













features encourage active participation and interaction among students in the learning activities and improve students' ability to connect with their instructors to obtain timely feedback. Student-teachers feel comfortable asking questions and seeking clarification through Moodle's communication channels. In conclusion, Moodle facilitates effective communication and interaction between students and instructors in the learning environment.

5) *Student-teachers' attitudes toward course delivery via Moodle*: According to the data presented in Table 7, the average mean of students' attitudes within the "course delivery" component was calculated to be 4.01. This mean score (4.01) indicates a prevailing positive disposition among students toward Moodle as an additional learning platform, specifically concerning course delivery. Notably, the statement about the lecturer's communication of deadlines and time constraints for assignments, projects, and discussions garnered the highest rating, with a mean score of 4.24. Conversely, the statement receiving the lowest rating (mean = 3.90) was related to the lecturer's ability to ensure students' focus and adherence to the established learning trajectory.

TABLE VII  
STUDENT-TEACHERS' ATTITUDES TOWARD THE USE OF MOODLE  
REGARDING COURSE DELIVERY

No	Statement	Mean	S.D.	Meaning
1	The lecturer's guidance on participating in course learning activities was clear and precise.	4.00	0.81	Agree
2	The lecturer provided clear and specific instructions on how students should actively engage in various learning activities throughout the course.	4.05	0.82	Agree
3	The lecturer conveyed the deadlines and time limits for completing assignments, submitting projects, or participating in discussions.	4.24	0.77	Strongly agree
4	The lecturer clearly presented course topics.	4.01	0.81	Agree
5	The lecturer's ability to deliver course topics is easy to understand and comprehend.	3.93	0.77	Agree
6	The lecturer ensured that students stayed focused and on track.	3.90	0.84	Agree
7	The lecturers keep students engaged and focused on the course material.	4.02	0.84	Agree
8	The lecturer provided valuable feedback that improved my understanding of the course content.	3.97	0.83	Agree
9	Valuable feedback from the lecturer aids students in identifying areas for improvement and deepening their understanding of the course material.	4.00	0.84	Agree
10	The lecturer offered explicit instructions for actively engaging in learning activities.	4.07	0.80	Agree
	Total	4.01	0.81	Agree

Furthermore, concerning the use of Moodle as a supplementary platform to traditional learning for course delivery, most participants agreed that instructors provided clear and precise instructions for participating in course

activities. They offered explicit and specific guidance on how students should actively engage in various learning activities throughout the course. Additionally, the course topics in the presentation were conveyed with clarity. The lecturers effectively discuss course topics, making them easily understandable, and they skillfully keep students engaged and focused on the course material. The instructors provided valuable feedback, improving students' understanding of the course material. This guidance was instrumental in helping students pinpoint areas for improvement, deepening their understanding of the subject, and being provided with clear instructions for actively participating in learning activities. In summary, students viewed the delivery of supplementary course content through Moodle positively.

## B. Discussion

The findings of the current study's results establish that Moodle isn't just effective for online learning but also serves as a valuable support for students engaged in traditional learning methods. The findings reflect a favorable outlook on the use of Moodle, aligning with earlier research on the advantages and hurdles associated with this web-based platform [12], [13], [27], [53].

The existing study's findings confirm that students favor Moodle as a supporting tool for face-to-face learning activities. Table 3 depicts that utilizing Moodle in higher education for traditional learning encounters no significant issues. Participants agree unanimously on the app or web platform's ease and practicality across all surveyed dimensions. The average mean scores, standing at 3.92, affirm the student-teachers validation of Moodle's accessibility and user-friendly attributes in the educational context. These findings align with the research of Quansah and Essiam [49] and Legramante et al. [48], reinforcing the notion that Moodle is indeed user-friendly, as discovered in their respective studies. Conversely, this study contrasts with additional research finding substantiating the assertion that students encounter challenges in effectively utilizing Moodle, attributing this difficulty to a lack of requisite skills [24]. This empirical observation aligns consistently with the scholarly investigation conducted by Ghuonane and Rabahi [27], Mwatilifange and Mufeti [54], who clarified the global dimension of the issue by indicating that in certain regions, students face considerable obstacles in navigating and accessing the intricacies of the Moodle Platform.

