



Indonesian Journal of Educational Research and Technology

Journal homepage: <http://ejournal.upi.edu/index.php/IJERT/>



Enhancing University Grant Disbursement Systems for Educational Accountability and Sustainable Development Goals (SDGs)

*Natpaphat Chanchaivong, Montree Wongsapan, Jiraporn Chano**

Maharakham University, Maharakham, Thailand

*Correspondence: E-mail: jiraporn.j@msu.ac.th

ABSTRACT

This study aimed to explore existing challenges and propose strategic improvements for grant disbursement systems within a university educational context. A descriptive approach was used, employing a questionnaire comprising Likert-scale and open-ended items to gather data from participants engaged with the finance office. The findings showed recurring issues in communication, procedural complexity, and limited digital infrastructure. Respondents expressed moderate understanding of financial regulations, with significant delays caused by unclear processes and fragmented information flow. Because inefficient financial operations hinder timely project implementation and academic outcomes, the study recommends systemic enhancements such as streamlined procedures, online consulting tools, and an integrated tracking system. These interventions support transparent, responsive, and equitable resource management aligned with the objectives of Sustainable Development Goals (SDGs), which are SDG 4 (Quality Education) and SDG 16 (Peace, Justice, and Strong Institutions).

ARTICLE INFO

Article History:

Submitted/Received 12 Apr 2025

First Revised 15 May 2025

Accepted 17 Jul 2025

First Available online 18 Jul 2025

Publication Date 01 Dec 2025

Keyword:

*Educational management,
Financial accountability,
Grant Disbursement,
SDG 4,
SDG 16.*

1. INTRODUCTION

In the current landscape of higher education, effective financial management is a core enabler for educational quality, institutional sustainability, and public accountability. Among various financial operations, the disbursement of grant subsidies plays a pivotal role in supporting teaching, research, and community-based projects (Prasojo et al., 2025). It serves as the backbone for academic programming and innovation, especially in faculties with diverse and dynamic educational missions such as the Faculty of Education. Yet, while regulations governing disbursements are designed to ensure fiscal discipline and transparency, their actual implementation often results in unintended administrative burdens. These include procedural delays, fragmented communication, and inefficiencies in documentation, all of which obstruct timely project execution and reduce institutional effectiveness (Farida et al., 2024; Bolaji et al., 2023; Wanjara & Ogembo, 2024).

The challenges of grant disbursement in university contexts are compounded by rapid transformations in educational delivery, increased emphasis on digital integration, and the growing complexity of funding mechanisms. For education systems to function effectively in the 21st century, particularly under the framework of Sustainable Development Goal (SDG) no 4 (ensuring inclusive and equitable quality education), financial systems must also become inclusive, adaptable, and transparent. Equally, SDG 16 advocates for strong institutions, requiring higher education finance units to operate with integrity, transparency, and accessibility (Ragadhita et al., 2026; Maryanti et al., 2022). These ideals, however, can only be realized when administrative mechanisms, such as disbursement systems, are aligned with user needs and evolving educational models.

At the Faculty of Education, Mahasarakham University, grant subsidies are essential for supporting pedagogical innovation, teacher development, curriculum design, and action-based research. These functions are directly tied to the development of future educators and the fulfillment of institutional mandates. However, operational data and user feedback suggest that the financial disbursement process is encumbered by several systemic obstacles. These include a lack of clarity in regulation dissemination, insufficient knowledge sharing among stakeholders, a lack of standard operating procedures (SOPs), and the absence of a real-time information system to monitor disbursement progress. In particular, stakeholders such as lecturers and administrative staff have reported inconsistencies in communication, rigid procedural frameworks, and time-intensive document handling, which create administrative fatigue and discourage participation in university-led projects.

