JoSSE Vol : 1, No : 1
February 2026, Volume 1 No. 1
e-ISSN : 3124–6796
Doi : doi.org/sampel-number-xxxx

Analysis of Physics Education Students' Perceptions at UNM toward a Website-Based Physics Learning Assessment Teaching Module (Ahmaddahlan.NET)

Ahmad Dahlan
Universitas Negeri Makassar
ahmaddahlan@unm.ac.id

Ahmad Yani
Universitas Negeri Makassar
ahmad.yani@unm.ac.id

Laode Manarfah *
Universitas Negeri Makassar
laode.manarfah@unm.ac.id

*correspondence author

Abstract – The integration of web-based learning media plays an important role in supporting effective learning and assessment in higher education. This study aimed to analyze Physics Education students' perceptions of a website-based physics learning assessment teaching module implemented through Ahmaddahlan.NET at Universitas Negeri Makassar. A quantitative ex post facto design was employed, involving 120 students selected through total sampling. Data were collected using a Likert-scale questionnaire covering ease of use, media appearance and quality, quality of learning materials, and clarity of presentation and usefulness. Data were analyzed using descriptive statistics with the mode as the main measure.

The results indicate that students' perceptions fall within the very good category across all aspects, with the overall mode at the highest scale score. Ease of use showed the strongest dominant response, followed by material quality and clarity of presentation. These findings suggest that the module is technically usable and pedagogically sound, with potential for further visual enhancement. The study concludes that the website-based module is a viable and innovative medium for physics learning assessment in higher education.

Keywords: student perception, website-based module, physics learning assessment

Declaration of conflicts of interests: No potential conflict of interest was reported by the authors.

Introduction

The development of information and communication technology has brought significant changes to various aspects of education, including learning and assessment processes. The integration of web-based technology in learning provides opportunities to enhance the effectiveness of content delivery, access flexibility, and students' learning independence (Entriza and Puspitasari, 2025). In the context of higher education, particularly in Physics Education programs, the use of website-based teaching modules represents an innovation that can support conceptual mastery, critical thinking skills, and students' understanding of physics learning assessment processes.

Physics learning assessment is an essential component of the educational process because it functions to measure students' competency achievement, evaluate learning effectiveness, and serve as a basis for academic decision-making (Hibbard, 2011). However, in practice, students often face difficulties in comprehensively understanding assessment concepts, especially those related to instrument development, analysis of assessment data, and the implementation of

e-ISSN : 3124–6796
Doi : doi.org/sampel-number-xxxx

authentic assessment in physics learning. Therefore, the development of learning media that can present content in a systematic, interactive, and easily accessible manner is required.

The utilization of a website-based teaching module through the Ahmaddahlan.NET platform is one innovative effort to provide digital learning resources that can be accessed flexibly by students. The website is designed to present physics learning assessment materials in a structured manner, complemented by examples of instruments, learning evaluations, and other supporting features that enable students to learn independently. The presence of a website-based module is expected to enhance students' conceptual understanding while aligning with the demands of twenty-first-century learning, which emphasizes digital literacy and technology-based learning (Khairunnisa, R.A., Kaharuddin, A., and Usman, 2023).

Although website-based teaching modules offer various advantages, their effectiveness is strongly influenced by students' perceptions as the primary users. Students' perceptions reflect the level of acceptance, ease of use, usefulness, and quality of the materials presented in the learning module. Analyzing students' perceptions is therefore important to determine the extent to which the website-based teaching module meets learning needs and to serve as a basis for future module development and refinement.

Based on this rationale, this study aims to analyze the perceptions of Physics Education students at Universitas Negeri Makassar regarding the use of a website-based physics learning assessment teaching module on Ahmaddahlan.NET. The results of this study are expected to provide an overview of students' acceptance of digital learning media and to serve as a reference for the development of technology-based learning innovations in higher education environments.

Methods

This study employed a quantitative approach with an ex post facto research design aimed at examining students' perceptions of the use of a website-based physics learning assessment teaching module after the learning process had taken place. Ex post facto research was conducted without providing any treatment or manipulation of the research variables, but rather by analyzing conditions that had occurred naturally. The focus of this study was to identify how students perceive the use of a website-based module as a learning medium for physics assessment.

The research population consisted of all students of the Physics Education Study Program at Universitas Negeri Makassar who had taken the Physics Learning Assessment course using the website-based Ahmaddahlan.NET module. The research sample comprised 120 students, determined using a total sampling technique, in which all students who met the criteria were included as research respondents. The research instrument was a student perception

questionnaire developed using a Likert scale with several indicators, including ease of use of the module, media appearance, material quality, clarity of presentation, and the usefulness of the module in helping students understand concepts of physics learning assessment.

This study was conducted after students had completed the learning process in which the website-based Ahmaddahlan.NET teaching module was utilized as part of regular learning activities. After the learning process was completed, the researchers distributed the questionnaire to collect data on students' perceptions of the use of the module. The collected data were then analyzed using descriptive statistical techniques through the calculation of mean scores and percentages to determine the category of students' perception levels toward the website-based physics learning assessment teaching module.

