

Challenging the Status Quo: Open Journal Systems for Online Academic Writing Course

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Abstract: Doctoral students require scientific writing skills and appropriate learning media assistance to meet publication requirements in distinguished journals. This investigation evaluates the efficacy of Moodle and OJS in teaching dissertation proposals, based on the experiences of engineering doctoral students, to provide suggestions for the optimal platform. The study examining the efficacy of the OJS-based learning model for developing dissertation proposals as compared to Moodle for engineering doctoral students revealed varying results based on the statistical methodology used by UEQ. While the Comparison of Scale Means indicated OJS to be superior across all scales, the Two-Sample T-Test established significant differences solely on a few scales. While the OJS learning model may have a higher mean value, its superiority across all aspects of UEQ cannot be assumed. To enhance student learning experience, outcomes, and the learning model itself, optimization of all UEQ scales is imperative in the OJS-based approach to dissertation proposal development.

Keywords: User experience, Writing, Open journal systems, Moodle, Engineering doctoral students

1. Introduction

The ability to write scientific papers at a doctoral level is a complex skill that is essential for students. Doctoral students carry the added responsibility to publish their research results in reputable scientific journals (O'Keeffe, 2020; Yeung, 2019). Such a complex skill along with the obligation to publish necessitates suitable learning resources, particularly for engineering doctoral students (Kasparkova and Rosolová, 2020).

In recent years, experts in various fields have extensively reviewed several studies on the use of learning media to support the teaching of scientific writing. Some authors discuss the creation of accessible online learning environments (O'Flaherty and Costabile, 2020), the impact of research writing tutors during revision (Cotos, Huffman and Link, 2020), problem-based learning on enhancing problem-solving and scientific writing skills (Sari et al., 2021), and how the use of learning media and pedagogical approaches can enhance the teaching of scientific writing for doctoral students (Leberecht, 2021). Additionally, other scholars explore the various challenges and supports associated with academic writing (Gupta et al., 2022); Gupta et al. (2022) propose a virtual writing workshop, while Bottomley and Bourgeois (2022) suggest a similar method. Hands and Tucker (2022) advocate for writing pedagogy. Recent studies indicate that the use of WeChat (Qingguo, 2023) and ChatGPT (Huang and Tan, 2023) can enhance scientific writing and improve publication quality through publication-based training frameworks (Kuswandi et al., 2023). Based on the findings of this study, the utilization of electronic learning platforms serves as a substitute for instructors who teach scientific writing.

Based on the findings of this study, the utilization of electronic learning platforms serves as a substitute for instructors who teach scientific writing. Incorporating digital learning tools into the realm of scientific writing has opened up a world of thrilling prospects for students' educational journey. The thorough investigation of student user experience in utilizing such platforms is a new and promising focal point despite the widespread attention that the concept has received (Guo, 2021; Mirallas, 2021; Oktarina, Indrawati and Slamet, 2022; Weaver, Taylor and Osborn, 2019). The integration of technology and enhanced user experience will revolutionize our understanding of how student interactions with electronic platforms impact efficiency, creativity, and the outcome of scientific writing (Eppler et al., 2021; Meletiadou, 2021). Combining research on electronic platforms and user experience studies can provide deeper insights into novel methods for enhancing the learning process and advancing engineering doctoral students' scientific writing capabilities (Haidari, Katawazai and Yusof, 2020; Vurdien and Vurdien, 2020). Creating dissertation proposals is one type of scientific writing activity.

One online learning platform utilized for scientific writing purposes is Moodle (Raouna, 2023). State University of Malang (UM) uses Moodle as its online learning platform, which is named Learning System in Network (SIPEJAR); hereinafter referred to as Moodle. The dissertation proposal development course for doctoral

engineering students is a follow-up to the scientific writing course, managed within Moodle at SIPEJAR (UM, 2020). The SIPEJAR system, based on Moodle, does not effectively aid the learning process in dissertation proposal development courses. This is consistent with findings reported by El-Maghraby (2021), Fernando (2020), Campo, Amandi and Biset (2021), and Hasan (2021), all of whom exposed the limitations and obstacles associated with utilizing Moodle for the purpose of scientific writing education.

Thus far, despite its widespread use as an online learning platform, Moodle has limitations for learning scientific writing or developing dissertation proposals. These limitations include the lack of peer review and dialogic feedback features (Fernando, 2020), as well as the inability to record results of reviews and feedback (Elizarov, Zuev and Lipachev, 2014). Based on this issue, the author suggests a novel approach by examining the potential of Open Journal Systems (OJS) as an alternative online learning platform in addition to Moodle, which was formerly exclusively a content management and editorial process for scholarly journals (Herdianto et al., 2022). Nevertheless, prior to implementing this solution, it is imperative to thoroughly comprehend the user experience contrast between Moodle and OJS. It is crucial to understand the interaction between these two platforms and their impact on user satisfaction, usability, ease of use, and learning (Schrepp, Hinderks and Thomaschewski, 2017). This knowledge is fundamental to ensure appropriate implementation of OJS and enhance students' learning experience.

This study aims to objectively compare the efficacy of Moodle and OJS as learning platforms for the development of dissertation proposals, based on the experiences of engineering doctoral students. The paper adheres to conventional academic structure and employs clear, value-neutral language, with precise subject-specific vocabulary and correct grammar, spelling, and punctuation. Both qualitative and quantitative data analysis methods were used to ensure a balanced approach, and technical term abbreviations were explained upon first use. The research endeavors to elucidate the key factors that influence students' learning experiences and provide guidance in selecting an appropriate platform.

2. Method

To measure a product or service's user experience (UX), the User Experience Questionnaire (UEQ) is one method utilized. This method incorporates a questionnaire that comprises 26 items rated based on six scales which include attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty (Schrepp, Hinderks and Thomaschewski, 2017). To assess the UX of the learning model using OJS and Sipejar (Moodle), the UEQ method was adopted due to its fast, uncomplicated, and efficient nature in gauging overall UX.