In this context, the concept of *financial pedagogical alignment* becomes critical, a framework in which financial services in an academic setting are restructured to support, rather than hinder, educational objectives. The alignment requires understanding the role of finance not only as a compliance mechanism but also as a service unit contributing to educational impact. It also suggests that finance departments in universities must evolve beyond transactional roles and move toward proactive support systems that are digitally enabled, user-oriented, and integrated into the larger pedagogical ecosystem. This evolution demands capacity building, system reform, and the design of digital tools that reflect the actual workflows of educational project implementation (Sakti et al., 2024).

Digital transformation in education, particularly in administrative systems, has emerged as a global priority (Al Husaeni et al., 2024). The COVID-19 pandemic accelerated this shift, revealing both the strengths and vulnerabilities of digital infrastructure in educational institutions. While much attention has been paid to e-learning platforms and virtual classrooms, the back-end systems that support operations (such as budgeting, procurement, and disbursement) have

lagged in innovation. This disjuncture is problematic, as the efficiency of front-line teaching and research is often constrained by outdated administrative practices. The lack of integrated financial platforms, for instance, has led to miscommunication, duplicated processes, and project delays. Moreover, without robust tracking systems, institutions are unable to monitor the status of disbursement requests, making accountability and feedback loops difficult to maintain.

Several studies reinforce this institutional gap. Adebayo and Ochayi (2022) highlights that rigid regulations in government disbursement systems result in procedural bottlenecks, while Ademilua and Halisu (2022) points out the lack of synchronization in financial service delivery across departments in Thai public universities. These issues, when left unaddressed, create both compliance risks and user dissatisfaction. Therefore, there is a growing need for universities to modernize their financial workflows in line with best practices in public sector innovation, digital governance, and user-centered service design. Specifically, the development of online consultation platforms, document tracking dashboards, and automated verification tools can significantly enhance performance. These tools not only improve service quality but also empower academic personnel by reducing cognitive and operational burdens. Moreover, the participation of faculty members in training related to financial regulations remains limited. Without ongoing education and cross-unit dialogue, misinterpretations persist, leading to repeated corrections, project delays, and inconsistent understanding of regulatory changes. These issues emphasize the importance of knowledge management and proactive communication within the institution. By embedding communication systems (such as visual SOP guides, financial FAQs, and dedicated support clinics), universities can build a culture of shared responsibility and collaborative compliance.

To address these gaps, a structured diagnostic and design process is required. Universities must begin by identifying the pain points within their financial systems through stakeholder surveys and workflow audits. These findings should inform the development of action plans that include both technological interventions and human-centered reforms. Importantly, reform strategies should not solely focus on efficiency but also on values such as equity, trust, and accessibility—all of which underpin the SDGs. This research, therefore, seeks to examine the existing problems in the grant disbursement process at the Faculty of Education and to propose development guidelines that reflect institutional needs and global governance standards. The study is unique in its integration of educational management, public administration, and sustainable development principles. By doing so, it contributes to the discourse on financial accountability in education and presents a model for adaptive system reform in higher education institutions. The results of this study are expected to inform institutional decision-making, foster trust between administrative units and academic staff, and serve as a practical reference for similar reforms in other educational contexts.

The objectives of this study are twofold: first, to examine the problems currently encountered in the grant disbursement services of the Faculty of Education, and second, to develop strategic and sustainable improvement guidelines to enhance the system's responsiveness, transparency, and alignment with educational goals. The novelty of the study lies in its combination of service user experience, regulatory analysis, and system design under the lens of SDGs, offering an evidence-based blueprint for institutional improvement. This adds new information regarding SDGs, as reported elsewhere (Ragadhita *et al.*, 2026).

Table 1. Previous studies on SDGs.