Result and Discussion

The website-based Physics Learning Assessment e-Module on Ahmaddahlan.NET demonstrates an innovation in the provision of digital learning resources that are adaptive to the development of twenty-first-century learning technology. One of the main advantages of this e-module lies in its modern and interactive User Interface (UI) design. The interface is designed with a simple yet attractive visual concept, making it easier for students to navigate the learning materials. Each module is represented by distinct visual icons that function not only as aesthetic elements but also as markers for material categorization. These visual representations help students recognize and explore learning topics more quickly and intuitively.

The use of icons to represent each module provides a more exploratory and user-friendly learning experience. This visual approach has proven to increase students' interest in accessing learning materials, as students tend to be more attracted to digital displays that are communicative and interactive compared to conventional text-based modules. In addition, the systematic navigation structure allows students to access materials flexibly according to their learning needs. This is in line with the principles of independent learning, which emphasize students' ability to actively manage their own learning processes.

From a pedagogical perspective, this e-module does not only function as a medium for delivering content but also serves as a means to enhance students' digital literacy in understanding physics learning assessment concepts. The modern UI design supports student engagement in the learning process through the integration of text, illustrations, and a systematic structure of material presentation. With a responsive display and easy-to-use navigation, students can focus more on understanding assessment concepts such as instrument development, evaluation techniques, and analysis of learning outcomes. Thus, the website-based Ahmaddahlan.NET e-module not only improves the quality of content presentation but also has the potential to enhance the overall effectiveness of physics learning assessment.

e-ISSN : 3124–6796
Doi : doi.org/sampel-number-xxxx

Based on the results of descriptive statistical analysis of questionnaire data collected from 34 students, it was found that the mode of students' perceptions toward the website-based physics learning assessment teaching module on Ahmaddahlan.NET was at a score of 5 out of a maximum scale of 5. This result indicates that the most frequently occurring score falls within the very good category, reflecting a highly positive tendency in students' perceptions of the use of the website-based teaching module.

To provide a more systematic overview, the results of the analysis of students' perceptions were grouped into four main aspects, namely ease of use, media appearance and quality, quality of learning materials, and clarity of presentation and usefulness of the module. Detailed results of the analysis based on modal values, dominant response frequencies, and perception categories are presented in Table 1.

Table 1. Students' Perceptions in Each Aspect

No	Aspect	Mode	Mode Frequency (n)	Percentage (%)	Category
1	Ease of Use	5	26	76,47	Very Good
2	Media Appearance and Quality	5	23	67,65	Very Good
3	Quality of Learning Materials	5	25	73,53	Very Good
4	Clarity of Material Presentation	5	27	79,41	Very Good
	Overall Mode	**5**	**Dominant**	**Dominant**	**Very Good**

The research results indicate that the aspect with the highest dominant response is ease of use, with the mode at a score of 5 and the highest frequency of occurrence compared to the other aspects. This finding indicates that most students perceive the module as very easy to access, having clear navigation, and supporting independent learning. The aspects of quality of learning materials and clarity of material presentation also show a mode of 5 with high response frequencies, indicating that the materials are considered relevant, systematic, and capable of helping students understand physics learning assessment concepts more comprehensively.

Meanwhile, the aspect of media appearance and quality also has a mode at a score of 5, although its frequency of occurrence is relatively lower than that of the other aspects. This condition indicates that, in general, students assess the media appearance and quality as very good; however, there are still some students who provide lower ratings. This suggests that further

e-ISSN : 3124–6796
Doi : doi.org/sampel-number-xxxx

development in visual design, layout, and optimization of graphic elements remains possible to enhance students' learning experiences.

Mode-based analysis and response frequency show that students' answers tend to be concentrated at the highest score, leading to the conclusion that students' perceptions are relatively homogeneous and consistent across all measured aspects. In other words, most respondents share similar views regarding the quality of the website-based physics learning assessment teaching module, so the findings of this study can be considered representative of students' learning experiences in general.

The findings of this study indicate that students' perceptions of the website-based teaching module fall within the very good category across all measured aspects. The dominance of a score of 5 in the ease-of-use aspect indicates that the module has a very high level of usability. In the context of technology-based learning, ease of use is an important factor influencing users' acceptance of a digital learning system (Zardari et al., 2021). This is in line with the Technology Acceptance Model (TAM), which states that perceived ease of use influences users' acceptance and use of technology (Alyoussef, 2021).

Furthermore, the dominance of the highest score in the aspects of learning material quality and clarity of material presentation indicates that the module is not only technically strong but also pedagogically sound. Systematic materials that are aligned with learning outcomes and presented in a well-structured manner enable students to build conceptual understanding gradually (Namestovski and Kővári, 2022). This finding supports the view that the effectiveness of digital learning media is determined not only by the technology used but also by the quality of the underlying instructional design (Topping et al., 2022).