2.1 Subject

A total of sixty postgraduate students from the Faculty of Engineering at State University of Malang were selected as research subjects for the study. These students participated in a semester-long dissertation proposal development course. The students were divided into two groups of thirty each, with one group utilizing OJS and the other group using Moodle as part of their learning experience.

2.2 Research Instrument

The UEQ questionnaire grid consists of 6 dimensions, as follows (1) Attractiveness: This dimension measures how attractive the product or service is to the user. (2) Clarity: This dimension measures how clear the product or service is to the user. (3) Effectiveness: This dimension measures how easy and efficient the product or service is to use. (4) Reliability: This dimension measures how reliable the product or service is. (5) Stimulation: This dimension measures how interesting and fun the product or service is. (6) Novelty: This dimension measures how new and innovative the product or service is.

The UEQ questionnaire uses a 7-point Likert scale, as follows Strongly Disagree, Disagree, Somewhat Disagree, Neutral, Somewhat Agree, Agree, Strongly Agree (Figure 1). The questionnaire used in this study is the Indonesian version. The UEQ scale can be divided into pragmatic quality/classical usability aspects (clarity, efficiency, reliability) and hedonic quality/user experience aspects (stimulation, novelty). Pragmatic qualities describe task-related quality aspects, while hedonic qualities are non-task-related quality aspects.



Figure 1: UEQ seven-point Likert scale example

2.3 Data Collection and Analysis

At the end of the semester, all students taking the Dissertation Proposal Development course from the OJS and Moodle user groups completed the 26-item User Experience Questionnaire (UEQ). The following procedures were followed. (1) Creation of the UEQ in a Google form adapted to the research context. (2). Online distribution of the UEQ via google form to each group of OJS and Moodle users. (3) After students completed the UEQ, they sent it back to the researcher for data processing.

The data set received was 60 responses to UEQ questions, consisting of 30 responses to OJS class UEQ and 30 responses to Moodle class UEQ. All data is processed using data analysis tools provided by UEQ. Once all the data is processed, the UEQ results between the OJS class and the Moodle class are compared. The document presents a simplified t-test to determine whether the means of two measured products are significantly different. The following sequentially mentioned data obtained from calculations using UEQ tools are: (1) OJS and Moodle class user experience data set, (2) UEQ scales (mean and variance), (3) pragmatic and hedonic quality, (4) benchmark, (5) comparison of scale means, (6) two-sample t-test.

3. Results

3.1 UEQ Results OJS and Moodle Based Learning Model

The results of the UEQ for OJS and Moodle show that both online platforms used as learning media have generally met users' expectations. However, OJS has some advantages over Moodle in terms of attractiveness, clarity, efficiency, accuracy, stimulation, and novelty (Table 1).

Furthermore, the average UEQ score of the OJS-based learning model is 1.89 and that of Moodle is 1.39 for all six scales. This result means that, on average, users rate the user experience of OJS higher than that of Moodle. The UEQ is measured on a scale from -3 to +3, with 0 being neutral. A positive value indicates a positive rating, while a negative value indicates a negative rating (Schrepp, Hinderks and Thomaschewski, 2017). Therefore, the values of 1.89 for OJS and 1.39 for Moodle indicate that both platforms are rated positively by users, but OJS is rated more positively than Moodle (Figure 2).

Table 1: Comparison of Scale Means

Scale		OJS		Moodle	
		Mean			
Attractiveness	Attractiveness	2,02		1,57	
Perspicuity	Pragmatic Quality	1,91	1,92	1,48	1,42
Efficiency		1,94		1,47	
Dependability		1,92		1,33	
Stimulation	Hedonic Quality	1,96	1,78	1,29	1,24
Novelty		1,60		1,19	
Means		1,89		1,39	

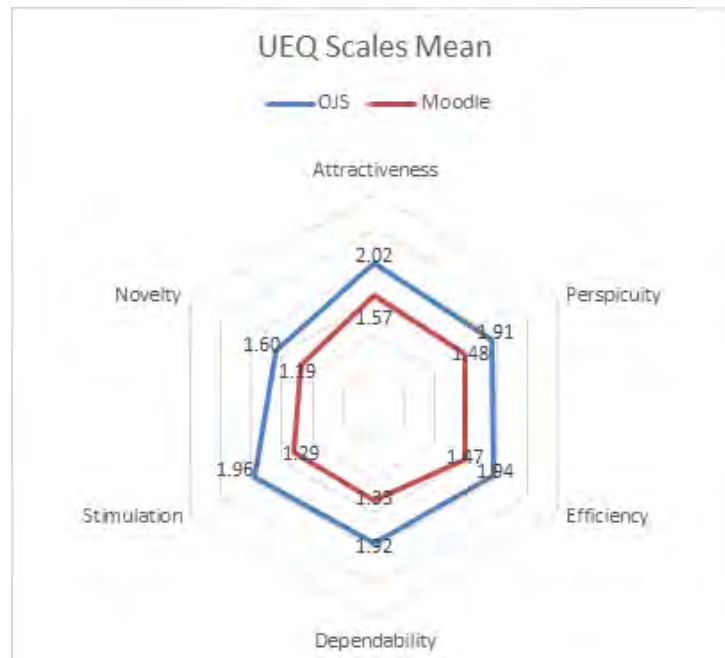


Figure 2: Visual Diagram of Scale Means Comparison

3.2 OJS and Moodle Benchmark

A benchmark in UEQ is a standard or reference used to compare the results of User Experience Questionnaire (UEQ) measurements on a particular product or service with the results of UEQ measurements on other products or services. Benchmark UEQ can help evaluate the UX quality of a particular product or service and compare it to similar products or services in the market.