No	Title	Reference
1	Low-carbon food consumption for solving climate change mitigation: Literature review with bibliometric and simple calculation application for cultivating sustainability consciousness in facing sustainable development goals (SDGs)	Nurramadhani et al. (2024)
2	Towards sustainable wind energy: A systematic review of airfoil and blade technologies over the past 25 years for supporting sustainable development goals (SDGs)	Krishnan et al. (2024)
3	Assessment of student awareness and application of eco-friendly curriculum and technologies in Indonesian higher education for supporting sustainable development goals (SDGs): A case study on environmental challenges	Djirong et al. (2024)
4	Effect of substrate and water on cultivation of Sumba seaworm (nyale) and experimental practicum design for improving critical and creative thinking skills of prospective science teacher in biology and supporting sustainable development goals (SDGs)	Kerans et al. (2024)
5	Smart learning as transformative impact of technology: A paradigm for accomplishing sustainable development goals (SDGs) in education	Makinde et al. (2024)
6	The relationship of vocational education skills in agribusiness processing agricultural products in achieving sustainable development goals (SDGs)	Gemil et al. (2024)
7	The influence of environmentally friendly packaging on consumer interest in implementing zero waste in the food industry to meet sustainable development goals (SDGs) needs	Haq et al. (2024)
8	Sustainable packaging: Bioplastics as a low-carbon future step for the sustainable development goals (SDGs)	Basnur et al. (2024)
9	Implementation of Sustainable Development Goals (SDG) no. 12: Responsible production and consumption by optimizing lemon commodities and community empowerment to reduce household waste	Maulana et al. (2023)
10	Analysis of the application of Mediterranean diet patterns on sustainability to support the achievement of sustainable development goals (SDGs): Zero hunger, good health and well beings, responsible consumption, and production	Nurnabila et al. (2023)
11	Efforts to improve sustainable development goals (SDGs) through education on diversification of food using infographic: Animal and vegetable protein	Awalussillmi et al. (2023)
12	Safe food treatment technology: The key to realizing the Sustainable Development Goals (SDGs) zero hunger and optimal health	Rahmah et al. (2024)
13	Analysis of student's awareness of sustainable diet in reducing carbon footprint to support Sustainable Development Goals (SDGs) 2030	Keisyafa et al. (2024)

2. METHODS

This study employed a descriptive research design to examine the problems in grant disbursement and propose development guidelines for the subsidy disbursement system within the Faculty of Education. A survey approach was selected to collect both quantitative and qualitative data from individuals who had experience interacting with the finance and accounting department. The research aimed to understand user experiences, procedural issues, and improvement needs, particularly in the context of administrative services that support educational projects.

2.1. Population and Sample

The population in this study included lecturers, staff, and students from the Faculty of Education at Mahasarakham University. The sample was selected using a purposive technique, focusing on individuals who had previously contacted or engaged with the faculty's finance office for project-related disbursement services.

2.2. Data Collection Instrument

The primary data collection tool was a structured questionnaire developed by the researchers based on relevant financial management literature and regulatory frameworks. The instrument comprised two parts:

- (i) Part I focused on the demographic and general background of the respondents, including gender, age, position, and frequency of interaction with the finance office.
- (ii) Part II contained Likert-scale and open-ended questions addressing three main components: disbursement regulations, disbursement processes and procedures, and financial officer services.

2.3. Data Collection Procedure

Quantitative data were collected using Likert-scale questions to assess perceptions regarding procedural clarity, system accessibility, and regulation understanding. Qualitative data were obtained from open-ended responses concerning difficulties experienced and suggestions for improvement. All responses were collected anonymously and analyzed systematically.

2.4. Data Analysis

The analysis was divided into three parts:

- (i) Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to analyze respondent characteristics and usage patterns of financial services.
- (ii) Quantitative data regarding disbursement problems were interpreted to identify common issues and trends across regulation, procedure, and service dimensions.
- (iii) Qualitative content analysis was applied to open-ended responses to extract thematic insights on perceived obstacles and proposed improvements.

