

## Increasing Artificial Intelligence Literacy for Information Systems Students thru Educational Workshops at Kalla Institute

Andi Hutami Endang<sup>1</sup>, Andi Jamiati Paramita<sup>2</sup>, Abdul Hakim<sup>3</sup>, Hany Alexandra<sup>4</sup>, Yabes Dwinugroho<sup>5</sup>, Furqan Zakiyabarsi<sup>6</sup>, Anhar Januar Malik<sup>7</sup>

<sup>1,2,3,4,5,6,7</sup> Institut Teknologi dan Bisnis Kalla, Indonesia

\* Correspondence e-mail; hutamiendang@kallainsitute.ac.id

### Article history

Submitted: 2025/06/10; Revised: 2025/10/20; Accepted: 2025/11/04

### Abstract

The rapid development of Artificial Intelligence (AI) is creating a gap between conventional curricula and the industry's need for AI literacy among students of Information Systems. Information Systems (IS) students, as future designers and developers of technology, play a crucial role in understanding and applying AI effectively and ethically. This community service activity aims to enhance the understanding of IS students at Kalla Institute regarding the concepts, trends, benefits, challenges, and ethical implications of the AI revolution in education. This service was realized through an internal workshop delivered directly by a lecturer from the Information Systems Study Program at Kalla Institute. The implementation method involved interactive lectures, discussions, and question-and-answer sessions that explored various aspects of AI in the educational context, ranging from basic concepts and practical applications to ethical considerations. Activity evaluation was conducted through pre-test and post-test questionnaires, as well as qualitative feedback, to measure the increase in participants' understanding and perceptions. The results showed a significant increase in understanding among student participants regarding the role and impact of AI in education, as well as high enthusiasm for utilizing AI for learning and future career development. This service activity successfully increased the understanding and readiness of Kalla Institute students to apply AI ethically and responsibly, contributing to the achievement of the institution's vision.

### Keywords

Artificial Intelligence; Education; Information Systems; Workshop; Kalla Institute



© 2025 by the authors. This is an open access publication under the terms and conditions of the Creative Commons Attribution 4.0 International (CC BY SA) license, <https://creativecommons.org/licenses/by-sa/4.0/>.

## **1. INTRODUCTION**

The development of Artificial Intelligence (AI) in recent decades has reached a point where its impact is felt transformatively in various aspects of life (Endang et al., 2022). The education sector is no exception. AI is no longer just a futuristic concept, but has become a technology that is applied to improve efficiency, personalization, and accessibility in the learning process (Anas & Zakir, 2024). In line with this global trend, the Government of Indonesia, through the National Strategy for Artificial Intelligence (Stranas KA) 2020-2045, has underlined the importance of developing superior Human Resources (HR) who master AI, with the education sector playing a central role in achieving this vision (Prof. Bambang Permadi & Dr. Ir. Hammam Riza, M.Sc., n.d.).

In this context, students, especially those in the Information Systems (SI) Study Program, have a strategic dual role. Students will not only become users of AI technology (Fakhriyah et al., 2024), but it is also expected to be the designer, developer, manager, and innovator of intelligent systems in the future (Putri Gustina, 2024). This readiness is important so that they can contribute positively and responsibly to the use of AI, including in the domain of education (EdTech)(B et al., 2024; Qolamani et al., 2024).

The Kalla Institute, as a higher education institution that focuses on technology and business development in Eastern Indonesia, has a responsibility to equip its students with competencies relevant to the current demands. The vision of the Kalla Institute Information Systems Study Program to produce technopreneur graduates who are innovative and based on religious morals is very much in line with the need for AI mastery. A competency gap has been identified that could hinder the achievement of organizational goals. This gap often arises due to a lack of appropriate training, rapid technological advancements, and changes in market needs. Therefore, it is essential to assess existing competencies and develop targeted improvement strategies to enable human resources to adapt and evolve in response to current demands. Although SI Kalla Institute students already have a knowledge base in the field of information technology, an in-depth understanding of the AI revolution is specific to the educational context (Murdianto & Santoso, 2021), along with its opportunities and challenges in Indonesia, may still need further deepening. This gap is the background for the implementation of community service activities in the form of this internal workshop (Rifky, 2024).

