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Development of Collaborative Digital Module on Zedemy Platform to Improve Student Engagement

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ABSTRACT
During the Covid 19 pandemic, lecture activities in the Guidance and Counseling study program were transferred to online media through the e-learning platform of the Integrated Lambung Mangkurat University Information System (SIMARI). This study aims to produce collaborative digital modules through the zedemy platform used in lectures in the Guidance and Counseling study program, determine the feasibility of collaborative digital modules and determine the level of student engagement in using collaborative digital modules. ASSURE model development research (Analyze Learner, State Objective, Select Methods, Media and Materials) choosing to conducted on students of the Guidance and Counseling Study Program at Lambung Mangkurat University to determine student engagement with the use of modules. Module validation is carried out by material experts, media experts, and students. The feasibility of collaborative digital modules through the zedemy platform was assessed using a media expert eligibility sheet, material expert, and student involvement questionnaire in using the module. The results indicate the feasibility of the collaborative digital module shows a very feasible category in terms of media with a 103 of a maximum score of 116. Feasibility on the material aspect shows a very feasible category with a score of 97 out of a maximum score of 108 (89.81%). Student engagement showed a significant increase as indicated by the t-test results, obtained sig = 0.000. The mean of pretest = 55,35 and at posttest = 73.97. There is an increase in student engagement when using collaborative digital modules through the zedemy platform.

INTRODUCTION

Lambung Mangkurat University established wetlands as a definitive study or basic values of scientific vision studies which in general can be viewed from the main aspects of the study of education, law, socio-political science, agricultural science, forestry science, marine-fishery science, medical science-health, economics-business science, natural science-mathematics, engineering science, and dentistry. Realization with the statement that Lambung Mangkurat University has excellent studies on wetlands, as stated: "The realization of ULM as a leading and competitive university in the field of the wetland environment" as stated in the Rector's Decree number 263/UN/KP/2015, dated February 27, 2015 (Sari et al., 2022:7-8). The Guidance and Counseling Study Program FKIP ULM has the vision to become a leading and highly competitive study program to produce professional and characterized

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guidance and counseling scholars in a wetland environment. The wetland environment is the study center at Lambung Mangkurat University, which was later revealed to the Guidance and Counseling Study Program as study excellence to become guidance and counseling in the wetland environment. Harianto & Dewi (2017) explained that the wetland environment is an inundation or water storage area with terrestrial and aquatic characteristics. Wetlands include swamps, mangroves, brackish areas, flood inundation areas, inundated forests, and other similar areas. From the study of the wetland environment from a socio-cultural perspective, the major study of the wetland environment at Lambung Mangkurat University contains 11 main studies that are interrelated and inseparable between exact, social, and humanities (Budhi, 2020). From the eleven studies listed in the sub-study of the wetland social environment, the location of the guidance and counseling study for the wetland community is related to the study of social facts, social and environmental behavior, culture and local wisdom, and communication dimensions. (Sulistiyana et al., 2021:11)

The Guidance and Counseling Study Program of Lambung Mangkurat University, which emphasizes the excellence of the guidance and counseling study of the wetland community, has become a solid basis for emphasizing the uniqueness of students/counselors, the existence of the role of guidance and counseling teachers or counselors, development of guidance and counseling service programs, and background/ setting the presence of students or counselees in the wetland community. In the Learning Outcomes that have been determined by the Guidance and Counseling Study Program of the University of Lambung, graduates from the Guidance and Counseling Study Program of the University of Lambung Mangkurat have the provision to be able to adapt and adjust to the world of work after completing their undergraduate education. In addition, the experience gained will strengthen the readiness of graduates to adapt to the development of the world of work and life in society and foster lifelong learning habits.

During the Covid-19 pandemic, there was a change in learning methods that are usually done face-to-face in class; switching to distance learning or online can be a stressor for students. (Nurmala et al., 2020). In addition, changes in the distance learning process implemented during the pandemic pose challenges for students, where understanding the material, the learning process, increasing student competence, and the perceived obstacles are different from face-to-face learning (Darsono et al., 2020). In comparison, previous research on online learning was carried out long before the Covid-19 pandemic and conveyed that student engagement is very important for students to succeed during the online learning process. (Dixson, 2015; Robinson & Hullinger, 2008). According to the National Survey of Student Engagement (NSSE) that has been carried out, the average student engagement in the online learning process is higher than in traditional learning. (Robinson & Hullinger, 2008).