Based on the scale means of the UEQ benchmark results of the OJS class, the scale means of Attractiveness, Efficiency, Dependability, and Stimulation are in the excellent category, while Perspicuity and Novelty are in the good category (Figure 3). While the scale means of the UEQ benchmark results of the moodle class show all scale means in the above average category except for Novelty in the good category (Figure 4).

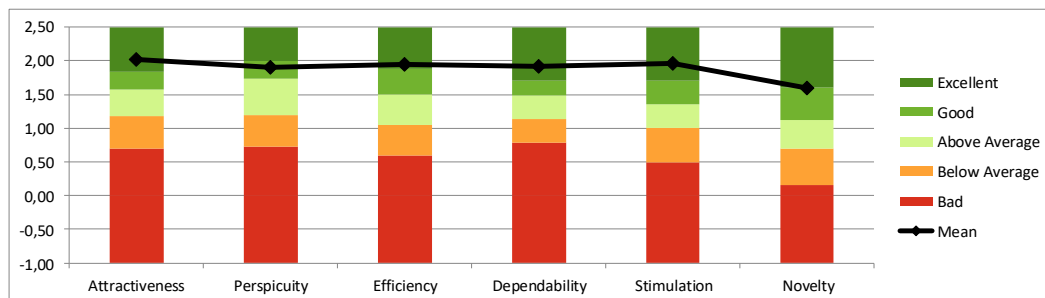


Figure 3: OJS Benchmark Results

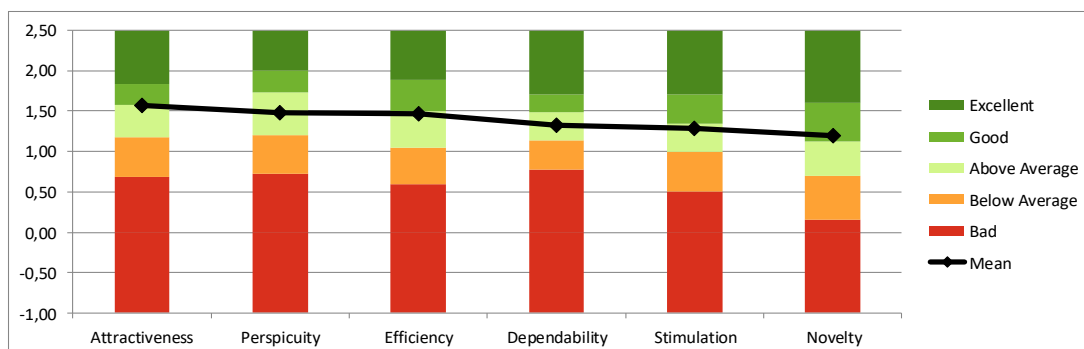


Figure 4: Moodle Benchmark Results

Calculations by the UEQ product comparison tool show the results of a two-sample t-test assuming unequal variances to test whether there is a significant difference between the measured means of the learning models using OJS and Moodle (Table 2). Two-sample t-tests assuming unequal variances are a more accurate method than two-sample t-tests assuming equal variances. The default alpha level is 0.05. In general, the comparison of scale means of the OJS class is higher than that of Moodle (Figure 5), but the results of the two-sample t-test with unequal variances show insignificant differences in the scales for Perspicuity, Efficiency, and Novelty. Attractiveness, Reliability, and Stimulation show significant differences.

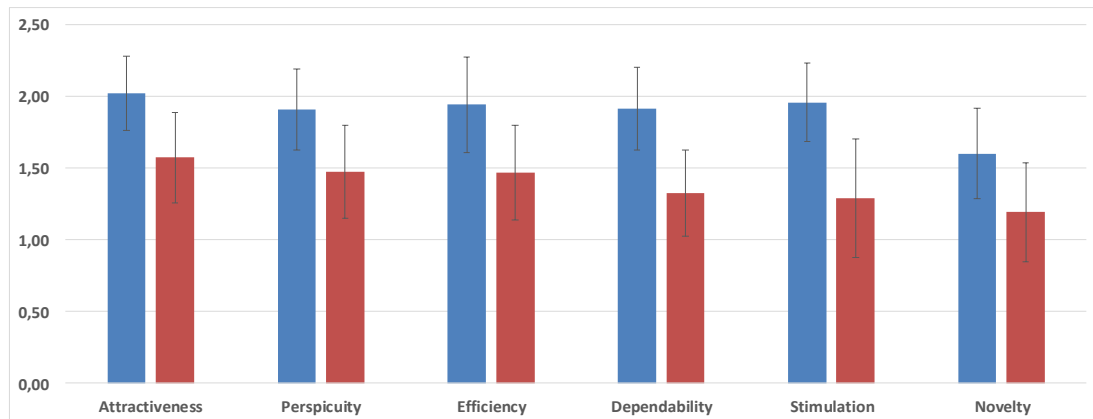


Figure 5: Comparison of Scale Means

Table 2: Two Sample T-Test Results (UEQ Compare Products Tools)

Two sample T-Test assuming unequal variances		
This sheet shows a simple T-Test to check if the scale means of two measured products differ significantly. As default the Alpha-Level 0.05 is used, but you can simply change this value in this sheet if you want to use a different level.		
Alpha level: 0,05		
Attractiveness	0,0361	Significant Difference
Perspicuity	0,0527	No Significant Difference
Efficiency	0,0518	No Significant Difference
Dependability	0,0072	Significant Difference
Stimulation	0,0112	Significant Difference
Novelty	0,0924	No Significant Difference

4. Discussion

4.1 Attractiveness

The results of the comparison between the OJS and Moodle-based learning models for dissertation proposal development, based on the Attractiveness UEQ results, showed significant differences. The OJS model has a higher Attractiveness UEQ value (2.03) compared to Moodle (1.57), indicating that students are more engaged, have a better learning experience, and feel more comfortable when using OJS. The quality of the OJS-based learning model was also rated as better in supporting the development of dissertation proposals. These findings confirm the superiority of OJS as a more engaging and effective learning platform in this context, but the selection of a learning model should still take into account students' needs and preferences, as well as specific teaching objectives (Priego and Peralta, 2013; Stufft and Brogadir, 2011).