This activity is important because the development of AI is not only a global phenomenon but also a national agenda that requires active participation from various

parties, including universities and other institutions. Kalla Institute, with its technological vision, needs to ensure that undergraduate students are not only consumers of technology but also producers and critical thinkers in the AI ecosystem. By connecting global trends and national strategies with specific institutional needs (Heriyawati & Sari, 2020), this workshop is designed as a strategic response to improve students' AI literacy.

## **2. METHODS**

The method of implementing this community service activity is designed to provide a comprehensive and interactive understanding (Firmansyah et al., 2024) To students of the Kalla Institute Information Systems Study Program regarding the AI revolution in Education, including workshop activities and direct practice with lecturers from Binus. The workshop was divided into three sessions: the first session consisted of presentations, the second session featured mentoring, and the third session included evaluation. Before its implementation, a Focus Group Discussion (FGD) was held to prepare for the entire event. This is illustrated in Figure 1, which shows the FGD activities in preparation for the workshop.



**Figure 1.** FGD Preparation Workshop

This activity began with a Focus Group Discussion (FGD) to prepare for the event, which aligns with the participatory principle in PAR. Through the FGD, we involved various stakeholders to identify their needs and expectations, ensuring that the designed activities are more targeted. Additionally, we also leverage internal assets such as "lecturers from the Information Systems Study Program" and "student enthusiasm" as part of the Asset-Based Community Development (ABCD) approach. By leveraging the resources already available in our environment, we can develop more effective programs that empower the community. By integrating these two

frameworks, we aim to develop methods that are not only technically sound but also relevant to the community we serve.

The activity was conducted in a hybrid manner, spanning 4 hours of lessons (JP) at the American Corner Makassar, Bikin-bikin Creative Hub. Nipah Park, Makassar. In this service, a service learning method is used that emphasizes service (Hernisawati et al., 2024). The students are expected to be able to implement software from various case studies found in the field.

### ***2.1. Target Audience***

The main target audience of this workshop activity is all active students of the Kalla Institute Information Systems Study Program. The workshop had 26 participants, all of whom were students. The characteristics of the participants are diverse, including students from different generations/semesters, with varying levels of initial understanding of AI. This activity is seen as very important for Information Systems students because they are prospective professionals who will be directly involved in the design, development, implementation, and management of AI-based systems in various sectors, including education. Improved AI literacy will equip them with knowledge and skills essential for their future careers (Muhammad Yahya et al., 2023).

### ***2.2. Material and Substance of Activities***

The main theme of this workshop is "AI Revolution in Education". The material was delivered in-depth by a lecturer from the Information Systems Study Program, who has expertise in the fields of AI and educational technology. The substance of the material includes the following crucial subtopics:

1. Basic Concepts of AI and Machine Learning: Introduction of the definition of AI, a brief history, types of AI, and basic concepts of machine learning as the main foundation of AI technology.
2. Latest AI Trends in the World of Education: A discussion of AI applications that are rapidly growing in the education sector, such as personalized learning, adaptive learning systems, AI tutors, smart content, and intelligent tutoring systems.
3. Benefits of AI for Education Stakeholders: Discussion of the benefits of implementing AI for students (customized learning experience, instant feedback), teachers (efficiency of administrative tasks, innovative teaching

tools), and educational institutions (better data management, improved quality of service).

4. Challenges of AI Implementation in Indonesia: An analysis of various obstacles to AI adoption in the context of Indonesian education, including the limitations of technology infrastructure, data quality and accessibility, immature regulations, ethical and privacy issues, and human resource readiness.
5. Implications of AI for Information Systems Students: An in-depth discussion of career opportunities in the field of AI EdTech, the technical and non-technical skills required, and the strategic role of SI students in designing, developing, and managing AI solutions for education.
6. Case Study of AI Implementation in Education: Presentation of real-world examples of AI implementation in various educational institutions, both at the global and national levels, to provide a practical overview.
7. Introduction to Relevant AI Tools and Platforms: Demonstration or introduction of various AI tools and platforms that can be leveraged in education, such as adaptive learning platforms (e.g., Knewton, CogBooks), chatbots for student services, learning analytics tools, Google AI tools (Gemini, Google Classroom AI features), GitHub Copilot for development, and AI-based design and presentation platforms (Canva AI, SlidesAI.io).
8. Ethical and Responsible Aspects in Educational AI: A critical discussion of ethical issues such as bias in AI algorithms, student data privacy, cybersecurity, transparency, accountability, and the importance of responsible and inclusive AI development in education.