Handelsman et al. (2005) Student engagement is the involvement of students in the overall learning process, where there are four aspects, including skill engagement, emotional engagement, participation engagement, and performance engagement, to show behavior, motivation, and commitment to learning. Dixson refers to Handelsman's theory et al., conveying student engagement (skills, emotional, participant, performance); students can be seen from the affective component and behavior of distance or online learning (Dixson, 2015). The fact that is happening today, the change in distance learning methods, is still a new thing to do for some educational institutions (Patricia Aguilera-Hermida, 2020) and causes stress among students, which results in a decrease in student engagement in the learning process. Based on the results of interviews with the Coordinator of the Guidance and Counseling Study Program regarding the needs analysis in the Guidance and Counseling Study Program, it turns out that student engagement or involvement in the online learning process is still not optimal because the available platforms are not optimal for use as a learning tool. Students are more likely to use social media than platforms for learning. In addition, the available modules are still lacking and seem monotonous, considering the limited platforms available. The modules used by lecturers and students are textbooks or modules containing the main material, quizzes, and assignments.

The main cause of the problem of not optimal student engagement in the Guidance and Counseling Study Program's learning process are four factors. The first factor is that students are still not actively involved in discussions in the available forums even though the Lecturer Team has optimally utilized the available platforms. For example, lecturers have provided modules as learning resources, assignments, and quizzes on the SIMARI e-learning platform. The second factor is that the material is still presented in modules, assignments, and quizzes. Therefore, it impacts the learning process that

involves students actively is not yet optimal. The third factor is that the available platforms are still rigid and monotonous. The e-learning platform model is still limited and unattractive and has not been integrated with social media, which can open up a space for students to discuss more openly related to the learning process or other discussions. The fourth factor is that the available modules are not yet interactive. As a result, students are less actively involved in exploring external learning resources, which allow them to be directly discussed. In line with the above, based on the results of the survey in Figure 1, it turns out that students also hope that the e-learning implemented can collaborate and be integrated with social media.

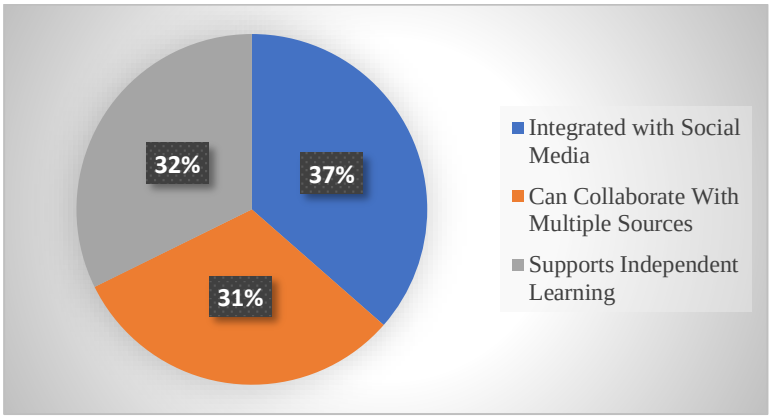

Figure 1. Students' expectations of the e-learning platform

Based on the analysis of the causes of the issues above, the proposed solution is to increase student involvement in the learning process of the Guidance and Counseling study program through the development of collaborative digital modules using the Zedemy Platform. This research also involves IT experts like the Zedemy platform development team. The benefits of this collaborative digital module are that it can provide educational services to the characteristics of students in the digital era who are accustomed to living in a technological environment.

METHODS

This research is a collaborative digital module development research through the *Zedemy* platform to increase student engagement in the learning process by adapting the ASSURE model. The preparation of this ASSURE-based module is expected to increase student activity or participation in online learning. The ASSURE, a learning design model, was initiated by Heinich et al., which Sharon E. Maldino later developed, et al. to date (Smaldino et al., 2012). Based on a theoretical study of the ASSURE module and learning design, the development of this module has the following stages:

Table 1. ASSURE-Based Learning Module

Stages	Description
1. Analyze learners	Analyze student potential and problems
2. State objectives	Determining Learning Objectives
3. Select methods, media, and materials,	Select and design methods, media, and materials.
4. Utilize media and materials	Using media and materials
5. Require learner participation	Engaging Student Response
6. Evaluate and revise	Validation, Evaluation, Revision, and Dissemination

The validity used in this study is content validity, which has two types: advanced validity and logical validity. Content validity used in this study is logical validity involving two experts on the media feasibility aspect and two on the material feasibility aspect. The increase in student engagement was measured before and after implementing the collaborative digital module through a Likert scale

questionnaire using the calculation of the paired sample t-test formula. Students who use collaborative digital modules are 77 Guidance and Counseling students from FKIP ULM

RESULTS

The collaborative digital module assessment data was converted to a scale of 4. The media expert questionnaire consisted of 29 questions, and the material expert questionnaire consisted of 27 statements.