3. RESULTS AND DISCUSSION

Table 1 presents the problems identified in the disbursement of subsidies at the Faculty of Education, Mahasarakham University, specifically related to the understanding and application of financial regulations and conditions. The results showed that the majority of respondents had only a moderate understanding of budget disbursement regulations, with 54.84% indicating a medium level of knowledge. This finding highlights a significant gap in regulatory literacy among service users, which potentially contributes to misinterpretation and procedural errors. Although the financial regulations are central to ensuring accountability, the study found that opportunities for training or engagement in learning activities related to disbursement were limited. Only 25.81% of respondents reported a high level of training participation, while 38.70% indicated a moderate level. The clarity of communication also emerged as a concern, with 51.61% reporting that notifications regarding regulatory updates and forms were insufficiently disseminated or unclear. Furthermore, 54.84% of respondents reported not receiving consistent updates about changes in disbursement rules, indicating a lack of systemic communication flow within the institution. This gap may affect the ability of academic staff to make timely and

compliant disbursement requests. Inflexibility in regulatory application was also reported, with 48.39% stating that current regulations are difficult to implement in real situations. These findings reflect a disconnect between official financial policy and the realities of academic operations, particularly in fast-paced project environments where agility is essential. Addressing these issues is directly aligned with SDG 16, which advocates for transparent and efficient institutions, and indirectly supports SDG 4 by ensuring that financial systems do not become barriers to educational implementation. Efforts to mitigate these problems could include the development of an online consultation platform, clearer forms, and frequent updates disseminated through internal communication systems such as websites or group messaging platforms. Moreover, regulatory flexibility (without compromising compliance) could be considered through contextualized guidelines or exception protocols for urgent academic needs.

Table 1. Problems in disbursing subsidies to the faculty of education, Mahasarakham University, regarding regulations and conditions for disbursement.

Regulations and Requirements for Disbursement	Low (%)	Moderate (%)	High (%)
Insufficient knowledge and understanding of budget disbursement regulations	22.58	54.84	22.58
Lack of opportunity to participate in training or exchange activities	35.48	38.70	25.81
Notification of regulations, announcements, or forms is unclear or incomplete	35.48	51.61	12.90
No consistent updates regarding changes in disbursement regulations	32.26	54.84	12.90
Regulations are limited or inflexible in practical implementation	25.81	48.39	25.81

Table 2 presents the identified problems in the subsidy disbursement process and procedures at the Faculty of Education. The most notable issue highlighted was the lack of a clear and systematic disbursement procedure, with 54.84% of respondents rating this aspect at a low level. This suggests that many users operate without an established workflow, leading to confusion and inefficiency during fund processing. In academic institutions where multiple stakeholders interact with the finance unit, such procedural ambiguity can cause significant delays and resource mismanagement. In the context of SDG 16, this undermines the goal of building strong, accountable institutions. Additionally, 41.94% of respondents believed that the review process conducted by financial and accounting officers was time-consuming or overly complicated. Although documentation verification is essential for ensuring compliance, excessive complexity can obstruct timely disbursement and discourage project-based academic initiatives. Moreover, the disbursement service process itself was perceived as unnecessarily difficult by over half of the participants (51.61%), revealing procedural redundancy and a lack of user-centered design.

A further concern was the recurrence of incorrect or incomplete documents, with 29.03% rating this issue at a high level. This may stem from unclear guidelines or a lack of standardized templates. The absence of a dedicated information system to support or track the disbursement process was also notable: 32.26% rated this issue as high, while 38.71% selected moderate. Without digital infrastructure, status updates and error notifications remain inconsistent, often resulting in repetitive document submissions and frustration among staff. To address these challenges, the study suggests developing a disbursement flowchart, increasing staff capacity in document review, and introducing a real-time tracking system. These solutions would improve transparency, promote timely feedback, and support SDG 4 by enabling smoother funding flows for educational initiatives.

Table 2. Problems in disbursing subsidies to the faculty of education, Mahasarakham University, in terms of disbursement processes and procedures.