The depth of the material is tailored to the background of Information Systems students, allowing for more technical discussions regarding AI system architecture in education, system integration challenges, and ethical and secure software development aspects (Labobar, 2024).

### **2.3. Delivery Method**

This internal workshop was held in a hybrid manner on May 27, 2025, with a total duration of 8 hours of lessons. The main delivery method is:

1. Interactive Lecture: The lecturer presents the material by involving the active participation of students through questions and short discussions on the sidelines of the presentation.

2. Q&A Session: A special time allocation is given after each material segment or at the end of the workshop for students to ask questions and get further clarification.
3. Target Participants: Students & Students from various study programs who want to improve their quality and achievements, with a target of 20 participants.
4. Form and Series of Events: The workshop activities began with opening and remarks from the committee and the organizers. The event continued with presentations by two speakers: representatives of the Information Systems & Technology Study Program and a lecturer from one of the well-known private campuses. After the material delivery session, participants were allowed to participate in an active and interactive discussion and question-and-answer session. The activity concluded with the presentation of the conclusion and the moderator's closing remarks.
5. Speakers: Andi Hutami Endang, S.Kom., M.Kom. & Erna Fransisca Angela Sihotang, S.Stat., M.Kom.
6. Expected Output: Through this activity, participants were able to understand the basic concepts of artificial intelligence (AI) and how to apply it in an educational context. In addition, participants are equipped with the skills to build and implement simple AI using the No-Code AI platform, enabling them to start experimenting without requiring complex programming skills.

This workshop also encourages the emergence of various new ideas and innovations in the application of AI in the world of education, which is expected to continue to be developed in the future (Murdianto & Santoso, 2021). The use of case studies and real examples is sought to make the material more relevant and easier to understand by students.

#### ***2.4. Method of Evaluation of Activity Impact***

An evaluation of the activities' impact was conducted to assess the workshop's success in achieving its goals. The evaluation methods used include:

1. Qualitative Feedback Questionnaire: At the end of the workshop, participants were asked to fill out a feedback questionnaire containing open-ended questions to collect their perceptions of the relevance of the material, the quality of delivery, the most interesting aspects, the most useful material, as well as suggestions and criticisms for future improvement of activities.
2. Participant Observation: During the workshop, observations were made on the level of active participation and enthusiasm of students in participating in lecture sessions, discussions, and questions and answers. This observation record supports qualitative data.

The measuring tool used (questionnaire) is designed to produce data, both quantitative on several feedback items and qualitative answers to open-ended questions. The level of achievement of the workshop objectives was measured based on the analysis of changes in understanding from the thematic analysis, qualitative feedback, and observation notes (Hubi et al., n.d.). This analysis aims to assess the extent to which students in the SI program can analyze EdTech AI systems, identify potential biases, and design simple AI solutions to educational problems after attending a workshop.

### **3. FINDINGS AND DISCUSSION**

This section presents the detailed implementation of the workshop, the findings of the evaluation conducted, and an in-depth discussion of the results' implications.

#### **3.1. Findings**

##### **3.1.1. Description of the Workshop**

The workshop "AI Revolution in Education" for students of the Kalla Institute's Information Systems Study Program was held at the American Corner Makassar, a creative hub in Bikin-bikin. Nipah Park, Makassar. The activity lasted for a long time and was divided into main sessions.