Table 2. Media Expert's score interval

Score Interval	Category
> 88 to 116	Very Worthy
> 73 to 88	Worthy
> 58 to 73	Decent enough
29 to 58	Not feasible

Table 3. Media Expert Assessment Results

Aspect	Validation Results		
	Expert 1	Expert 2	Average
Screen Design Display	28	28	28
Ease of Use	19	21	20
Benefits	36	36	36
Graphics	24	24	24
Media Eligibility Score			**108**

Table 1 shows that the maximum score is 116, the minimum score is 29, and the average score for all aspects of the media in the collaborative digital module is 108 out of a maximum score of 116 (93.10%), including the very feasible category.

Table 4. Intermediate Expert score intervals

Interval Score	Category
> 82 to 108	Very Worthy
> 68 to 82	Worthy
> 54 to 68	Decent enough
27 to 54	Not feasible

Table 5. Media Expert Assessment Results

Aspect	Validation Results		
	Expert 1	Expert 2	Average
Content eligibility	47	46	46,5
Language	21	22	21,5
Presentation	30	28	29,0
Media Eligibility Score			**97,0**

Table 3 shows that the maximum score is 108, the minimum score is 27, and the average score of all aspects of the material in the collaborative digital module is 97 out of a maximum score of 108 (89.81%), including the very feasible category. The results of the analysis of the engagement of 77 students in participating in the lecture process using collaborative digital modules, the following data were obtained;

Table 5. Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre-test – Post-test	-18.623	2.122	.242	-19.105	-18.142	-77.028	76	.000

Based on descriptive statistical calculations by comparing the pre-test and post-test scores of each dimension of student involvement in lectures, it is known that overall, student engagement showed a very significant increase as indicated by the results of the t-test, obtained sig = 0.000. The mean of the pre-test was 55.35, and the post-test was 73.97. There is an increase in student engagement when using collaborative digital modules through the zedemy platform. The skill engagement dimension has a mean pre-test score of 21.43 and a post-test of 29.35 with a significance of 0.000 ($p<0.05$). The emotional dimension of engagement has a pre-test score of 55.35 and a post-test of 73.97 with a significance of 0.000 ($p<0.05$). The participation engagement dimension had a pre-test score of 13.99 and a post-test of 18.38 with a significance of 0.000 ($p<0.05$). Finally, the dimensions of performance engagement have a pre-test score of 7.31 and a post-test of 9.78 with a significance of 0.000 ($p<0.05$). It shows that the respondents in this study experienced increased engagement skills, emotional engagement, participation engagement, and performance engagement.

DISCUSSION

Following to evaluate of teaching materials contained in the guidelines for writing teaching materials by the Ministry of Education and Culture, to find out whether teaching materials are declared good and can be used in learning activities, based on the results of the assessment, collaborative digital teaching modules for Information Technology courses in Guidance and Counseling use the platform. *Zedemy* is one of the teaching modules suitable for the lecture process by lecturers and students of Guidance and Counseling FKIP ULM. The product here is in the form of a collaborative digital module, where student responses can be seen from their involvement in attending lectures with collaborative digital modules through the zedemy platform. Handelsman, Briggs, Sullivan, and Towler (2005) define student engagement as student participation in learning in terms of four dimensions: skill engagement, emotional engagement, participation engagement, and performance engagement.

In order to improve student learning success and achievement, student engagement is an important concern that cannot be avoided ((Johnson, 2008; Shernoff & Schmidt, 2008; Wang and Holcombe, 2010). Unfortunately, the number of students who feel bored when learning takes place, are not motivated, and are reluctant to be directly involved in lectures makes students detached from the academic and social aspects of the school environment. Handelsman, Briggs, Sullivan, dan Towler (2005) defines student engagement as student participation in learning in terms of four dimensions, namely skill engagement, emotional engagement, participation engagement, and performance engagement. Based on descriptive statistical calculations comparing pre-test and post-test scores of each dimension of student involvement in lectures, it is known that overall, student engagement showed a very significant increase. In addition, there is an increase in student engagement when using collaborative digital modules through the zedemy platform.

