

Developing a MOOC-Based System for Student Community Services Program (KKN) Preparation and Assessment UPN Veteran Yogyakarta

Eni Muryani*, Retno Hendariningrum, Laire Sukma Arti Suci,
Zacqy Mahendra Yudha Supriyanto, Wahyu Wulandari
Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia

Received : Sept 27, 2025

Revised : Sept 29, 2025

Accepted : Sept 29, 2025

Online : October 14, 2025

Abstract

The Student Community Services Program, that called Kuliah Kerja Nyata (KKN) is one of the community service activities that must be carried out by every university. Because of this, KKN participants need preparation before going directly to the KKN location. KKN preparation at UPN "Veteran" Yogyakarta, which is carried out online and uses several separate platforms, makes access, attendance recording, and information dissemination difficult. The study aims to identify the needs and experiences of KKN students through a questionnaire that will be used as a basis for developing a more effective and integrated preparation and examination system based on Massive Open Online Courses (MOOCs). The research method used is a quantitative descriptive method with qualitative analysis support for closed questions and thematic analysis methods for open questions. Data were collected through a questionnaire with 48 questions. The results of the study show that there are still some students who have limited internet access, which sometimes hinders their understanding of the material. 55% of students also want an integrated student preparation system, covering materials and modules, an attendance system, an examination system with automatic supervision, and answer evaluation to increase the credibility of the examination. This study hopes that the development of an integrated, effective, and credible KKN preparation and examination system can improve the quality of KKN students at UPN "Veteran" Yogyakarta.

Keywords: *Assessment Test, Community Services, Kkn, Mooc, Preparation,*

INTRODUCTION

Higher education institutions in Indonesia are required to implement the Tridharma Perguruan Tinggi (Three Pillars of Higher Education). In Permendikbud Ristek No. 53 of 2023, Tridharma Perguruan Tinggi or Tridharma is the obligation of higher education institutions to provide education, conduct research, and serve the community. One form of community service in higher education institutions is through *Kuliah Kerja Nyata* or KKN. This KKN activity serves as a platform for students to develop social and professional skills such as communication skills, enhance independence, gain work experience, and build self-confidence. KKN also functions as a vehicle for the application and development of science and technology conducted outside the campus under specific regulations and mechanisms. In addition to providing benefits for students through practical experience and skill enhancement, KKN also generates positive impact on the local communities by serving as a bridge between the academic world and the real world (Damayanti et al., 2024).

At the KKN location, students are required to be creative and innovative and have critical thinking skills in finding solutions to various problems in the village. A village can be defined as a settlement located outside the city where the residents work as farmers or cultivate crops in the

Copyright Holder:

© Eni, Retno, Laire, Zacqy & Wahyu. (2025)

Corresponding author's email: eni.muryani@upnyk.ac.id**This Article is Licensed Under:**

fields (Paputungan, 2023). Thus, several KKN student placements are directed to villages that have superior potential and can be developed, but whose communities still lack the skills and knowledge to process their natural resources. In villages, there are also several business units/UMKM that are still unproductive and underdeveloped, requiring knowledge and assistance to maximize their efforts. This poses a challenge for KKN student groups to transform the village's superior economic potential through community empowerment. Therefore, before students are deployed to KKN locations, they need to be equipped with training.

The student preparation is a presentation of material delivered by speakers who are experts in their fields, so that they can provide guidance to students in determining solutions that are appropriate for the community life at the KKN location. The student preparation for the 83rd batch of KKN students at UPN "Veteran" Yogyakarta was previously conducted online via multiple platforms such as Zoom and YouTube. Student preparation is an obligation that must be carried out for all KKN students. However, several problems arose with the previous online orientation system, such as separate orientation materials, manual attendance, orientation exams that were not conducted simultaneously at the same time thereby increasing the potential for cheating, and official information that was not conveyed properly. In addition, limited internet access in some areas and low student motivation also posed challenges to the orientation process. Previous studies have explored online learning systems such as MOOC systems, but they have not specifically addressed the needs of students in KKN preparation.