OJS is primarily designed for scholarly publishing, not learning. However, OJS can be a useful tool for educators and students interested in publishing their research or teaching materials in a scholarly format and can be used to enhance teaching and learning by creating an authentic peer review process for students (Hurkett, 2018; Koskinen, Roinila and Syvälahti, 2021). The use of OJS as a learning platform, especially for the development of dissertation proposals, is a breakthrough in creating a positive learning experience, and the high quality of the learning model and user convenience are key factors in higher education (Ho, Cheong and Weldon, 2021).

Reigeluth found that a positive and effective learning experience in higher education involves four main components: motivation, comprehension, evaluation, and application (Reigeluth, Beatty and Myers, 2016). In the context of the OJS learning model, these components are well integrated to create a positive learning experience. First, OJS provides motivation through attractive and effective design, which motivates students to engage in the learning process. Overall, attractive and effective design can be used to motivate students to engage in the learning process in higher education (Hooshyar et al., 2019; Van Hanh, 2020).

Second, the learning platform assists students in comprehending the course material through its provision of a range of learning resources and tools, including learning modules, discussion forums, and tutorials (Arora, 2021; Mabasa, 2023). Thirdly, the platform facilitates student evaluation and feedback by offering assessment tools that enable supervisors to provide comments and suggestions directly, thereby supporting students in achieving their educational objectives. Finally, the Open Journal Systems (OJS) platform enables students to apply their learning materials in real-life contexts through exercises, imulations, and projects (PKP, 2023).

OJS is among the e-learning platforms that support life-based learning in real-world situations. OJS offers a robust and diverse learning experience that allows students to gain practical and theoretical knowledge. Lecturers can develop relevant learning activities that assist students in developing skills and knowledge that are applicable in the workplace or daily life. The incorporation of a Life-Based Learning approach within the OJS-based learning model enhances students' engagement and comprehension by demonstrating the material's relevance to their daily lives and learning objectives. According to Widiyanto, Purwasih and Perguna (2020), the integration of Life-based learning through E-LMS amplifies students' comprehension of community practices and knowledge construction. It also allows students to cultivate self-direction, ongoing inquiry, adaptability, and sustainability in preparation for the challenges of the 21st century post-graduation (Muntari et al., 2021). Additionally, the quality of the OJS-based learning model plays a pivotal role in enhancing students' learning experiences.

The selection of Open Journal Systems (OJS) as a platform for developing dissertation proposals considers student characteristics (Man, Nural Azhan and Wan Hamzah, 2019), learning objectives (Manescu, 2013), and resource availability for ensuring high quality (Madusanka et al., 2023). OJS is adaptable to accommodate diverse student characteristics by offering flexibility in terms of time and location, enabling students to access learning materials according to their own schedules and preferences (Owen, 2008). Interactive features, such as chat rooms and discussion forums, are embedded in OJS to promote student and supervisor collaboration, which enhances engagement in learning. While OJS version 2 does not provide full support for online discussion forums, OJS version 3 offers online interaction capabilities.

Additionally, it is essential to consider the learning objectives. The Open Journal System (OJS) can be customized to attain precise educational goals, such as furnishing structured learning modules and explicit steps to aid students in their dissertation proposal development. Figure 6 exemplifies the four components designed for the dissertation proposal development course. Every student must complete these four stages to ensure a well-organized and structured approach to composing a dissertation proposal in scientific article format (PKP, 2022). A gradual learning process is a efficacious methodology for learners to attain knowledge and skills in a meaningful and enduring way (Caetano, Luedke and Antonello, 2018; Penissi, 2021). Avoiding subjective evaluations, ensuring clear and concise language, maintaining conventional structure, utilizing objective and value-neutral language, adhering to style guides, and utilizing hedging techniques while avoiding biased phrasing and unclear sentence construction are essential components in the creation of high-quality academic writing. Additionally, precise word choice, correct grammar, and appropriate punctuation contribute to the overall excellence of the written work.

Journal Sections	
SECTION TITLE	ABBREVIATION
Articles	ART
Title; Abstract	TA
Title; Abstract; Introduction	TAI
Title; Abstract; Introduction; Literature Review	TAIL
Title; Abstract; Introduction; Literature Review; Method	TAILM

Figure 6: Journal Section

Finally, it is crucial to consider resource availability (Savin, 2020). OJS can enhance access to pertinent resources, including reading materials, scientific journals, and related references, for students. Furthermore, OJS is capable of integration with various learning platforms, including YouTube, social media, open educational resources, and research tools, thereby enhancing students' comprehension and proficiency while composing dissertation proposals (refer to Figure 7). Furthermore, OJS's features are tailored to facilitate students' dissertation proposal writing learning process.

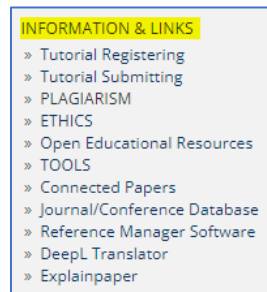


Figure 7: Educational resources link on the OJS sidebar

Considering student characteristics, learning objectives, and resource availability, utilizing OJS as a learning model platform for developing a dissertation proposal can offer both convenience and high-quality learning experiences for students. Furthermore, according to the constructivism learning theory framework, students construct their own knowledge through active interaction with learning materials. Thus, the quality of the learning model is crucial for facilitating deep understanding (Pundir and Surana, 2016).

The efficacy of the learning model in promoting deep comprehension is pivotal, as is the degree of comfort students experience when engaging in OJS-based dissertation proposal development learning. The results of both the UEQ and statistical analyses indicate a substantial contrast between student comfort levels when interacting with the OJS-based dissertation proposal development learning model and the moodle. Alojaiman (2021) confirms that the choice of platform used strongly influences student comfort in the learning process.