The involvement of students in the classroom by training certain behaviors related to the learning process in the skill engagement dimension. After students use collaborative digital modules through the zedemy platform, they appear to comply with behavioral norms, such as attendance and engagement and show no disruptive or negative behavior. In the dimension of emotional engagement, namely the emotional involvement of students with the material presented in class, students, after using collaborative digital modules through the zedemy platform, show affective reactions such as interest and enthusiasm in lectures. Enthusiastic in discussing and happy with the online learning process. Students with good emotional engagement will be personally interested in undergoing the learning

process; there is a feeling of pleasure, positive feedback, and a sense of belonging to the courses taken. The participation/interaction engagement dimension, which measures the extent of interaction between educators-students and students during class, shows that after students use collaborative digital modules through the zedemy platform, active participation is seen in discussions. They can collect assignments before the deadline. Finally, in the performance engagement dimension, which measures the extent to which students display their performance during class after students use collaborative digital modules through the zedemy platform, it can be seen that there is cognitive involvement of students in lectures. In addition, there are students' efforts to try to exceed requirements and enjoy challenges, and there is reciprocity from the given evaluation.

Student engagement in learning can illustrate the quality of students' cognitive, emotional, and behavioral reactions during learning, both inside and outside the classroom (Poskitt and Gibbs, 2010). The thing that makes student engagement an important concern is that student engagement is one of the main determining points in learning success (Wang & Holcombe, 2010; Fredricks, Filsecker & Lawson, 2016). Student engagement can be seen in the actions of students during the lecture. Enthusiastic, directed attitude in attending lectures, and persisting when given difficulties in the learning process according to Connell & Wellborn, on Handelsman, 2005. During lecture activities, students should be actively involved in all stages of the lectures given so that after the lecture process is complete, students can gain knowledge and skills as learning outputs needed to complete education, avoid dropping out, and achieve higher achievements. (Marks, 2000; Fredricks, Blumenfeld and Paris, 2004; Hirschfield and Gasper, 2011; Wang and Eccles, 2013). Using collaborative digital modules through the zedemy platform can increase student engagement in lectures in IT BK courses. The use of technology-based teaching materials is to the needs of today's Generation Z students, namely the technology literate generation. Suppose lecture teaching materials are presented based on technology. In that case, it can make students more enthusiastic with the emergence of active participation in discussions, paying attention to material explanations, doing assignments, and preparing themselves so that they can directly improve academic achievement.

CONCLUSION

The collaborative digital module for guidance and counseling information technology courses compiled on the zedemy platform has met the criteria to be used to increase student engagement in Guidance and Counseling FKIP ULM. The development of collaborative digital modules through the zedemy platform can be an alternative for the Guidance and Counseling study program of FKIP ULM in developing modules in other courses or applied to students who are still less actively involved in the lecture process. Collaborative digital modules on the zedemy platform can also be accessed in general so that other students from various study programs can actively participate in the lecture process as a form of embodiment of the independent campus program initiated by the Ministry of Education and Culture of the Republic of Indonesia.

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REFERENCES

Budhi, S. (2020). *Studi Sosial Lingkungan Lahan Basah*. Delivered anonymously at the Introduction to Wetland Environment Course. Lambung Mangkurat University.

Darsono, H., Fitri, A. N., Rahardjo, B., Imanuela, M. Z., Akuntansi, J., & Bandung, P. N. (2020). Efektivitas Pembelajaran Jarak Jauh saat Pandemi Covid-19 (Kajian di Politeknik Negeri Bandung). *Industrial Research Workshop and National Seminar*, 26–27. https://jurnal.polban.ac.id/proceeding/article/view/2190

Dixson, M. D. (2015). Measuring student engagement in the online course: the Online Student Engagement Scale (OSE). (Section II: Faculty Attitudes and Student Engagement)(Report). *Online Learning Journal (OLJ)*, *19*(4), 143. https://eric.ed.gov/?id=EJ1079585

Fredricks, J.A, Blumenfeld, P.C & Paris, A.H . (2004). *School engagement: potential of the concept, state of evidence. Review of Educational Research,* (74): 59-109 https://journals.sagepub.com/doi/abs/10.3102/00346543074001059

Fredricks, J. A., Filsecker, M. *Student engagement, Address in definition methodological instruction*, 43: 1-4. https://www.sciencedirect.com/science/article/pii/S0959475216300159

Handelsman, M. M., Briggs, W. L., Sullivan, N., & Towler, A. A. (2005). Measure of College Student Course Engagement. *Journal of Educational Research*, *98*(3), 184–192. https://doi.org/https://doi.org/10.3200/JOER.98.3.184-192

Harianto, S. P., & Dewi, B. S. (2017). *Buku Ajar Konservasi: Biodiversitas Fauna di Kawasan Budidaya Lahan Basah*. Universitas Lampung.