With the development of technology, an integrated online learning system can be a potential solution to address these problems and challenges. One possible solution is developing a system that is aligned with students' needs and conditions. With this system, KKN orientation and exams not only provide materials but also various features such as attendance, discussion forums, and more credible exams. This study aims to identify the needs and experiences of KKN students through a questionnaire. The data will be used as a basis for developing a more effective training and examination system for Massive Open Online Course (MOOC). With this system, it is hoped that the training can run more efficiently and easily.

LITERATURE REVIEW

Student Community Services Program or *Kuliah Kerja Nyata* (KKN)

The Student Community Services Program, that called *Kuliah Kerja Nyata* (KKN) can be defined as the implementation of community service activities carried out by higher education institutions. Article 1, paragraph 9 of Law of the Republic of Indonesia Number 12 of 2012 concerning Higher Education states that Tridharma is the obligation of higher education institutions to organize education, research, and community service. Referring to paragraph 11, community service is an activity of the academic community that utilizes science and technology to advance the welfare of society and educate the nation (Muniarty, 2021). Students are expected to be able to apply their theoretical knowledge in the form of community service and direct assistance to the community through real-world lectures. In addition, KKN also provides students with the skills to overcome and solve problems that occur in the community as a medium for learning to build interactions within the community. The KKN program is also an intraschool subject that must be taken by students in every undergraduate study program. This KKN activity is based on Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, Article 20 Paragraph 2, which states that: "Higher education institutions are obliged to organize education, research, and community service". Similarly, Article 24, Paragraph 2 states: "Higher education institutions have the autonomy to manage themselves as centers for higher education, scientific research, and community service" (BP-KKN, 2016 in Madya et al., 2023).

Kuliah Kerja Nyata (KKN) aims to empower communities. Community empowerment through the KKN program covers three main aspects, namely: (1) awareness, to foster awareness of the potential and capabilities of communities in improving their quality of life and facing challenges; (2) learning, through a continuous process between students and the community to form a learning society that is capable of preparing the next generation; and (3) mentoring, which is direct mentoring in various activities to encourage the achievement of justice and community welfare (Paputungan, 2023).

Student Preparation for KKN

Before students participating in the *Kuliah Kerja Nyata* (KKN) are assigned to their work locations, they need to be equipped with several materials that support the optimal implementation of the entire KKN program. This preparation is intended to provide an initial overview of the themes that will be addressed in the KKN activities. In addition, KKN preparation is intended to increase knowledge and skills, especially those related to village development issues. Through this preparation, students are expected to be able to identify and understand social issues, educational and learning issues, issues related to community life in villages, issues related to the management of potential, both natural and human resources, as well as find alternative solutions. (LPPM UPN "Veteran" Yogyakarta, 2025).

The stages of KKN student training are filled with material tailored to the needs of the program theme, namely, training in applied science in accordance with the respective disciplines of each student. Starting from general material, administrative material, social material, entrepreneurship material, special skills material, and KKN program management material. The Community Service Program (KKN) orientation activities are generally guided directly by competent resource persons. The orientation material covers various forms of community empowerment aimed at directing the community's mindset to be more adaptive and modern in facing the challenges of the times. Through this activity, it is hoped that there will be an increase in skills and entrepreneurial spirit in the community. It is hoped that the various topics presented by each resource person will receive a good response from the participants of the KKN preparation, as indicated by the fact that at the end of each session, several students asked questions about the activities during the community service program in each village determined by the KKN committee. With this orientation material, it is hoped that students will be able to implement the science and technology they have learned during their studies to the community (Paputungan, 2023).

