

## Comparative Analysis of Malaysian and Indonesian Sports Science Students' Perceptions of Online Learning

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**Abstract:** Online learning has become an alternative strategy for teaching and learning at universities in almost all countries. Implementing this approach poses significant challenges, particularly for sports science students who engage predominantly in face-to-face activities centered on active learning due to the nature of their field of study. This research aimed to describe student's perception of online learning at the university. The quantitative method was applied in this study by employing an online survey for sports science undergraduates from both universities. One hundred twenty ( $n=120$ ) sports sciences students from Universiti Teknologi MARA (UiTM) and Universitas Negeri Jakarta (UNJ) answered an online survey using a Google form written in Indonesian and Malay languages. It contained the following topics: (1) students' preparation for online learning; (2) students' experience with online learning; and (3), students' satisfaction with online learning. The scale was found to have construct validity and good internal consistency (Cronbach's alpha of 0.96). Participants were asked to rate each statement on a four-point Likert Scale, ranging from 1 (strongly disagree) to 4 (strongly agree). The results indicated no differences in the students' perception of online learning between Malaysian and Indonesian sports science university students. Some recommendations to increase the quality of learning in post-pandemic situations are presented in the discussion section.

**Keywords:** Inter-cultural, Online learning, Readiness, University students

### 1. Introduction

Due to the phenomenal growth in online learning in recent years, stakeholders in education are required to increase greater accountability and effectiveness in learning activities. Studies have demonstrated the potential benefits of technology in universities as online education is a more flexible, accessible, and personalised education method than in-person lesson instruction (Siemens *et al.*, 2015; Aparicio *et al.*, 2016). Still, its full realisation could be improved by various challenges faced by stakeholders, including students, lecturers, and education staff, in adopting and effectively utilising e-learning. This is especially true in developing countries. The research findings of Barclay *et al.* (2018) found that the determinants of success affecting students' perceptions of using and accessing online

learning include economic conditions, supportive cultural practices, computer access, and availability of online-based systems or environments. Several studies also reported that essential considerations to be noted are countries from developing nations, whereby the economic disparity is relatively high and accessibility to information technologies such as computers or internet access is very much limited (Barclay & Duggan, 2008; Qureshi *et al.*, 2012). Integrating various cultural dimensions depending on the countries' development progress has greatly impacted decision-making (Hofstede, 1980).

The Internet use and access between Malaysian and Indonesian students are undoubtedly different in terms of reaching across borders and geographic areas. Only three Southeast Asian countries have internet penetration of more than 80%, namely Singapore, Brunei Darussalam, and Malaysia. In contrast, Indonesia, the most populous country in Southeast Asia, only has 56% penetration. This figure translates to only 150 million out of 268 million Indonesians having access to the internet, causing gaps in accessing or using internet devices and applications. Findings from a prior study by Herrodou (2018) also compared the perceptions of students who have used mixed learning methods (face-to-face and online) to those who used solely online learning methods. It was found that integrating both face-to-face and online learning improves student learning, engagement, and performance, as well as increases potential in pedagogy (teaching, learning, assessment) compared to students who only use online learning methods (Herrodou, 2018).

The National Student Engagement Survey (NSSE) is divided into three broad categories: (a) student academic results, focusing on grades and exam scores; (b) students' attitudes in learning; and (c) overall student satisfaction in online learning, reported higher levels of involvement in academic challenge levels, active and collaborative learning, and enriching education. The NSSE indicator selected is suitable for measuring engagement in online learning. Online learning environments are ideal places to promote greater student engagement in mental capacities (Robinson & Hulliner, 2018).

When it comes to online learning among sports science students especially during a major disruption like COVID-19, two main challenges arose. Firstly, there is a lack of opportunities that support the online learning environment to collect data on sport science student 'learning behaviour' in analysing learning. Secondly, there are challenges in conducting online-based assessments. Hence, both challenges have implications for the effectiveness of online learning in higher education settings for sports science students (Watson *et al.*, 2016). A prior study has reported that sports science students in Indonesian higher education institutions were not excited about online learning (Syahrudin *et al.*, 2021) and this could be due to the difficulties in managing and operating online sports science lectures included limited environmental context and educational content that may decrease the effectiveness of delivering the teaching and learning process during the COVID-19 pandemic. Besides students having issues accessing online classes, academicians/ lecturers nationwide may need more experience and expertise in developing or using the rightful online content. Most of the time, lectures only have the choice of trial-and-error methods. There is plenty of room for improvement and innovation in teaching and learning to be explored, especially when dealing with unprecedented situations like the COVID-19 pandemic. With that in mind, the current causal-comparative study aimed to explore how Malaysian and Indonesian sports science students manage their online learning, including three aspects below: (1) the student's preparation for online learning, (2) the student's experience with online learning and (3) the student's post-experience about online learning including student's satisfaction of online learning.