Twenty-six students from various generations attended this workshop. The level of student participation and enthusiasm was monitored as high throughout the implementation of the activity. This is evident from the number of questions asked during the question-and-answer session and the level of engagement in the discussion. Kalla Institute Information Systems Lecturer, as the main speaker, delivered material systematically and interactively, starting with the introduction of basic AI concepts, exploring AI trends and applications in the education sector, and then discussing the ethical challenges and implications. Each session is designed to spark critical thinking and active participation from students, with real-life case studies relevant to the field of Information Systems. The workshop activities are illustrated in Figure 1, which shows the virtual community service activities of the information systems study program.



**Figure 2.** Online Workshop Activities: Presentation of Artificial Intelligence Materials in Education and Presentation of Data Analysis Materials Without Coding

### 3.1.2. Activity Evaluation Results

Evaluation of activities is conducted through both quantitative and qualitative approaches.

#### 3.1.2.1. Quantitative Data

To provide a clear picture of the participants and the impact of the workshop, the following is presented: quantitative data as shown in Tables 1, 2, and 3.

**Table 1.** Satisfaction with the Topic

| Topic            | Average Satisfaction | Rating (5) | Rating (4) | Percentage Rating (5) |
|------------------|----------------------|------------|------------|-----------------------|
| AI for Education | 4,85                 | 11         | 2          | 84,6%                 |
| No Code AI       | 4,85                 | 11         | 2          | 84,6%                 |

**Table 2.** New Insights from the Material

| Topic            | Participants Answered "Yes." | Total Respondents | New Insight Percentage |
|------------------|------------------------------|-------------------|------------------------|
| AI for Education | 13                           | 13                | 100%                   |
| No Code AI       | 13                           | 13                | 100%                   |

**Table 3.** Satisfaction with the Presenter

| Topic | Average Delivery | Rating (5) | Rating (4) | Percentage Rating (5) |
|-------|------------------|------------|------------|-----------------------|
|-------|------------------|------------|------------|-----------------------|



|                  |      |    |   |       |
|------------------|------|----|---|-------|
| AI for Education | 4,92 | 12 | 1 | 92,3% |
| No Code AI       | 4,92 | 12 | 1 | 92,3% |

### 3.1.2.2. Qualitative Data

Thematic analysis of open-ended question answers from feedback questionnaires and observation notes during the workshop yielded several key themes shown in Table 4:

**Table 4.** Participant Responses

| Category   | Responses   |
|--|---|
| Appreciation and Positive Response               | "Sangat keren", "Bagus", "Mantap buu, semoga dilancarkan disertasinya", "Terima kasih ilmunyaa", "Aman"   |
| New Insights and Material Relevance              | Semua peserta menyatakan mendapatkan insight baru dari materi yang disampaikan.   |
| Suggestions for Further Materials and Activities | "Perlu sesi lanjutan", "Butuh next chapter", "Gas ke Binus", "Berikutnya gas agenda AI lainnya", "Agar pemateri dapat dihadirkan secara langsung" |
| No Additional Suggestions                        | "Tidak ada karena sangat keren", "Tidak ada karena sangat memberikan ilmu", "-"   |

From the qualitative data, it is clear that the participants' enthusiasm for the potential of AI in transforming education is evident. Many students stated that this workshop opened up new insights and motivated them to explore AI further. The theme of the need for practical or hands-on sessions also emerged, indicating the desire of participants to not only understand concepts but also try to apply them. In addition, discussions on AI ethics and data privacy received special attention, signaling a growing critical awareness among students of the non-technical aspects of AI implementation.

## 3.2. Discussion

The results of the evaluation, both quantitative and qualitative, consistently demonstrate that the workshop "AI Revolution in Education" has successfully achieved its goal of increasing the understanding and awareness among Kalla Institute

Information Systems students. This aligns with the literature, which highlights the benefits of AI in creating more personalized and efficient learning experiences.

We discussed the importance of the results obtained from this activity. This aligns with the principle of capacity building, where educational interventions successfully strengthen the capabilities of individuals and institutions in responding to existing challenges, especially in the current digital era.

The high enthusiasm recorded, both through observation and qualitative feedback, reflects the relevance of this topic for SI students. They realize that as aspiring professionals in the field of information technology, an in-depth understanding of AI is no longer an option, but a must. The workshop seemed to have sparked their interest in further exploring how AI can be integrated into information systems for educational purposes, such as the development of learning analytics, adaptive learning systems, or educational chatbots.