Hirschfield, P.J., & Gasper, J (2011). *The relationship between school engagement and delinquency in late childhood and early adolescene.* Journal of Youth and Adolescene, 40(1), 3-22. https://link.springer.com/article/10.1007/s10964-010-9579-5

Johnson, L. (2008). *Relationship of Instructional Methods to Student Engagement in Two Public High Schools.* American Secondary Education, 36.

Marks, H.M. (2000). *Student engagement in instructional activity: Patterns in the elementary, middle, and high school years.* American Education Research Journal, 153-184. https://journals.sagepub.com/doi/abs/10.3102/00028312037001153

Nurmala, M., Wibowo, T., & Rachmayanie, A. (2020). Tingkat Stres Mahasiswa Dalam Pembelajaran Online Pada Masa Pandemi Covid-19. *Jurnal Penelitian Bimbingan Dan Konseling*, *5*(2), 13–23. https://jurnal.untirta.ac.id/index.php/JPBK/article/view/10108

Patricia Aguilera-Hermida, A. (2020). *College students' use and acceptance of emergency online learning due to COVID-19.* International Journal of Educational Research Open, 1. https://doi.org/10.1016/j.ijedro.2020.100011

Poskitt, J., & Gibbs, R. (2010). *Student engagement in the middle years of schooling (Years 7-10): A literature review.* Literature Review. Report to the Ministry of Education (Evaluation Associates Ltd) (Massey University). https://nzcurriculum.tki.org.nz/content/download/4911/70679/file/940_Student%20Engagement.pdf

Robinson, C. C., & Hullinger, H. (2008). New Benchmarks in Higher Education: Student Engagement in Online Learning. *Journal of Education for Business*, *84*(2), 101–109. https://doi.org/https://doi.org/10.3200/JOEB.84.2.101-109

Sari, N. P., Setiawan, M. A., & Makaria, E. C. (2022). *Pengantar Bimbingan dan Konseling Komunitas Lahan Basah: Dari Visi Keilmuan Menuju Pusat Pengembangan*. Deepublish.

Shernoff, D. J., & Schmidt, J. A. (2008). *Further Evidence of an Engagement-Achievement Paradox Among U.S. High School Students.* Journal of Youth and Adolescence, 37(5), 564–580.

Smaldino, S. E., Russell, J. D., Heinich, R., & Molenda, M. (2012). *Instructional Media and Technologies for Learning (8th edition)*. Pearson Education.

Suharyanti, C., Wiedy, M., & Tutik, S. (2013). Pengaruh proses pembelajaran dan program kerja praktek terhadap pengembangan soft skill mahasiswa. *Jurnal FKIP Universitas Sebelas Maret*. https://jurnal.fkip.uns.ac.id/index.php/pap/article/view/2821

Sulistiyana, Rachmayanie, R., & Arsyad, M. (2021). *Pilar Tridarma Program Studi Bimbingan dan Konseling Universitas Lambung Mangkurat: Bimbingan dan Konseling Komunitas Lahan Basah*. Deepublish. https://www.google.com/books?hl=id&lr=&id=hRQxEAAAQBAJ&oi=fnd&pg=PP1&dq=Sulistiya

na,+Rachmayanie,+R.,+%26+Arsyad,+M.+(2021).+Pilar+Tridarma+Program+Studi+Bimbingan+dan+Konseling+Universitas+Lambung+Mangkurat:+Bimbingan+dan+Konseling+Komunitas+Lahan+Basah.+Deepublish&ots=UChEXMf34o&sig=bJnDmRoFYhd06vLphvvTLdacm-Q

Wang, M.T & Eccles, J.S. (2013). *School Context, Achievement Motivation, and Academic Engagement: A Longitudinal Study of School Engagement Using a Multidimensional Perspective.* Learning and Instruction, 28: 1223. https://www.sciencedirect.com/science/article/pii/S0959475213000327

Wang, M. T & Holcombe, R. (2010). *Adolescents' perceptions of school environment, engagement,and academic achievement in middle school*. American Educational Research Journal, 47, 633-662. https://journals.sagepub.com/doi/abs/10.3102/0002831209361209