMS) FOR PHYSICAL EDUCATION, SPORTS, AND HEALTH COURSES, FOCUSING ON THE ADVANTAGES OF ONLINE EDUCATION METRICS

Statement	Strongly agreed		Agreed		Disagreed		Strongly disagreed	
	F	%	F	%			F	%
The use of online learning media makes it easier to conclude the material provided by the teacher.	42	28.19	75	50.34	28	18.79	4	2.68
Online learning can help students with learning activities.	48	32.21	76	51.01	23	15.44	2	1.34
Online learning makes it difficult for students to get feedback from teachers.	7	4.70	56	37.58	67	44.97	19	12.75
Online learning helps students to be more confident in communicating with teachers about materials that are difficult to understand.	39	26.17	69	46.31	37	24.83	4	2.68
Online learning makes it easier for students to understand and do assignments.	38	25.50	74	49.66	29	19.46	8	5.37
Students have less understanding of the material when learning is done online.	12	8.05	40	26.85	69	46.31	28	18.79
Online learning can improve the quality of interaction between teachers and students.	26	17.45	68	45.64	46	30.87	9	6.04
Online learning is quite helpful in optimizing learning.	28	18.79	86	57.72	32	21.48	3	2.01
Online learning makes it difficult for teachers to monitor students during learning.	10	6.71	27	18.12	56	37.58	56	37.58
Online learning can increase students' motivation to learn.	36	24.16	70	46.98	37	24.83	6	4.03
Online learning can decrease students' social skills.	11	7.38	48	32.21	59	39.60	31	20.81
Average	**297**	**18.12**	**689**	**42.04**	**483**	**29.47**	**170**	**10.37**

Regarding optimizing learning through online methods, approximately 76.51% of the respondents agreed or strongly agreed, while 23.49% disagreed or strongly disagreed. Overall, these results demonstrate that participants consider online learning beneficial for optimizing their educational experience. According to Table 4, a minority of respondents (24.83%) agreed that online learning hindered teachers' ability to monitor students, while the majority (75.17%) disagreed. This suggests that most participants believed online education does not impede teachers' ability to oversee student progress.

Regarding student motivation, a significant proportion of respondents (71.14%) agreed that online learning enhanced students' drive to learn, with only 28.96% dissenting. This indicates that most participants viewed online learning favorably because of its potential to boost student motivation. This finding is consistent with Alea et al. study on the impact of online learning on student motivation during the COVID-19 pandemic, which demonstrated that well-designed online learning environments can positively influence students' motivation to learn [35]. Concerning the impact on social skills, a minority of respondents (39.59%) believed online learning diminished students' social abilities, while the majority (60.41%) disagreed. This implies that most participants perceived online learning as beneficial rather than detrimental for developing students' social competencies.

4) Students' Perception of Blended Learning Based on Learning Management System (LMS) in Physical Education, Sports, and Health Subjects in Review of E-Learning Usage Satisfaction Indicators: Furthermore, we describe students' perceptions of blended learning based on the learning management system (LMS) in physical education, sports, and health subjects in terms of indicators of satisfaction with the use of e-learning (see Table 5).

TABLE V
STUDENT RESPONSES TO STUDENT PERCEPTIONS OF BLENDED LEARNING BASED ON LEARNING MANAGEMENT SYSTEM (LMS) IN PHYSICAL EDUCATION, SPORTS, AND HEALTH SUBJECTS IN REVIEW OF E-LEARNING USAGE SATISFACTION INDICATORS

Statement	Strongly agreed		Agreed		Disagreed		Strongly disagreed	
	F	%	F	%		F	%	F
The lack of effectiveness of online learning is due to network problems.	6	4.03	31	20.81	82	55.03	30	20.13
I really enjoy doing assignments given by teachers through online learning.	48	32.21	67	44.97	28	18.79	6	4.03
Online learning is complex for students who do not understand technology.	7	4.70	38	25.50	73	48.99	31	20.81
Students can find more information through online learning.	50	33.56	74	49.66	21	14.09	4	2.68
Average	**111**	**18.62**	**210**	**35.23**	**204**	**34.23**	**71**	**11.91**

Table 5 shows that only about 24.84% of respondents agree and strongly agree that the effectiveness of online learning is reduced if there are network problems, but about 75.16% disagree and strongly disagree with this statement. Thus, it

can be concluded that respondents generally disagree that the effectiveness of online learning is reduced if there are network constraints. Table 5 also explains that about 77.18% of respondents strongly agreed and agreed with the statement that students are very happy to do the assignments given by teachers through online learning, and only about 12.82% disagreed and strongly disagreed. This means that respondents generally agree that students are very happy to do the tasks given by teachers through online learning.