Massive Open Online Course (MOOC)

MOOC (Massive Open Online Course) is an online learning method that has been widely used by internet users. Generally, this method can be applied for free. In principle, MOOC describes an online learning with a large number of participants obtained from open registration. MOOC not only provides admission administration services, but also in terms of content, design, access points, application procedures, and definition of success. MOOCs use documents, video recordings, and other methods to deliver material or training to an unlimited number of participants, accessible at any time (Rajagukguk, 2025). The use of MOOCs in Indonesia currently shows significant development, where MOOCs provide opportunities to provide flexible education to improve the quality of education and ease of learning accessibility, as in developing countries (Cahyani, 2025). In the learning process, there are many factors and obstacles in online learning activities with MOOCs that can influence participants' decisions to continue learning and maintain their activities in completing learning activities. The success of participants in the learning process is also greatly influenced by the usefulness and compatibility of the material with the participants' activities, ease of use, and the independence of participants in carrying out learning using MOOCs (Utami, 2024).

There are several characteristics of MOOCs as web-based or application-based online courses, namely that they are massive and can be taken by a very large number of participants. MOOCs are open and can be accessed and taken by anyone who wants to learn to improve their abilities. MOOCs can be taken online through various devices connected to the internet. MOOCs provide structured learning (Hidayat et al., 2023). Based on previous research by Billsberry (2024), there are indications of an increase in interest in academic research on MOOCs, which shows continued attention to reducing dropout rates and opportunities for participant engagement and interaction. According to Windhi (2024), MOOC-based online learning improves the learning process. MOOCs are also a manifestation of educational transformation in the era of society 5.0 (Agustina, 2023).

Integrating MOOCs into KKN Preparation

From the problems in the previous section, MOOCs can clearly reduce these problems. MOOCs can integrate the features in the KKN, such as the materials, attendance record, and exams, with an integrated system that can make the process of KKN preparation and examination system more efficient. A MOOC system consists of five key factors: instructor, learner, course, resource, and context. Instructors guide and simplify learning, while learners access courses built from diverse resources and contextual elements such as IT solutions, social networks, and communication systems. The integration of these factors enables large-scale, flexible learning, allowing students to gain knowledge anytime and anywhere, including the KKN activity (Azevedo et al., 2024).

RESEARCH METHOD

This study uses a quantitative descriptive method supported by qualitative analysis to answer open-ended questions. The quantitative descriptive method was chosen because it aims to describe existing conditions and patterns based on numerical data from closed questions. This approach is very appropriate for presenting an accurate picture through descriptive statistics such as frequency, percentage, and average without manipulating variables (Subhaktiyasa, 2025; Pandiangan, 2025).

Thematic analysis is used to process qualitative data from open-ended questions, enabling the identification and classification of key themes that emerge from respondents' narratives. This method helps to gain deeper insights and richer interpretations from non-numerical data, supporting contextual understanding that cannot be obtained from quantitative data alone. (Pandiangan, 2025)

The population in this study was students participating in the 83rd batch of *Kuliah Kerja Nyata* (KKN). Respondents were selected purposively as representatives who understood the study context and were able to provide accurate data. Data collection was conducted by distributing questionnaires to respondents online. Each respondent filled out the questionnaire according to their experiences and perceptions.

The research instrument used was a questionnaire consisting of 48 questions. Closed questions used a 1-5 Likert scale designed to measure the intensity or frequency of attitudes and behaviors. To enrich the data, there were several open-ended questions that allowed respondents to freely give their opinions or experiences.

Data analysis used descriptive statistics, including frequency, percentage, and mean to describe the distribution of respondents' answers. Meanwhile, qualitative data from open-ended questions were analyzed using thematic analysis to identify the main themes that emerged from the respondents' answers, thereby providing a richer picture of the phenomenon under study.