Although the media appearance and quality aspect is categorized as very good, its relatively lower highest response frequency compared to other aspects indicates that visual and aesthetic elements still play an important role in enhancing the learning experience. In web-based learning, attractive and responsive interface design can increase student engagement and encourage learning motivation (Peramunugamage et al., 2024). Therefore, further development in visual aspects and interactivity can strengthen the overall appeal of the module.

The consistency of students' perceptions, as reflected in the dominance of the highest scores across all aspects, indicates that the module is accepted evenly by students with diverse ability backgrounds. This shows that the website-based module has the potential to be implemented broadly in technology-based learning in higher education (West and Malatji, 2021).

e-ISSN : 3124–6796
Doi : doi.org/sampel-number-xxxx

Overall, the results of this study indicate that the integration of website-based teaching modules can serve as an innovative alternative in learning. This finding aligns with the characteristics of twenty-first-century learning, which emphasize digital literacy, independent learning, and the pedagogical use of technology (Jang et al., 2021).

Conclusion

This study aimed to analyze students' perceptions of a website-based physics learning assessment teaching module on Ahmaddahlan.NET. The results of descriptive statistical analysis based on the mode indicate that students' perceptions fall within the very good category, with the most frequently occurring scores at the highest level of the rating scale. All measured aspects, namely ease of use, media appearance and quality, quality of learning materials, as well as clarity of presentation and usefulness of the module, demonstrate positive and relatively consistent acceptance.

These findings confirm that the website-based teaching module is not only technically feasible but also pedagogically strong. Systematically structured materials aligned with learning outcomes, along with clear and easy-to-understand presentation, contribute to students' ease in understanding physics learning assessment concepts. The dominance of the highest scores in the ease-of-use aspect indicates that the interface design and navigation of the module support effective learning experiences and independent learning. Meanwhile, although the media appearance and quality aspect is categorized as very good, its relatively lower highest response frequency compared to other aspects suggests that there is still room for development in visual elements and module interactivity.

Although the study results show highly positive responses, this research has limitations because it only measured students' perceptions without directly examining the impact of module use on learning outcomes. In addition, the number of respondents was limited to a single group of students, so the generalization of the findings should be approached with caution. Therefore, future studies are recommended to examine the effectiveness of the module through experimental or quasi-experimental designs and to involve larger samples in order to obtain more comprehensive findings.

Overall, this study provides empirical evidence that the integration of a website-based physics learning assessment teaching module has the potential to serve as an innovative alternative in supporting physics assessment learning in technology-based higher education.

References

Alyoussef, I. (2021). E-Learning Acceptance: The Role of Task–Technology Fit as Sustainability in Higher Education. Sustainability. https://doi.org/10.3390/su13116450.

Entriza, A.N., & , Puspitasari, F.F.(2025). Studi Literatur: Integrasi Teknologi Informasi Dalam Pelatihan Guru Sebagai Upaya Meningkatkan Kualitas Pembelajaran. Junal Al-Idarah: Jurnal Kependidikan Islam. (15,1) 62 – 73.

Hibbard, M. (2011). Performance Assessment In The Science Classroom. New York: Glencoe Mc Graw-Hill.

Jang, M., Aavakare, M., Nikou, S., & Kim, S. (2021). The impact of literacy on intention to use digital technology for learning: A comparative study of Korea and Finland. Telecommunications Policy, 102154. https://doi.org/10.1016/j.telpol.2021.102154.

Khairunnisa Ramadhani Adam , Kaharuddin Arafah & Usman, (2023). Pengembangan E-Modul Pembelajaran Fisika Berbasis Web Pada Materi Momentum Dan Impuls. Jurnal Sains dan Pendidikan Fisika. (19,3), 295-303

Namestovski, Z., & Kővári, A. (2022). Framework for Preparation of Engaging Online Educational Materials—A Cognitive Approach. Applied Sciences. https://doi.org/10.3390/app12031745.

Peramunugamage, A., Ratnayake, U., Karunanayaka, S., & Jayawardena, C. (2024). Design of Moodle-based collaborative learning activities to enhance student interactions. Asian Association of Open Universities Journal. https://doi.org/10.1108/aaouj-06-2023-0079.

Topping, K., Douglas, W., Robertson, D., & Ferguson, N. (2022). Effectiveness of online and blended learning from schools: A systematic review. Review of Education. https://doi.org/10.1002/rev3.3353.

West, J., & Malatji, M. (2021). Technology Integration in Higher Education: The use of Website Design Pedagogy to Promote Quality Teaching and Learning. Electronic Journal of e-Learning. https://doi.org/10.34190/ejel.19.6.2557.

Zardari, B., Hussain, Z., Arain, A., Rizvi, W., & Vighio, M. (2021). Development and Validation of User Experience-Based E-Learning Acceptance Model for Sustainable Higher Education. Sustainability, 13, 6201. https://doi.org/10.3390/su13116201.