## **2. Methodology**

### **2.1 Study design**

This cross-sectional online-based survey was conducted between February and December 2023 using a self-administered online questionnaire to investigate the Indonesian and Malaysian varsity sports science students' perception of online learning. The questionnaire was distributed via a Google form link to all sports science students in the Faculty of Sport Science, Universitas Negeri Jakarta (UNJ), Indonesia and the Faculty of Sports Science and Recreation, Universiti Teknologi MARA (UiTM), Malaysia. The students were strongly encouraged to complete the questionnaire, but their involvement remained voluntary, and the survey included a statement for participants to consent before the survey commenced.

## **2.2 Participant selection**

Participants were selected based on purposive sampling. All sports science students enrolled in UNJ and UiTM for 2022-2023 were eligible to participate in this study. A total of 60 students from UNJ and 60 students from UiTM completed the survey. Responses from all 120 participants were included in the final analysis of this study.

## **2.3 Instrument**

The questionnaire used in this study was developed based on an extensive literature review and previously validated scales. The questionnaire consisted of 34 evaluative statements that assessed students' readiness (students' preparation for online learning; 13 items), implementation (students' experience with online learning; 15 items), and satisfaction (students' satisfaction with online learning; six items). Participants were asked to rate each statement on a 4-point Likert Scale that ranged from 1 (strongly disagree) to 4 (strongly agree). The scores for each domain and the 34-item total score were calculated and used for further analysis. The questionnaire was found to have good internal consistency (Cronbach's alpha of 0.96) and construct validity.

## **2.4 Data Analysis**

Data was analysed using IBM Statistical Package for the Social Sciences (SPSS version Statistics for Windows, Version 29.0). Descriptive statistics such as frequency, percentage, mean and standard deviation were used to analyse the results of each domain. The mean score for each domain and the 34-item total score were compared between the two high-learning institutions using an independent t-test. The significance level was set at 0.05.

# **3. Results**

## **3.1 Descriptive Data**

A total of 120 people, 60 from Malaysia and 60 from Indonesia, voluntarily participated in the survey. Most participants were in their third year of study (59.2%,  $n = 71$ ). The lowest responses came from individuals at education levels 2 and 4, with only 15 responders (12.5%) in each category. The results also showed 76 male participants (63.3%) and 44 female participants (36.7%).

The mean scores and standard deviations of Indonesian students' readiness ( $M = 40.70$ ) and implementation ( $M = 46.55$ ) were substantially higher than student satisfaction ( $M = 18.07$ ), and these in the results for Malaysian student participants in terms of student readiness ( $M = 41.05$ ), implementation ( $M = 46.05$ ), and satisfaction ( $M = 17.93$ ) (Table 1). The implementation had the highest average score and the biggest range of values, as seen by the standard deviation and variance indicators. The readiness of Malaysian students similarly exhibited significant heterogeneity but with a lower average compared to the implementation variable. Finally, the measure of student satisfaction demonstrates the lowest average score and the least variations compared to the other two variables.

The frequency and percentage of response for each item are presented in Table 2. Overall, the mean score for each of the three domains and the 34-item total score were comparable between UNJ and UiTM ( $p < 0.05$ ). The present study found that the majority of sports science students who took part in the survey agreed that they were prepared (mean score UNJ 40.7/52; mean score UiTM 41.1/52), were able to experience (mean score UNJ 46.6/60; mean score UiTM 46.1/60) and were satisfied with their online learning (mean score UNJ 18.1/24; mean score UiTM 17.9/24). Although most of the students faced difficulties with Wi-Fi networks (87.5%,  $n = 105$ ) and information technology (90.8%,  $n = 109$ ), they remained actively involved (90.8%,  $n = 109$ ) and motivated to do their best during the online sessions (92.5%;  $n = 111$ ).