FINDINGS AND DISCUSSION

The results of the questionnaire distributed to previous KKN students showed that 71% of students used laptops as their main device for attending the student preparation. Laptops were more widely used because they have longer battery life and are less prone to overheating. Most students also stated that the internet access in their area of residence was stable, so there were no connection interruptions that could hinder student preparation. However, there were still some students who experienced connection problems, which impeded their learning process during the orientation. This shows that internet connection is very important in online orientation, so a system or application that can be used even with a limited internet connection is needed.

The results of the questionnaire data analysis show that 55% of students want a better training system, as shown in Figure 1. The integration of training material, attendance, and exams, as well as the dissemination of information on a single platform, is necessary to make it easier for students and to maximize the training provided. This is because in previous KKN training, information was delivered through different platforms, which increased the potential for misinformation. Students also emphasized the importance of an integrated discussion forum to minimize discrepancies in information shared via Zoom or Telegram and to facilitate interaction among students and the instructors.

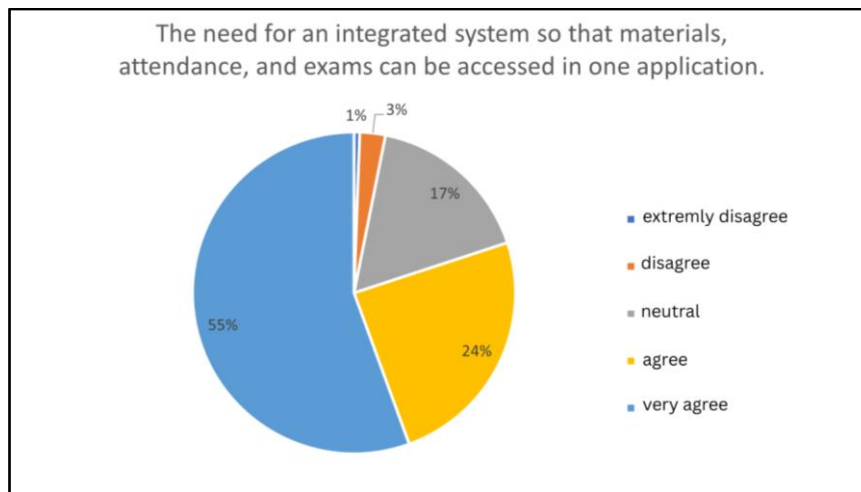


Figure 1. Diagram of Integrated Orientation System Requirements
(Source: Data Processing, 2025)

An evaluation of learning from previous student preparation showed that most students stated that a short quiz after the preparation could improve their understanding and make it easier for them to remember the material presented in Figure 2. In addition, students also wanted feedback and evaluation of their exam answers after they had completed the exam, so that they could identify their mistakes and the correct answers. This was also considered to increase the transparency of the KKN briefing exam. The implementation of randomized exam answers, time limits for exams, and automatic proctoring is also considered necessary to prevent cheating during the exam process.

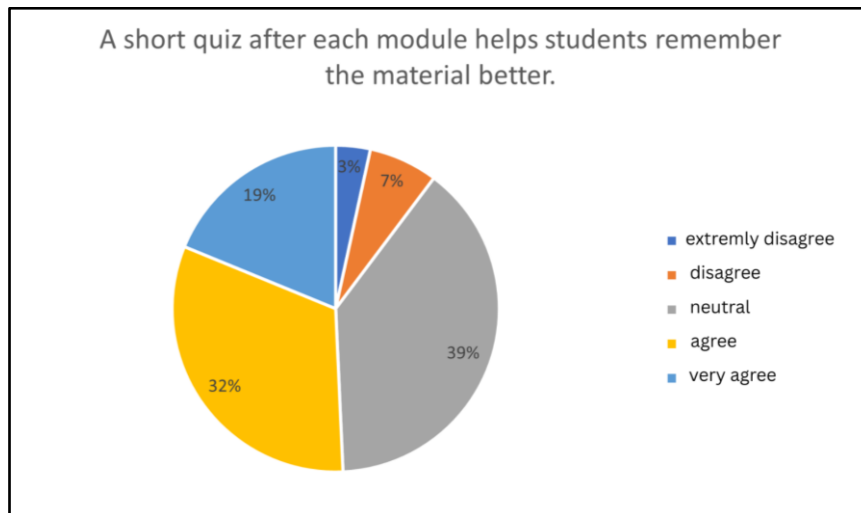


Figure 2. Quiz Requirements Diagram After Briefing
(Source: Data Processing, 2025)