To support effective student learning, an OJS-based learning model must prioritize several crucial aspects, with ease of use being essential. Achieving ease of use involves user-friendly design and intuitive navigation, as emphasized by Abuhlfaia and Quincey (2018). In order to ensure the quality of learning, it is crucial that the learning materials are relevant to the needs and interests of students (Sutini, Emzir and Rasyid, 2021). Additionally, proper facilities should be available to support interactive and independent learning processes (Kuo et al., 2014). Finally, the role of instructors in delivering quick and precise feedback on student work is vital for enhancing the quality of learning (Dawson et al., 2019).

Furthermore, the learning model for developing dissertation proposals that utilizes the OJS digital platform holds potential for personalizing and adapting content to individual preferences. The materials relevant to article anatomy, publication ethics, academic writing, composing papers, research tools, drafting, and layouting are available as an example for lecturers to present the most pertinent information to students in accordance with their course (refer to Figure 8). The alignment of learning materials with students' needs and interests within the dissertation proposal development course is essential for the achievement of successful learning outcomes.

GENERAL	TEACHING MATERIALS	STUDENT	RESEARCH TOOLS
- Introduction	- Paper anatomy	- Author Guideline	-VOS Viewer
- Similarity check	-Publication Ethics	- Online Submission	-Bibloshiny
-OER	-Academic Writing	- Scispace	-Elicit
- License	- Composing Paper	- LEX	- Research Rabbit
-User Experience	- Research Tools	-Litmaps	-ZoteroBib

Figure 8: Materials Required for OJS Dissertation Proposal Development Courses

4.2 Perspicuity

Based on the results of a two-sample T-test assuming unequal variances, there is no significant difference between the OJS-based and Moodle-based learning models for dissertation proposal development. However, it is noteworthy that the OJS class (1.91) outperformed the Moodle class (1.48) according to the Scale Means comparison. The results of the two-sample T-Test indicate no significant difference between OJS and Moodle-based learning models in terms of their performance in the Perspicuity aspect of UEQ.

Various factors could be attributed to the lack of significant difference experienced when students utilize OJS and Moodle-based models, including the quality of learning content. It is important to note that both OJS and Moodle function solely as platforms to present learning material. The quality of the academic content is the main determinant of successful learning. If the content is of high quality, students will be able to learn effectively irrespective of the platform. As explained by Hökkä et al. (2022), Hou, Li and Wang (2021), and Razak, Rahman and Moktar (2021), the selection of learning models and development of learning content should take into account several factors, including accuracy, reliability, relevance, usability, interactivity, multimedia, accessibility, user-friendliness, and pedagogical approach.

Additionally, students' ability and motivation are crucial factors beyond the quality of learning content. If students possess adequate skills and motivation, they can learn successfully irrespective of the learning environment utilized. For instance, digital literacy (Araniri et al., 2021), student motivation (Attention, Relevance, Confidence, and Satisfaction), student outcomes (knowledge, skills, and attitudes) (Yahiaoui et al., 2022), and students' temperament (Mo, Jin and Jin, 2022) have a significant impact on learning achievement irrespective of the platform employed.

Furthermore, the learning procedure is a crucial element to consider. An effective learning process is essential for successful education. Thus, a combination of these various factors is required for an effective learning process. It can help to maximize the potential of the platform being used. Achieving an effective process involves classroom management (Iacob and Muşuroi, 2021), learning strategies (Sumeracki and Weinstein, 2018), collaborative learning, effective communication, teacher-student interaction (V. Kumar and Sharma, 2021), and adaptive learning (Khedr, Idrees and Alsheref, 2019). These factors can greatly influence learning success and aid in comprehension of dissertation proposal development.

Earlier factors affect ease of understanding dissertation proposal development regardless of platform selection, but there is a higher Comparison of Scale Means value in the OJS class than in the Moodle class. This suggests that users find it easier to comprehend and utilize OJS when learning dissertation proposal development compared to Moodle. A T-Test is a statistical analysis utilized to ascertain if there is a significant difference between two groups' means (Liang, Fu and Wang, 2019; Setyosari, 2015). In contrast, a Comparison of Scale Means directly compares the means of two groups (N. Kumar and Goyal, 2018). Therefore, if the T-Test indicates no significant difference, the Comparison of Scale Means may still detect a difference in their means (Çoban and Yildirim, 2018).

Several reasons suggest that OJS may be easier to use than Moodle based on the Comparison of Scale Means. Firstly, OJS's interface design may be more intuitive and align better with users' preferences, providing it with an advantage in clarity. Additionally, the characteristics of the course on dissertation proposal development closely relate to scientific writing mentoring. While the Open Journal Systems (OJS) is deliberately created for the purpose of managing and publishing scientific journals, it features a peer-review process that provides intensive writing assistance (Hurkett, 2018). Due to its exceptional interface design and manuscript management process, the OJS is highly appropriate for dissertation proposal development courses.

Secondly, users' familiarity with the platform can influence their comfort and confidence in using it. Familiarity with e-learning platforms yields advantages such as ease of use, time savings, enhanced learning outcomes, customization, collaboration, personalization, and flexibility (Alojaiman, 2021; Yuen, 2012). When students are familiar with the OJS platform, their comfort and trust in using it will increase, enhancing the perspicuity aspect of the OJS-based dissertation proposal development learning model compared to Moodle.

Third, OJS offers more robust features and functionality for presenting information clearly and facilitating navigation in learning dissertation proposal writing than the Moodle platform. OJS provides peer review, editing, multi-format publishing, structured archives, flexible access rights systems, and usage statistics (Adler and Liyanarachchi, 2015). All elements are displayed in a customizable interface for the dissertation proposal development course. Furthermore, the editorial review process can be tailored into multiple sections according to the scientific article format's dissertation proposal writing stages.