Student-teachers' attitudes towards using Moodle, gauged through perceived usefulness, are notably positive, as evidenced by the data presented in Table 4. This study contributes substantively to the evidence affirming Moodle's role as a valuable platform for complementing face-to-face learning. This finding is notably evident in the research by [20] and [36], where students, while expressing a preference for traditional face-to-face instruction, concurrently advocate for incorporating online Moodle activities as a preferred and effective mode of learning. This study persists in the research findings of El-Maghraby [47], wherein students exhibit a positive attitude toward Moodle, recognizing its efficacy in supporting face-to-face teaching within the classroom context. Additionally, the alignment is further underscored by the research conducted by Manan et al. [45]

and Truong [46], wherein students express a positive inclination towards utilizing Moodle as an additional platform for developing speaking skills at the tertiary level. The noteworthy highest mean score of 4.19, as delineated in Table 4, further underscores the affirmative impact of Moodle on students' overall course learning experience. This outcome is not unexpected, considering that the Moodle learning platform has demonstrated efficacy in aiding students' comprehension and mastery of course materials [20], [47].

Table 5 presents student-teacher attitudes toward utilizing Moodle based on perceived satisfaction, and the average mean score is still considered a positive output. It suggests that the student-teachers who were researched in this study were satisfied using this platform. The result aligns with the research findings of [39] and [44]. This finding also aligns with the study of [43], indicating that students experience satisfaction with Moodle. The factors influencing their satisfaction encompass perceived usefulness, perceived ease of use, computer self-efficacy, service quality, information quality, and system quality. In fact, despite most student-teachers' agreement on their satisfaction with Moodle, some respondents consider that the feedback and support they receive from instructors through e-learning Moodle could be more timely and helpful.

In addition, the findings about the variable of communication and interaction (Table 6) within Moodle affirm the absence of significant issues in utilizing it as a supplementary platform for face-to-face learning. The consensus among respondents indicates that this web platform effectively supports student-teachers in facilitating communication and interaction during learning outside the traditional classroom. Notably, the highest-scored item underscores that Moodle's discussion forums foster meaningful and engaging discussions among peers. This underscores the platform's capacity to give students a distinct advantage in conducting their learning through discussions with classmates. This study aligns seamlessly with the outcomes of the previous studies wherein Moodle is recognized for its contribution to e-collaborative learning, heightened student engagement, and its capacity to assist students in active learning and social interaction within the academic context [39], [42].

Lastly, the data extracted from Table 7 reveals a prevailing favorable perception among student-teachers regarding Moodle's efficacy in course delivery. This alignment is consistent with the findings of the preceding research, which posits that Moodle serves as an effective tool in enhancing the teaching process and fostering successful learning outcomes [21], [44], [46], [55]. However, the divergence in results becomes evident when specifically scrutinizing course delivery, as underscored in the study conducted by [54]. Their assertion emphasizes that the effectiveness of facilitating students' learning, particularly in the specialized domain of computer literacy courses, may need to be improved in a developing country.

#### IV. CONCLUSION

This study seeks to explore how Moodle complements traditional instructional programs for student teachers in higher education by assessing their attitudes regarding its

ease of use, utility, satisfaction, communication and interaction, and course content delivery. Findings suggest that most student teachers view Moodle positively, recognizing its capacity to enhance and augment their learning journey.

The study highlights the importance of integrating Moodle into higher education teaching and learning practices in the Indonesian context. This is reinforced by the favorable attitudes expressed by student teachers, who view Moodle as a beneficial additional tool for traditional teaching and learning approaches. However, for a more thorough understanding, conducting in-depth interviews is crucial to exploring the underlying reasons behind the responses provided by student teachers in the survey.

Greater clarity is needed regarding the limitations posed by online facilities during Moodle-based teaching and the optimal use of Moodle in higher education settings as a supplement to traditional instructional activities, particularly in the aftermath of the COVID-19 pandemic. Conducting comprehensive interviews would offer valuable insights into these aspects.

Expanding similar studies across various educational settings and levels is crucial, considering the diverse resources available in different regions and institutions. This approach allows for a detailed examination of challenges that may vary in Moodle's application. Comprehensive research will offer a deeper understanding of Moodle's potential and challenges. Furthermore, assessing different Moodle features and exploring strategies for better integration with traditional teaching methods is essential. Longitudinal studies could also shed light on Moodle's long-term impact on learning outcomes and student engagement.

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