Based on the needs and evaluations of the 83rd batch of KKN participants, there are several features that can be developed to support more effective training. First, training materials and modules that are systematically arranged from start to finish making them easier to review. Second, an online exam system with random questions and automatic monitoring, time limits, and feedback on answers for material evaluation. In addition, automatic attendance and an internal discussion forum that facilitates interaction between students and teaching staff are also expected to be available on the website that will be developed. An application or system that is easy to use with multiple devices and can be used with a limited internet connection is also needed. These integrated features are in line with the principles of MOOCs, which present flexible content, materials, and videos that can be accessed at any time by a large number of participants and support the independence of participants in carrying out their learning. This study contributes by examining specific MOOC features for student preparation before the KKN activity that responding to the real needs of students that have not been covered in previous KKN batches, and providing insights for developing a more credible and inclusive KKN preparation and examination system.

CONCLUSIONS

Based on the research objective to develop an efficient and participant-oriented KKN briefing and examination system, it can be concluded that the integrated KKN provision system based on MOOC principles has proven to be effective in improving the implementation of KKN. This system successfully integrates structured training materials and modules, online exams with automatic monitoring and randomized questions, automatic attendance, and internal discussion forums that facilitate effective interaction between students and teaching staff. Flexible access through various devices with limited internet connection support also increases the independence and comfort of participants in the learning process.

In practical terms, this system can serve as a reference for universities or institutions organizing community service programs to improve the quality of online training, encourage active student participation, and ensure transparency and accuracy in exam management. Based on the results and limitations of this study, it is recommended that further research be conducted by expanding the population and sample coverage to obtain a more comprehensive picture of the needs and constraints of online training. In addition, the development and evaluation of an integrated training platform that combines materials, attendance, exams, and discussion

forums is highly recommended to optimize the KKN training process. Research is also recommended to explore technical and non-technical factors such as student motivation and technology quality, as well as to test the effectiveness of automatic exam monitoring and question randomization features to improve the credibility of online exams.

LIMITATIONS & FURTHER RESEARCH

This study is limited to KKN students from UPN “Veteran” Yogyakarta, so the findings may not represent other universities. Data were collected through self-reported questionnaires, which may not fully capture students’ actual experiences. Moreover, the study focused on identifying system needs without testing the actual MOOC implementation.

Future research should involve broader samples, test the system’s effectiveness in improving learning outcomes, and explore technical and motivational factors affecting online KKN preparation.