Many students agreed that they found the online learning material engaging (92.5%;  $n = 111$ ) and learned a lot in their online classes (80.9%,  $n = 97$ ). Despite the generally positive perceptions of online learning among sports science students from both high learning institutions in Indonesia and Malaysia, more than a quarter of students (31.7%;  $n = 38$ ) preferred face-to-face learning over online

learning. Given that skill acquisition is part of the learning outcomes for sports science students, it is unsurprising that many reported difficulties in performing exercises (92.5%,  $n = 111$ ) and felt that their competence in specific skills was reduced (82.5%,  $n = 99$ ) and did not achieve (55.8%,  $n = 67$ ) despite feeling that they have done well for their online classes (94.2%,  $n = 113$ ). Notably, 40% ( $n = 48$ ) of students disagreed that online learning is more effective and efficient than face-to-face learning. Still, the majority of the students reported that they understood (87.5%,  $n = 105$ ) and were satisfied with their lecturers (89.2%,  $n = 107$ ) and the implementation of the online learning system (96.6%,  $n = 116$ ).

**Table 1.**

*Mean ( $\pm$  SD) of students' readiness, implementation and students' satisfaction scores in Indonesian and Malaysian participants*

Domain	Indonesia	Malaysia
Students' readiness	40.70 $\pm$ 4.18	41.05 $\pm$ 4.58
Implementation	46.55 $\pm$ 4.46	46.05 $\pm$ 5.78
Students' satisfaction	18.07 $\pm$ 2.34	17.93 $\pm$ 2.95

**Table 2.**

*Students' online learning perception scores*

Statements	n (%)			
	Strongly disagree	Disagree	Agree	Strongly agree
<b>Domain 1: Students' readiness</b>				
1. I have support for online learning facilities and infrastructure.	0	1 (0.8)	77 (64.2)	42 (35.0)
2. I am having trouble with the Wi-Fi network (signal difficulty).	1 (0.8)	12 (10)	86 (71.7)	19 (15.8)
3. I have limitations in Information Technology.	2 (1.7)	8 (6.7)	88 (73.3)	21 (17.5)
4. I live in a neighbourhood with good internet access.	1 (0.8)	14 (11.7)	70 (58.3)	35 (29.2)
5. I able to operate technology equipment (computer / laptop / Tab / Smartphone).	1 (0.8)	12 (10)	78 (65)	29 (24.2)
6. I am motivated to do my best in this online class	0	9 (7.5)	73 (60.8)	38 (31.7)
7. I felt the lecturer is knowledgeable about the subject	0	4 (3.3)	61 (50.8)	55 (45.8)
8. I felt comfortable communicating with other students in the on line class	3 (2.5)	11 (9.2)	66 (55)	40 (33.3)
9. I am actively involved in my online class	0	11 (9.2)	88 (73.3)	21 (17.5)
10. I can work collaboratively with other students in my online class	1 (0.8)	16 (13.3)	80 (66.7)	23 (19.2)
11. I can manage my time effectively on online course	0	11 (9.2)	83 (69.2)	26 (21.7)
12. I feel that I am learning a lot in my online class	0	23 (19.2)	74 (61.7)	23 (19.2)
13. I find the course material engaging in my online class	1 (0.8)	8 (6.7)	89 (74.2)	22 (18.3)
<b>Domain 2: Implementation</b>				
1. I have easy access to online learning.	0	6 (5)	89 (74.2)	25 (20.8)
2. My lecturer is competent in providing material online.	0	2 (1.7)	78 (65)	40 (33.3)
3. My lecturers use learning resources that can be accessed via the internet.	0	1 (0.8)	83 (69.2)	26 (30)
4. Online learning opens opportunities to use media digital learning resources.	0	3 (2.5)	86 (71.7)	31 (25.8)