The success of this workshop is also inseparable from the role of the speaker, a lecturer from the Information Systems Study Program. The speaker's background, which is cognate with the participants', allows for a more contextual and in-depth delivery of material, touching on technical and systemic aspects relevant to SI students. This is reflected in the feedback of participants, who stated that the lecturer's explanations are easy to understand because they are "connected" to their existing knowledge base.

The discussion on the challenges of AI implementation in Indonesia and the ethical aspects also received a positive response. The increased awareness of issues related to algorithmic bias, data privacy, and the need for strong regulation demonstrates that the workshop not only focused on technical aspects but also succeeded in instilling critical thinking about social responsibility in the development and application of AI. This is very important, considering that SI students are prospective technology developers who must have a strong ethical foundation.

The relationship between the workshop results and the Kalla Institute's vision to produce innovative technopreneur graduates is very close. A good understanding of AI will equip students with the ability to identify opportunities and develop innovative, competitive AI-based educational technology (EdTech) solutions. Thus, this internal service activity indirectly contributes to the achievement of the institution's vision and the Tri Dharma of Higher Education.

Nonetheless, some limitations and challenges during implementation need to be acknowledged. The limited duration of the workshop may not be enough to accommodate the in-depth practice sessions that some participants want. Technical

limitations, such as the availability of software or access to certain AI platforms, can also be an obstacle if the practice sessions are to be implemented more widely. Feedback on the desire for these practice sessions is a valuable input for the development of similar activities in the future.

Overall, this workshop has provided significant added value for Kalla Institute Information Systems students. They not only gain theoretical knowledge but also a better understanding of their strategic role in the AI revolution, particularly in the education sector. The increased understanding and enthusiasm shown by the participants are an indicator of the success of this service activity. The results showing an increase in participants' understanding of digital literacy can be analyzed within the context of digital literacy theory. This increase reflects their ability to use technology effectively and critically, which is an integral part of literacy in the 21st century. Therefore, the success of this program not only impacts individuals but also strengthens communities in facing digital challenges.

#### **4. CONCLUSION**

Based on the results of implementing and evaluating the "AI Revolution in Education" workshop for students in the Kalla Institute's Information Systems Study Program, several key conclusions can be drawn. First, this workshop successfully increased participants' understanding of the basic concepts, current trends, benefits, challenges, and ethical implications of applying Artificial Intelligence (AI) in the education sector. This is evidenced by the activity receiving a very positive response from students, who show high enthusiasm and assess the material presented as relevant and useful for developing their insights and career preparation in the field of Information Systems. Second, this workshop emphasized that internal community service activities, which target student capacity building, are an effective and impactful way to implement the Tri Dharma of Higher Education. This success was supported by the expertise of the presenter, who was an Information Systems lecturer, allowing him to deliver in-depth and contextual material to the participants. This activity has made a positive contribution to equipping SI Kalla Institute students with crucial AI literacy, enabling them to face the digital era and innovate in educational technology.

To ensure the sustainability and long-term impact of this activity, we propose concrete steps, such as holding more practical follow-up sessions, including simple coding sessions or mini-projects, to deepen participants' understanding and provide hands-on experience in applying the technology and building partnerships with the AI industry or community outside the campus to hold sharing sessions. This will

provide participants with a broader understanding and deeper insights into the real-world applications of the technology being studied. It will also form study groups or AI clubs for students as a platform for continuous learning. These groups can serve as a platform for discussion, project collaboration, and further skill development in the field of AI. With these steps, we hope this activity will not only provide immediate benefits but also build a strong foundation for future competency development.