Disbursement Process and Procedure Issues	Low (%)	Moderate (%)	High (%)
Document review by financial officers is time-consuming or complicated	35.48	41.94	22.58
The disbursement process is unnecessarily complicated	32.26	51.61	16.13
Disbursement documents are often incorrect or incomplete	35.48	35.48	29.03
No clear or systematic procedure for the disbursement of funds	54.84	19.35	25.81
Lack of information systems to facilitate the disbursement process	29.03	38.71	32.26

Table 3 highlights the problems identified in financial officer services during the disbursement process at the Faculty of Education. Generally, the results suggest a relatively positive evaluation of the finance staff, as most service-related problems were rated at a low level. Specifically, 54.84% of respondents reported that staff provided unclear advice on disbursement regulations and required documents; however, this was still categorized as a low-level issue. This indicates that while there are inconsistencies in communication, they are not perceived as severe or systemic. The same pattern was evident in other service indicators. For instance, 58.06% believed that problem-solving assistance from officers was insufficient, but again, this was rated at a low level. Similarly, the difficulty of communication with officers was also minimal, with 64.52% reporting low levels of inconvenience. These findings imply that interpersonal and procedural accessibility remain fairly acceptable within the unit. The least problematic aspect was staff politeness, where 74.19% reported no issues related to unfriendly or impolite service. These outcomes reflect a degree of professionalism and user-centered service values, which support institutional accountability as emphasized in SDG 16. However, the findings also indicate underlying issues of procedural inconsistency and unclear internal communication, especially when regulations change. Respondents expressed concerns that frequent rule updates often lead to repeated corrections and contradictory instructions depending on the officer consulted. These results suggest the need for improved internal communication protocols, consistency in advisory practices, and structured documentation training for all finance personnel. Establishing a shared understanding through monthly cross-departmental briefings and publishing unified guidelines may reduce confusion and improve service efficiency.

Table 3. Problems in disbursing financial aid to the faculty of education, Mahasarakham University, in terms of financial officer services.

Financial Officer Service Issues	Low (%)	Moderate (%)	High (%)
Staff did not provide clear advice on regulations and disbursement documents	54.84	32.26	12.90
Assistance or problem-solving from financial officers was insufficient	58.06	29.03	12.90
Communication with financial officers was difficult or inconvenient	64.52	22.58	12.90
Staff were slow or lacked speed in performing their duties	45.16	41.94	12.90
Staff service was unfriendly or impolite	74.19	16.13	9.68

Table 4 presents the action plan formulated to address the identified problems in the financial and accounting system of the Faculty of Education. This action plan outlines a structured response to the disbursement issues raised in previous findings and integrates solutions that emphasize communication, technology, and regulatory reform. The first set of actions focuses on enhancing awareness of the finance department's roles through infographics, posters, and targeted orientation activities. These aim to build a shared understanding among stakeholders regarding financial responsibilities and contact procedures.

Publicizing financial regulations and procedures is also prioritized, particularly through the creation of a dedicated website or online portal for regulations, forms, and frequently asked questions. This directly addresses the communication gaps identified in **Tables 1** and **3**. In parallel, training initiatives on disbursement procedures are proposed, combining online and in-person formats to ensure accessibility and promote institutional financial literacy, essential in advancing SDG 4 (quality education through effective resource use).

The core of the action plan lies in the redesign of disbursement procedures. The plan includes developing flowcharts, clearly assigning responsibilities, and introducing user-friendly forms. This is further supported by the proposal for a real-time tracking system using digital tools such as Google Sheets, which allows users to follow the status of their submissions and reduce redundant inquiries. Additionally, establishing a “financial clinic” as a monthly consultation platform would offer responsive, personalized support for project stakeholders.

Finally, the plan emphasizes regulatory reform and institutional learning. A review committee is assigned to revise internal regulations to better align with actual working conditions, without compromising compliance. The inclusion of regular satisfaction surveys and continuous improvement meetings ensures that development is iterative and stakeholder-informed.

These measures collectively represent a shift toward a modern, transparent, and supportive financial system, one that is essential for enabling academic functions and fulfilling the accountability aims of SDG 16.

Table 4. Action plan for developing financial and accounting systems.