REFERENCES

- Agustina, A., Aini, F. N., & Ranjani, R. (2023). Dampak transformasi pendidikan melalui “MOOCs” di era revolusi industri 5.0. *Dinamika: Jurnal Ilmiah Ilmu Administrasi Negara*, 10(1), 34–43. <https://doi.org/10.25157/dak.v10i1.9793>
- Azevedo, B., Pedro, A., & Dorotea, N. (2024). Massive open online courses in higher education institutions: The pedagogical model of the Instituto Superior Técnico. *Education Sciences*, 14(11), 1215. <https://doi.org/10.3390/educsci14111215>
- Billsberry, J., & Alony, I. (2023). The MOOC post-mortem: Bibliometric and systematic analyses of research on massive open online courses (MOOCs), 2009 to 2022. *Journal of Management Education*, 48(4), 634–670. <https://doi.org/10.1177/10525629231190840>
- Cahyani, A. M. D., Budi, E., & Rismawati, E. (2025, June). Tren massive open online course (MOOC) untuk pembelajaran daring di perguruan tinggi: Analisis bibliometrik (2015–2025). In *Prosiding Seminar Nasional Keguruan dan Pendidikan (SNKP)* (Vol. 3, pp. 158–166). <https://ejournal.ummuba.ac.id/index.php/SNKP/article/view/3171>
- Damayanti, A. I., Akbar, M. F. R., & Suparmi. (2024). Manfaat dan tantangan KKN sebagai wadah pengembangan diri dan pengabdian kepada masyarakat. *Jiic: Jurnal Intelek Insan Cendekia*, 1(10), 6676–6688. <https://jicnusantara.com/index.php/jiic>
- Hidayat, A., & Wibowo, M. W. S. (2023). Pengembangan media pembelajaran video berbasis massive offline online courses (MOOC) pada materi pelatihan analisa kredit mikro di PT. LKM Bogor 2021. *Jurnal Teknologi Pendidikan*, 12(1). <https://doi.org/10.32832/tek.pend.v12i1.9128>
- Madya, E. B., Nabilah, S., Bellasonya, R., Harahap, S. A., Siregar, A. R., & Nurhasanah, S. (2023). Peranan kuliah kerja nyata (KKN) sebagai bagian dari pengembangan kompetensi mahasiswa di Desa Bintang Meriah. *Modeling: Jurnal Program Studi PGMI*, 10(4), 355–369. <https://doi.org/10.69896/modeling.v10i4.1887>
- Muniarty, P., Wulandari, & Saputri, D. (2021). Peningkatan kompetensi mahasiswa melalui pembekalan kuliah kerja nyata tematik wira desa (KKNT-WD). *Dharma: Jurnal Pengabdian Masyarakat*, 2(1), 1–12. <https://doi.org/10.35309/dharma.v2i1.4709>
- Pandiangan, D. F., & Albina, M. (2025). Model dan tahapan penelitian kuantitatif: Pendekatan teoretis dan praktis dalam kajian pendidikan. *Jurnal Pendidikan Ihsan*, 3(3), 724–732. <https://doi.org/10.61104/ihsan.v3i3.1494>
- Paputungan, F. (2023). Implementasi KKN sebagai kegiatan pengabdian kepada masyarakat sesuai dengan bidang ilmu. *Journal of Education and Culture (JEaC)*, 3(1), 986–1012. <https://doi.org/10.47918/jeac.v3i1.1262>
- Rajagukguk, H. O., & Mayasari, L. I. (2025). Massive open online courses (MOOC) dalam proses

- digitalisasi pembelajaran di perguruan tinggi. *Didaktika: Jurnal Kependidikan*, 14(3), 5281–5294. <https://doi.org/10.58230/27454312.2374>
- Subhaktiyasa, P. G., Candrawati, S. A. K., Sumaryani, N. P., Sunita, N. W., & Syakur, A. (2025). Penerapan statistik deskriptif: Perspektif kuantitatif dan kualitatif. *Jurnal Edukasi Matematika dan Sains (JEMS)*, 14(1), 96–105. <https://doi.org/10.59672/emasains.v14i1.4450>
- Tim LPPM UPN “Veteran” Yogyakarta. (2025). *Buku pedoman program MBKM Kuliah Kerja Nyata Bela Negara UPN “Veteran” Yogyakarta*. Penerbit LPPM UPN “Veteran” Yogyakarta.
- Utami, R., & Mulyadi. (2024). Penggunaan MOOC sebagai media pembelajaran online: Peluang dan tantangan. *Jurnal Pembelajaran Inovatif*, 7(2), 49–56. <https://doi.org/10.21009/JPI.072.06>
- Windhi, R. A. (2024). *MOOC-based learning as a transformation of higher education in the era of Society 5.0*. *Journal of Educational Technology and Innovation*, 8(2), 112–125. <https://doi.org/10.5281/zenodo.10654231>