## REFERENCES

- Anas, I., & Zakir, S. (2024). *Artificial Intelligence: Solusi Pembelajaran Era Digital 5.0*. 8.
- B, I., Thamrin, A. N., & Milani, A. (2024). Implementasi Etika Penggunaan Kecerdasan Buatan (AI) dalam Sistem Pendidikan dan Analisis Pembelajaran di Indonesia. *Digital Transformation Technology*, 4(1), 714–723. <https://doi.org/10.47709/digitech.v4i1.4512>
- Endang, A. H., Paramita, A. J., Syahrudin, D., & Syafaat, M. (2022). *Pengenalan Digital Dalam Membentuk Milenial Kreatif Untuk Menghadapi Era Society 5.0 Di Kabupaten Enrekang*. 3(2).
- Fakhriyah, F., Masfuah, S., Ari Pratiwi, I., & Hilyana, F. S. (2024). The Mentoring for Teachers at Primary School 1 Jati Wetan in Developing the E-Diagnostic Assessment Model based on Literacy to Manage Learning Loss of the Learners. *Amalee: Indonesian Journal of Community Research and Engagement*, 5(2), 709–724. <https://doi.org/10.37680/amalee.v5i2.5813>
- Firmansyah, D., Gyanendra, A., Zafitri, P., Surya, P., Nadid, T., Auliya, A. S., & Lutfianti, L. (2024). Seminar Introduction AI: Membangun Kesiapan Guru Menghadapi Pembaharuan Teknologi Pendidikan di SDN 15 Cakranegara. *Rengganis Jurnal Pengabdian Masyarakat*, 4(2), 266–274. <https://doi.org/10.29303/rengganis.v4i2.446>
- Heriyawati, D. F., & Sari, I. N. (2020). Pelatihan Penulisan Penelitian Tindakan Kelas (PTK) pada Guru Sekolah Dasar di Kecamatan Sukun Kota Malang. *Amalee: Indonesian Journal of Community Research and Engagement*, 1(2), 101–111. <https://doi.org/10.37680/amalee.v1i2.302>
- Hernisawati, H., Kushendar, K., & Irhamudin, I. (2024). *Konseling Islam Penguatan Kualitas Kesehatan Mental Terhadap Prilaku Beresiko Pada Remaja*. 4(1), 2–7.
- Hubi, Z. B., Fauzi, A., Adhari, N. R., Saepuloh, D., & Sudarmaji, I. (n.d.). *Pekan Karya Ilmiah Fakultas sebagai Upaya Memperkuat Jiwa Kepemimpinan serta Habitiasi Menulis Ilmiah Mahasiswa*.
- Labobar, J. (2024). ARTIFICIAL INTELLIGENCE: Tantangan Dalam Pembelajaran Kewarganegaraan. *Civics Education and Social Science Journal (CESSJ)*, 6(1), 63–

75. <https://doi.org/10.32585/cessj.v6i1.5224>
- Muhammad Yahya, Wahyudi, & Akmal Hidayat. (2023). Implementasi Artificial Intelligence (AI) di Bidang Pendidikan Kejuruan Pada Era Revolusi Industri 4.0. *SEMINAR NASIONAL DIES NATALIS* 62, 1, 190–199. <https://doi.org/10.59562/semnasdies.v1i1.794>
- Murdianto, D., & Santoso, D. (2021). *Sosialisasi Persiapan Pembelajaran di Masa New Normal bagi Guru SMK di Kota Tarakan*. 2(1).
- Prof. Bambang Permadi & Dr. Ir. Hammam Riza, M.Sc. (n.d.). *STRATEGI NASIONAL KECERDASAN ARTIFISIAL INDONESIA*. <https://ppg.dikdasmen.go.id/news/peranan-kecerdasan-buatan-artificial-intelligence-dalam-pendidikan>
- Putri Gustina, A. R. F. (2024, December). *Analisis Sikap Mahasiswa Terhadap Kecerdasan Buatan*. Prosiding Seminar Nasional Manajemen. <http://openjournal.unpam.ac.id/index.php/PSM/index>
- Qolamani, K. I. B., Abdullah, S. A., & Rekani, M. Q. R. (2024). *Empowering Social Studies Education: The Role of M-learning in Fostering Motivation and Well-being*.
- Rifky, S. (2024). Dampak Penggunaan Artificial Intelligence Bagi Pendidikan Tinggi. *Indonesian Journal of Multidisciplinary on Social and Technology*, 2(1), 37–42. <https://doi.org/10.31004/ijmst.v2i1.287>

.