Furthermore, when viewed in terms of online learning, making it difficult for students who do not understand technology, around 30.2% strongly agreed and agreed with the statement that online learning makes it difficult for students who do not understand technology. Approximately 69.8% of respondents disagreed and strongly disagreed with the statement that online learning makes it difficult for students who do not understand technology. From this information, it was found that most respondents agreed that online learning does not make it difficult for students who lack an understanding of technology.

5) Recapitulation of Respondents' Answers about Students' Perceptions *of Blended Learning Based on Learning Management System (LMS) in Physical Education, Sports, and Health Subjects in Review of All Indicators:* The research results summarize respondents' (students') responses to their perceptions of blended learning based on a learning management system (LMS) in physical education, sports, and health subjects. For further details, see Table 6.

TABLE VI
STUDENT RESPONSES TO STUDENT PERCEPTIONS OF BLENDED LEARNING BASED ON LEARNING MANAGEMENT SYSTEM (LMS) IN PHYSICAL EDUCATION, SPORTS AND HEALTH SUBJECTS IN REVIEW OF ALL INDICATORS

Statement	Strongly agreed		Agreed		Disagreed		Strongly disagreed	
	F	%	F	%		F	%	F
E-Learning Knowledge	74	24.83	172	57.72	45	15.10	7	2.35
E-learning Accessibility	219	18.37	513	43.04	341	28.61	119	9.98
E-learning Usability	297	18.12	689	42.04	483	29.47	170	10.37
E-learning Usage Satisfaction	111	18.62	210	35.23	204	34.23	71	11.91
Average	**701**	**19.99**	**1584**	**44.51**	**1073**	**26.85**	**367**	**8.65**

The respondents' statements were condensed into four key indicators: (1) E-Learning Knowledge, (2) E-learning Accessibility, (3) E-learning Usability, and (4) E-learning Usage Satisfaction. According to Table 6, a significant majority (82.55%) of the participants either agreed or strongly agreed that knowledge of e-learning plays a crucial role in supporting blended learning. Regarding e-learning accessibility, 61.41% of the respondents agreed or strongly agreed regarding its importance in facilitating blended learning. The study also revealed that 60.16% of the participants agreed or strongly agreed that e-learning's usefulness is essential in contemporary times. Finally, 53.83% of respondents concurred or strongly concurred that satisfaction with e-learning usage serves as a vital indicator in the context of blended learning.

IV. CONCLUSION

The study demonstrates that students perceive blended learning through Learning Management Systems (LMS) in physical education, sports, and health courses as beneficial. Key findings show that e-learning improves the distribution of materials, enhances information delivery, and offers flexibility in study time and location. Most participants find online learning systems reliable, easy to use, and practical, even in poor network connectivity. Despite these positive outcomes, some challenges remain. A significant minority of students feel that online learning hinders teacher feedback and faces difficulties related to technical skills. Additionally, while student motivation and social skills are primarily supported by online learning, these areas warrant continuous attention to ensure balanced development. In conclusion, the study suggests that blended learning has the potential to optimize educational experiences through greater flexibility and accessibility. Still, institutions must address issues related to teacher-student interaction, technical challenges, and student engagement to realize their benefits entirely.

Future research could investigate how using Learning Management Systems (LMS) in blended learning environments affects students' academic performance over a more extended period, particularly in physical education, sports, and health courses. This could include examining whether e-learning knowledge, accessibility, and usability translate into improved learning outcomes, retention rates, and skill development. While most students did not perceive network or technology access as significant obstacles, further research could explore how blended learning can be optimized for students from low-resource environments or those with limited digital literacy. Studies could examine the effectiveness of various low-cost or offline solutions and strategies for improving access to technology and internet connectivity in underserved regions. Future studies could focus on the social and emotional aspects of learning in blended environments, specifically how these platforms impact students' development of social skills, emotional intelligence, and interpersonal relationships. Research in this area could provide insights into how blended learning can support academic and socio-emotional growth, particularly in group-based or collaborative activities within physical education and sports courses.

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