No.	Development Issues	Activity	Responsible Person	Success Indicators
1	Communication of the role of finance	Create an infographic/poster to promote the role and responsibilities	Finance/Public Relations Unit	Number of media published and feedback from the understanding assessment
2	Public relations for regulations/forms	Create a website/page to publish regulations, forms, and Q&A	Finance/IT Department	The website is live and has at least 50 visitors per month
3	Financial regulation knowledge training	Organize online/on-site training on “Disbursement Procedures”	Finance/Human Resource Development	At least 80% participation and satisfaction rated at a good level or higher.
4	Develop a disbursement process system.	Design a flowchart of disbursement procedures and distribute it to departments.	Finance	The flowchart covers all disbursement types; each faculty member can explain it.

Table 4 (Continue). Action plan for developing financial and accounting systems.

No.	Development Issues	Activity	Responsible Person	Success Indicators
5	Consultation/Advice System	Set up a “Financial Clinic” monthly; allow online booking via Google Form	Finance	Number of service users and satisfaction with consultation
6	Document Status Tracking System	Develop a Google Sheet/real-time tracking system	Finance/IT	Users can check the status and reduce repeated inquiries by 30%
7	Increase flexibility in regulations	Review and propose regulation adjustments aligned with real conditions	Regulation Development Committee	Revised internal regulations have been published and implemented
8	Continuous evaluation and development	Survey satisfaction and hold biannual meetings for review and planning	Finance/Monitoring Committee	Evaluation reports and implementation of proposed improvements

Beyond operational concerns, the results of this study reveal that the effectiveness of grant disbursement systems has direct implications for the quality and equity of educational delivery. In academic institutions where faculty members rely on timely financial support to implement instructional innovations, delays and inefficiencies in disbursement obstruct pedagogical progress. For example, research-based teaching projects, teacher training workshops, and student-centered academic activities are all constrained when financial systems are unclear or slow. Addressing this issue is not merely a matter of administrative improvement; it is a matter of educational access and academic freedom. This aligns with the broader goals of SDG 4, which emphasizes inclusive and equitable education through strengthened systemic support.

Furthermore, the process of financial management in universities reflects the integrity and transparency of public institutions. As shown in this study, the lack of standardized procedures, inconsistent communication, and rigid regulations weaken institutional trust and discourage user engagement. To achieve SDG 16, universities must operate as models of good governance, demonstrating responsiveness, fairness, and accountability in all internal processes. By introducing participatory consultation platforms, digital tracking systems, and policy flexibility grounded in user experience, financial units can reinforce their role as enablers of academic mission, not merely as gatekeepers of compliance.

In essence, the integration of educational objectives and sustainable development into financial system design transforms disbursement from a technical function into a strategic academic enabler. This study advocates for an institutional culture where budgeting, regulation, and service provision are all aligned to support the broader educational mandate and the global pursuit of sustainability and institutional justice. This adds new information regarding SDGs, as reported elsewhere ([Maryanti et al., 2022](#)).

4. CONCLUSION

This study examined the challenges faced in the grant disbursement process at the Faculty of Education and proposed practical development guidelines for improving financial system

responsiveness and transparency. The findings revealed that users—primarily academic staff—experienced moderate to low understanding of financial regulations, limited access to updated information, and procedural ambiguity that led to delays and frustration. Though the quality of interpersonal service from financial officers was generally satisfactory, issues such as inconsistent advice and frequent rule changes created operational inefficiencies and eroded confidence in institutional processes.

In educational environments where projects depend on timely financial support, these inefficiencies have direct consequences on the ability to deliver quality teaching, conduct research, and support community-based learning. Delays in fund access hinder program implementation, reduce academic motivation, and compromise the university's role in advancing knowledge. From the perspective of Sustainable Development Goal 4, which promotes inclusive and equitable quality education, the ability of finance systems to support (not hinder) academic innovation is crucial. Simultaneously, SDG 16 emphasizes institutional transparency and accountability, which are achieved when internal systems are efficient, clear, and participatory.