Statements	n (%)			
	Strongly disagree	Disagree	Agree	Strongly agree
5. Online learning makes it easy for me to share learning resources with friends.	0	5 (4.2)	84 (70)	31 (25.8)
6. Online learning increases the interaction between lecturers and students.	0	29 (24.2)	69 (57.5)	21 (17.5)
7. Online learning has made me more courageous in expressing my opinion.	2 (1.7)	16 (13.3)	74 (61.7)	27 (22.5)
8. I prefer to take online learning than face-to-face learning.	8 (6.7)	30 (25)	51 (42.5)	28 (23.3)
9. Online learning reduces my competence in certain skills.	3 (2.5)	16 (13.3)	83 (69.2)	16 (13.3)
10. I have difficulty exercising online.	0	9 (7.5)	84 (70)	27 (22.5)
11. My competence was not achieved during online learning.	3 (2.5)	38 (31.7)	67 (55.8)	0
12. College friends help each other in online learning.	0	7 (5.8)	81 (67.5)	32 (26.7)
13. My lecturer is very cooperative in implementing online learning.	1 (0.8)	6 (5)	88 (73.3)	25 (20.8)
14. My lecturers sometimes carry out Blended Learning (a mixture of online and face-to-face).	1 (0.8)	6 (5)	86 (71.7)	27 (22.5)
15. I did a good job given by my lecturer.	1 (0.8)	6 (5)	92 (76.7)	21 (17.5)
<b>Domain 3: Satisfaction</b>				
1. Online learning is more effective and efficient than face-to-face learning.	6 (5)	42 (35)	57 (47.5)	15 (12.5)
2. I understand the learning material and lecture structure that is delivered online.	1 (0.8)	14 (11.7)	90 (75)	15 (12.5)
3. I am satisfied with the competence of the lecturers and the way they teach during online lectures.	1 (0.8)	12 (10)	90 (75)	17 (14.2)
4. I feel that the assignments given in online learning are in accordance with the learning outcomes of the course.	0	6(5)	94 (78.3)	20 (16.7)
5. I am satisfied with the implementation of the UTS and UAS through online learning.	3 (2.5)	1 (0.8)	88 (73.3)	28 (23.3)
6. I feel satisfied with the online learning system.	4 (3.3)	8 (6.7)	90 (75)	18 (15)

#### 4. Discussion

Online education is a more flexible, accessible, and personalised education method than in-person lesson instruction. However, it also requires high self-discipline and may not provide the essential face-to-face connection between classmates, students and lecturers. Online learning is the development of digital learning through a combination of learning activities, digital devices, and global networks to establish educational goals (Siemens *et al.*, 2015). Online learning varies greatly, namely by combining many technologies, pedagogy, and local cultural values (Aparicio *et al.*, 2016). On the other hand, some experts distinguish online learning types by describing them as "full" online learning (Oblinger & Oblinger, 2005). Other experts state that online learning is reviewed from technological media or context in education (Lowenthal *et al.*, 2009). Addressing the situation in which the world has to deal with the COVID-19 pandemic, a study conducted by Adnan (2020), which measures students' perception of online learning in Pakistan, discovered that online learning cannot deliver the desired learning outcomes and results in underdeveloped countries such as Pakistan, where most students cannot access the Internet due to technical and financial problems. Lack of face-to-face interaction with instructors, response time, and absence of traditional classroom socialisation are other issues highlighted by college students in Pakistan (Adnan, 2020). Hence, technical and financial problems could be the main obstacles for students in practising online learning.

Another study conducted by Bao (2020) during the COVID-19 pandemic showed that five factors impacted online education, namely: (a) the high linkage between online instructional design and student learning, (b) effective delivery of online instruction, (c) adequate support provided by faculty and teaching guidance to students; (d) high-quality participation to improve the breadth and depth of student learning, as well as (e) emergency plans to deal with unexpected incidents of online learning platforms (Bao, 2020). Meanwhile, Wei and Chou (2020) conducted a study regarding students' ability to use computers and the Internet. The study found that students' self-efficacy and motivation to use computers and the internet can positively impact their online discussion scores and satisfaction towards the online course. In addition, self-efficacy in using computers or the Internet for online learning indirectly affects the perception of online learning, the score of online discussion results, and satisfaction with online learning and attending courses (Wei & Chou, 2020). Likewise, students' attitudes towards web and web-based instruction may affect the future use of teaching materials provided on the web. They may ultimately influence how web-based resources are educationally beneficial for students in an online learning environment (Wei & Chou, 2020). As students' attitudes towards web and web-based instruction can influence their future use of online teaching materials and the educational benefits they derive from web-based resources, these studies underline the importance of not only the design and delivery of online education but also the technological preparedness and attitudes of students.