Customizing the editorial review process in Open Journal Systems (OJS) enables editors to modify the review workflow by selecting a single/double blind review model, open review, or editorial review (Kim et al., 2018). Reviewers can use specially designed assessment forms to evaluate the quality of titles, abstracts, introductions, literature studies, and methods, and automatic notifications can be established for effective communication between instructors and learners. Regular formatting of the section headings and author and institution details must be maintained to ensure conciseness and clarity in the document. It is also essential to use objective and

neutral language, avoid biased and ornamental expressions, and stick to standard sentence structure to improve the manuscript's grammatical correctness and academic writing quality. This aligns with Willy et al.'s (2017) research, which created an automated rating recommendation system within the review form to assist editors in evaluating the quality of peer reviewers. In the context of dissertation proposal development, implementing the recommendation system can boost the overall quality and efficiency of the learning model.

Additionally, a streamlined registration and submission process, an effective feedback system for constructive criticism from supervisors, regular notifications regarding proposal status, and a repository for easy access to published proposals, aid in enhancing student comprehension when engaging in learning. OJS provides comprehensive system support for students during the dissertation proposal writing process. Caminero et al. (2013) stressed the importance of the availability and suitability of features in the LMS in facilitating student learning.

The comprehensibility and learnability of a learning model often hinge on the complexity of its structure and presentation during instruction. A properly organized learning model with a clear structure and straightforward presentation of the materials it contains can facilitate students' comprehension of the concepts covered. Clear instructions and materials are essential in the learning model to enable students to focus and comprehend the learning objectives. The resultant effect is a simplified and effective learning experience for all students.

4.3 Efficiency

Regarding efficiency, there exists no significant distinction in outcomes between a learning model based on OJS and one utilizing Moodle. The Two Sample T-Test result is 0.0518, with a comparison of scales indicating Mean OJS = 1.94 and Mean Moodle = 1.47. The unimportance of the statistical test outcomes can be clarified by examining the speed of material comprehension, efficiency, practicality, organizational structure, and learning materials.

Students learn to develop dissertation proposals on Moodle and OJS. They have the same experience with regard to material comprehension speed. This finding was confirmed by a Two Sample T-test. The similarity in experience can be attributed to the similar design and features of both systems. The similarity in experience can be attributed to the similar design and features of both systems. For instance, the online platform provides unrestricted access to learning resources, enabling students to learn conveniently. The teaching materials can be customized to suit students' individual learning needs, and organized methodically to facilitate comprehension. Additionally, multimedia elements can be integrated into the learning materials to enhance their engagement and clarity. Furthermore, interactive sections, such as discussion forums, quizzes, and assignments, are available to stimulate students' participation and evaluation. Notably, some of the features may differ between the OJS and Moodle-based dissertation proposal development learning systems (Moodle, 2023; PKP, 2022).

In terms of the practicality and organization of learning materials for developing dissertation proposals, the reliability of OJS and Moodle is more or less equal. Moodle (2023) and PKP (2022) provide similar examples. For instance, both platforms offer user management features such as creating user accounts, assigning user roles, and managing user profiles, as well as metadata management features. Metadata management features enable managers to manage metadata and simplify tagging and content retrieval. Additionally, a statistic management feature allows managers to access usage statistics, including visitor numbers and content downloads.

While the research suggests that both learning models have comparable efficiency, significant differences exist between the two when applied to dissertation proposal development. The OJS-based learning model has distinct advantages for this purpose, as outlined in Herdianto's (2022) explanation. (1) The collection of student writing in this case pertains to the work that has successfully undergone the mentorship and review process with the instructors. (2) The editorial assessment method is implemented during the educational process, specifically involving the creation of research articles from mentored proposals. Abbreviations for technical terms are explained upon first usage. (3) An email notification is sent as a reminder when all stages of the mentorship process - before, during, and after - have been completed.

In general, the rate at which students comprehend learning materials is highly influenced by the practicality, efficiency, and organization of the material structure. If the learning materials are well-structured and presented through efficient pedagogy, students can more quickly and effectively comprehend the materials. Achieving faster and more effective comprehension can also be facilitated by providing easy access to teaching materials and utilizing practical learning methods. Efficient and practical material organization, along with structural coherence, significantly enhance students' ability to comprehend and retain learning materials.

4.4 Dependability

The Two Sample T-Test results from the UEQ Compare Products Tools comparing the OJS-based learning model and Moodle indicated a substantial disparity with UEQ scales average of 1.92 for OJS and 1.33 for Moodle. These results demonstrate the benefits of utilizing the OJS platform rather than Moodle for learning to construct dissertation proposals. The benefits of OJS are explained with regards to predicting and achieving learning outcomes, supporting the learning process, and maintaining a secure learning environment.

First, based on the prediction and fulfillment of expectations for learning outcomes, OJS offers a reliable system that allows assessment and evaluation of learning progress and systematic stages of the learning process adapted from OJS and structured in section packaging. Comprehensive monitoring tools, such as review forms, enable educators to track and assess student engagement and performance. This facilitates prompt feedback and interventions to enhance the student experience, foster positive learning outcomes, and meet academic expectations. Supporting findings by Singh (2019) and Szabo et al. (2017) highlight the crucial impact of feedback and interventions on student learning outcomes within higher education.

Second, to support the learning process of developing dissertation proposals, OJS enables the creation of dissertation proposals in the form of scientific articles. OJS allows for easy access to scientific literature, offers a systematic peer review process that provides constructive feedback, and gives writing and formatting guidelines, as well as reference management tools. Furthermore, the utilization of OJS provides students with hands-on experience in the editorial process of journals, such as submitting and revising articles based on feedback from professors. The OJS also serves as a beneficial learning resource for students in developing their scientific writing skills by granting access to previously published articles and educational materials. Establishing an all-encompassing, adaptable, and captivating learning platform is crucial for the success of education (Nacheva-Skopalik et al., 2020).

Third, the security of OJS's learning environment is robust. With its emphasis on scholarly publications, OJS maintains a strict security system to ensure the legitimacy and accuracy of published content. OJS employs rigorous security measures for protecting sensitive data and preventing unauthorized access, utilizing encryption and authentication protocols to safeguard user information. It is crucial to uphold user confidence in all research results and datasets stored on OJS servers. Ensuring a productive and beneficial learning environment necessitates the consideration of physical, digital, and emotional factors (Lam, Chan and Wong, 2019).

Additionally, predicting learning outcomes affords students insight into what they can anticipate from the learning experience, instilling a crucial sense of purpose and confidence. Providing assistance throughout the learning process helps students navigate challenges and attain their objectives, thus bolstering their faith in their capacity to learn. The safety of the learning environment is critical to students' ability to focus and concentrate without distraction, enabling effective learning. Additionally, aligning the learning process with students' expectations minimizes uncertainty, disappointment, and enhances the learning model's dependability to achieve desired learning outcomes. Overall, the dependability of UEQ establishes a sturdy and trustworthy basis for fostering successful and efficient learning.

4.5 Stimulation

Based on a Two Sample T-Test comparison of the OJS-based learning model for dissertation proposal development with Moodle, the result was a value of 0.0112. The Comparison of Scale Means indicates that OJS (1.96) has a higher value than Moodle (1.29). The Two Sample T-Test result of 0.0112 suggests that there is a significant difference in the stimulation aspect of student experience when learning the development of OJS-based dissertation proposals compared to Moodle. The comparison of scale means between OJS-based and Moodle-based learning models reveals that the former is more effective in motivating students and generating interest in dissertation proposal development. The results indicate a significant difference in favor of the OJS-based model.

The effectiveness of the learning model in enhancing students' cognitive and creative abilities heavily relies on the adaptability, relevance, and interactivity of the approach (Baimakhanova, Kali and Orynbasar, 2023; Hidayati et al., 2019). Furthermore, active stimulation during the learning process encourages participants to feel a connection to the material, ensure its relevance, and fosters creativity and innovation (Petkova, 2019). Positive feedback plays a crucial role in sustaining participants' motivation (Wondim et al., 2021). A learning model with robust stimulation elements can enhance the learning experience, maximize learning outcomes, and promote continuous learning (Anderson, 2016; Lah, 2020).

The OJS-based learning model for developing dissertation proposals effectively stimulated doctoral postgraduate students in electrical engineering. For instance, during the initial and later phases of producing a dissertation proposal, OJS offers functionalities to acquire input from advisors (see Figure 9). According to Figure 9, instructors give students feedback focused on the content of the article, grammar, typography, punctuation, reference list, and writing approach. All of this feedback can ultimately optimize educational results and promote ongoing learning by publishing numerous articles based on dissertation proposals in prestigious international journals (Sulistyo et al., 2023) and accredited national journals (Manga' et al., 2023.).

Furthermore, OJS version 3 supports synchronous discussion forums, whereas in OJS version 2, communication takes place asynchronously. In order to enable synchronous talks in OJS 2, it is possible to incorporate online communication applications such as WhatsApp, Telegram, or Tawk (Figure 10). This facility primarily serves two purposes: (1) facilitating consultations between students and instructors (researchers) to address technical issues such as access difficulties, password changes, and article upload processes, and (2) enabling discussions in the review process, whether synchronously or asynchronously, outside of the OJS platform. These tools have the potential to enhance comprehension and drive in the dissertation proposal creation course for PhD candidates in electrical engineering and informatics (Herdianto, 2022).

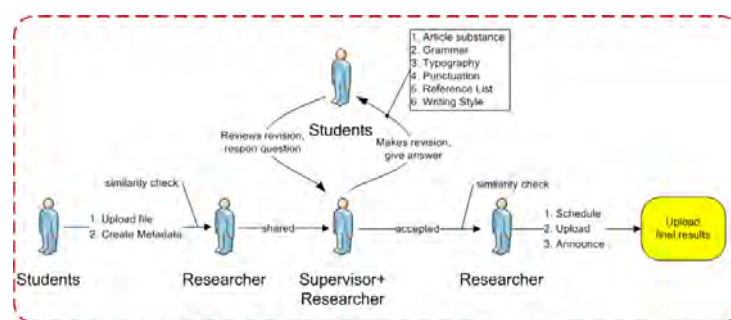


Figure 9: Process in OJS-based learning model

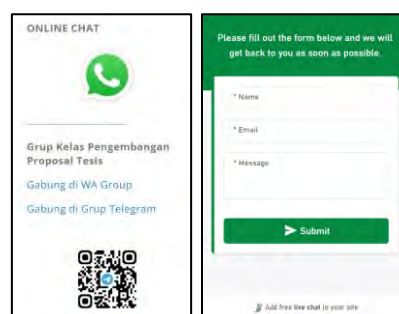


Figure 10: Communication forum link on OJS sidebar

Ample amounts of pleasant stimulation can effectively motivate students to offer more constructive feedback and actively engage. When students experience a sense of happiness and contentment, they are more inclined to offer constructive and beneficial comments (Abrahamsen et al., 2020). Moreover, the comments given by students might offer valuable information about the degree to which positive stimulation has been effectively accomplished in the course on dissertation proposal development.

4.6 Novelty

The comparison of scale means on the novelty scale in the User Experience Questionnaire (UEQ) between the Open Journal Systems (OJS) based dissertation proposal development learning model with a value of 1.60 and Moodle with a value of 1.19 shows that OJS has a higher mean value in the novelty aspect compared to Moodle. However, after a Two Sample T-Test analysis, it was found that the difference between the two platforms was not statistically significant. This suggests that although OJS has a higher mean score on the novelty scale, the difference cannot be considered statistically significant. Thus, the two learning models using different platforms may have similar levels of novelty in their user experience according to the results of the Two Sample T-Test analysis.