Implementing online learning in universities or higher education institutions involves integrating technology and pedagogy to deliver educational content and facilitate learning experiences through digital platforms. The critical steps and considerations in implementing online learning include infrastructure and resources. For instance, universities must have the necessary technological infrastructure and resources to support online learning. This includes a reliable internet connection, learning management systems (LMS), video conferencing tools, content creation software, and technical support for faculty and students. Although most of the students in the present reported difficulties with Wi-Fi networks and information technology, they remained actively involved and were motivated as they found that the online learning material engaging and hence, perceived that they learned a lot in their online classes. Overall, the present study showed that the student's perception of online learning was comparable between UNJ and UiTM. The present study found that the majority of sports science students who took part in the survey agreed that they were prepared, were able to experience and were satisfied with their online learning in contrast to the lack of excitement in online learning among Indonesian sports science students during the COVID-19 pandemic as reported by a prior study (Syahrudin et al., 2021). Nevertheless, it is essential to note that more than 25% of students surveyed preferred face-to-face learning over online learning, and 40% of the students disagreed that online learning is more effective and efficient than face-to-face learning. Some of the sport science-specific challenges that were faced by the students during online learning included difficulties in performing exercises, which resulted in them feeling that their competence in specific skills was reduced despite reporting that they understood, had done well in their online classes and were satisfied with the implementation of the online learning system.

Online learning requires effective communication and collaboration among faculty, students, and peers (Ferrer *et al.*, 2020). Universities should provide real-time and asynchronous communication platforms such as discussion forums, chat tools, and video conferencing to facilitate participant interaction and collaboration. Furthermore, the faculty members should get hands-on training to support the effective design and delivery of online courses. This may involve workshops or professional development programs on instructional design, online teaching strategies, digital tools, and effective online communication and engagement. Courses must be designed with an approach that is friendly for online learning, with course outline enhancement such as instructional designed principles, create engaging multimedia content, and design interactive activities and assessments.

#### **4. Conclusion**

Online learning has emerged as a transformative educational approach, integrating digital tools, pedagogical strategies, and global connectivity to achieve academic objectives. This study compares the perceptions of Malaysian and Indonesian sports science students regarding online learning and reveals notable similarities in their experiences. Despite differences in institutional contexts and cultural

influences, students from both universities encountered comparable challenges, including difficulties in engagement, technological limitations, and concerns regarding the effectiveness of remote instruction.

This study is also crucial in the context of the current post-pandemic situation, which dramatically accelerated the way we adopt digital tools and platforms in the classroom. This widespread adoption provides an essential argument for understanding how online learning is delivered in the cross-cultural context and how it potentially transforms student's learning education.

Given these shared perceptions, fostering greater collaboration between the two institutions presents an opportunity to develop targeted strategies to enhance online learning experiences in the future. Joint initiatives like curriculum co-design, faculty training programmes, and cross-border student engagement activities could help address common challenges while leveraging best practices from both educational environments.

Further research into pedagogical innovations and technological advancements tailored to sports science education could also contribute to more effective online learning models. Ultimately, institutions can enhance their online education frameworks by recognising the similarities in student experiences and striving for universal solutions to ensure a more engaging, effective, and inclusive learning environment. Bolstering these collaborative efforts can lead to improved learning outcomes and a more resilient educational system adaptable to future digital transformations.

## **5. Recommendations**

While the previous study concluded that there were no significant differences in students' perceptions of online learning between Malaysian and Indonesian sports science students, future research could explore a more granular level of analysis. The new direction could focus on identifying specific challenges and advantages faced by students within these perceptions, especially those related to different social-cultural contexts. Next is observing how these perceptions evolve over time with the changing educational landscape post-pandemic in two countries and expanding the scope of study to include other students from different disciplines to see if the trend holds across various fields of study. Next, further study could also investigate the impact of specific technological tools and platforms on student perceptions. Lastly, we recommended conducting in-depth interviews and focus group discussions to gain qualitative insights about students' perceptions. Explore personal experiences, challenges, and suggestions for improvement.

## **6. Co-Author Contribution**

The authors affirmed that there is no conflict of interest in this article. The first, third, and seventh authors executed the comprehensive writing plan, contributed to the findings and discussion, and secured the research grant. The other authors performed data collection and application testing, analysed the findings, and interpreted the results. The first and seventh authors served as the corresponding authors. All the authors revised and approved the manuscript.

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