The assessment of user experience on the novelty scale can be seen based on the level of creativity of the learning model used. In line with Goćłowska et al. (2019) who explained that there is a relationship between

novelty and high creativity. The following factors cause OJS and Moodle-based dissertation proposal development learning models to generally have the same level of creativity of learning models according to students. (1) Both help students to develop creativity and critical thinking in scientific writing. (2) Provide opportunities for students to collaborate with lecturers or instructors to get new ideas. (3) Provide constructive feedback from lecturers or instructors to help students develop their ideas. Some of these factors are supported by previous studies that discuss creativity, critical thinking, collaboration, and student feedback in learning with elearning platforms (Barysheva et al., 2020; Buhu and Buhu, 2018; López López and Silva, 2010; Mitina, Sleptsova and Shevelyova, 2021; Samihah and Savitri, 2021; Wu and Schunn, 2021).

Regarding the sophistication, familiarity, and creativity of the learning model, the statistical data indicates that there is no significant distinction between the utilisation of OJS, which has an average score of 1.60, and Moodle, which has an average score of 1.19. Both OJS and Moodle include similar capabilities and characteristics in offering advanced learning solutions. While both platforms may employ distinct methodologies or possess specific functionalities, they generally meet the requirements of users in a contemporary digital learning environment. Currently, in the realm of digital education, the level of complexity of e-learning platforms is consistently increasing (Alojiman, 2021), and both platforms have adapted accordingly.

While there may not be any substantial disparities in terms of prevalence and creativity between OJS and moodle-based dissertation proposal development learning methods, there are distinct and fundamental distinctions between the two. Table 3 presents a concise summary of the distinctions between OJS and Moodle-based dissertation proposal development learning models, focusing on their ubiquity, originality, and novelty. Nevertheless, it is crucial to acknowledge that both systems undergo continuous development, resulting in modifications to their features and functionality.

Table 3: Differences between OJS and Moodle-based Dissertation Proposal Development Learning Models

Aspect	OJS-based learning model	Moodle-based learning model
Usability	Known for scientific journal publications Specific user interface for the review and editing process of scientific articles	Commonly used for e-learning User interface familiar to educational institutions
Innovation	The engineering editorial review process for publishing scientific journals in OJS is adapted for the mentoring and consulting process between lecturers and students. The recording function of OJS will keep the guidance data alongside the review findings that are packed in the session for reviewing an article. OJS has identical system and process characteristics for dissertation proposal development courses.	The e-learning platform has complementary functions in providing various forms of learning materials such as text and multimedia, organizing online discussions, creating assignments and evaluations. It also serves as a storage function for teaching materials. These features contribute to the platform's overall function in offering an immersive and comprehensive learning experience.
Novelty	Utilizing OJS for dissertation proposal development provides a novel and all-encompassing method that leverages the functionalities of scientific journal platforms to facilitate a more organised and collaborative academic learning process. It also supports experiential learning and can serve as a virtual laboratory for students to enhance their scientific writing skills. Examples of features include the implementation of a peer review structure, the automation and tracking of processes, the use of layered permission for security, the facilitation of cooperation, interaction with scientific databases, the utilisation of standardised templates and formats, and the ability to record information.	This e-learning platform serves a broad purpose, not limited to scientific writing or primarily focused on dissertation proposal production.

The constraints of discussing the results of the User Experience Questionnaire (UEQ) in the context of the Open Journal Systems (OJS) based learning paradigm are as follows: Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty. There are various constraints associated with this research. Initially, the research sample consisted solely of 30 engineering PhD students from a single university in Indonesia, thereby constraining the applicability of the research findings. Furthermore, the study's duration was confined to a single semester, perhaps constraining the researcher's comprehension of the user experience over an extended period. Furthermore, the research is constrained to users' evaluation of the OJS-based learning model,

thereby restricting the researcher's comprehension of additional variables that could impact user experience. The research employed a quantitative approach, utilising the UEQ questionnaire as the primary tool.

The following are recommendations for additional research. Initially, it is important to carry out extensive research with a broader and more heterogeneous sample. Expanding the size and diversity of study samples can enhance the applicability of research findings (Andrade, 2020). Furthermore, carrying out research for an extended duration. Extended research duration enables a more comprehensive comprehension of user experience in the extended term (Karahanoğlu and Bakırlioğlu, 2022). Furthermore, broadening the scope of the investigation. Expanding the scope of research might enhance comprehension of additional variables that might impact user experience (Semerádová and Weinlich, 2020). Additionally, alternative approaches, such as qualitative methodologies or a combination of methods, are employed to assess UX, aiming to yield more comprehensive study findings (Lanius, Weber and Robinson, 2021). By overcoming these constraints, additional investigation can yield more comprehensive and all-encompassing insights on the user experience of OJS-based learning models.

5. Conclusions

The effectiveness of the OJS-based dissertation proposal development learning model using Moodle, as perceived by doctorate students in electrical and informatics engineering, can be assessed through two distinct statistical computations. According to the Comparison of Scale Means, the OJS-based dissertation proposal development learning model is superior than Moodle in terms of all UEQ scales (Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty). Secondly, the Two Sample T-Test, assuming unequal variances, reveals contrasting results. Specifically, there is a noteworthy disparity in user experience on the Attractiveness, Dependability, and Stimulation scale. However, there is no significant difference in user experience on the Perspicuity, Efficiency, and Novelty scale. This is intriguing because while the mean value of the Comparison of Scale Means calculation for the OJS-based dissertation proposal development learning model is higher than that of Moodle, the Two Sample T-Test assuming unequal variances does not show a significant difference on all UEQ scales between the OJS-based dissertation proposal development learning model and Moodle. Maximising all UEQ scales of the OJS-based dissertation proposal development learning model is crucial in order to optimise the learning experience and outcomes for students.

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