To address these concerns, the study recommends six strategic improvements: first, increasing proactive communication through visual materials and digital platforms; second, providing regular training and accessible reference materials on financial regulations; third, designing standardized and mapped disbursement procedures; fourth, adopting digital tools for document status tracking and real-time notifications; fifth, establishing monthly consultation platforms such as financial clinics; and sixth, reviewing and adapting internal regulations to better match actual implementation contexts without compromising compliance. These reforms, if implemented systematically, have the potential to transform financial operations into a supportive framework for academic excellence and sustainable institutional governance.

5. ACKNOWLEDGMENT

We would like to express our sincere gratitude to the Faculty of Education, Mahasarakham University, for the support and cooperation provided throughout this study. Appreciation is also extended to all lecturers, staff, and students who participated in the survey and contributed valuable insights that informed the development of this research. Their input was essential in identifying practical solutions for improving financial service systems in support of educational advancement.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

7. REFERENCES

- Adebayo, A.E., and Ochayi, O.A. (2022). Utilization of internet services among students of polytechnic institutions in Kwara State. *Indonesian Journal of Multidisciplinary Research*, 2(1), 27-42.
- Ademilua, O.S., and Halisu, Y. (2024). Promoting competitive intelligence strategies to advance library services to rural dwellers. *Indonesian Journal of Multidisciplinary Research*, 4(2), 275-296.
- Al Husaeni, D.F., Al Husaeni, D.N., Nandiyanto, A.B.D., Rokhman, M., Chalim, S., Chano, J., Al Obaidi, A.S.M., and Roestamy, M. (2024). How technology can change educational research?

Definition, factors for improving quality of education and computational bibliometric analysis. *ASEAN Journal of Science and Engineering*, 4(2), 127-166.

Awalussillmi, I., Febriyana, K.R., Padilah, N., and Saadah, N.A. (2023). Efforts to improve sustainable development goals (SDGs) through education on diversification of food using infographic: Animal and vegetable protein. *ASEAN Journal of Agricultural and Food Engineering*, 2(2), 113-120.

Basnur, J., Putra, M.F.F., Jayusman, S.V.A., and Zulhilmi, Z. (2024). Sustainable packaging: Bioplastics as a low-carbon future step for the sustainable development goals (SDGs). *ASEAN Journal for Science and Engineering in Materials*, 3(1), 51-58.

Bolaji, H.O., and Ibrahim, B.F. (2023). Accessibility and usability of information and technology communication: Application for record-keeping among secondary school administrators. *Indonesian Journal of Educational Research and Technology*, 3(3), 191-202.

Djirong, A., Jayadi, K., Abduh, A., Mutolib, A., Mustofa, R.F., and Rahmat, A. (2024). Assessment of student awareness and application of eco-friendly curriculum and technologies in Indonesian higher education for supporting sustainable development goals (SDGs): A case study on environmental challenges. *Indonesian Journal of Science and Technology*, 9(3), 657-678.

Farida, F., Supardi, S., Abduh, A., Muchtar, J., Rosmaladewi, R., and Arham, M. (2024). Technology and hybrid multimedia for language learning and cross-cultural communication in higher education. *ASEAN Journal of Science and Engineering*, 4(2), 331-348.

Gemil, K.W., Na'ila, D.S., Ardila, N.Z., and Sarahah, Z.U. (2024). The relationship of vocational education skills in agribusiness processing agricultural products in achieving sustainable development goals (SDGs). *ASEAN Journal of Science and Engineering Education*, 4(2), 181-192.

Haq, M.R.I., Nurhaliza, D.V., Rahmat, L.N., and Ruchiat, R.N.A. (2024). The influence of environmentally friendly packaging on consumer interest in implementing zero waste in the food industry to meet sustainable development goals (SDGs) needs. *ASEAN Journal of Economic and Economic Education*, 3(2), 111-116.

Keisyafa, A., Sunarya, D.N., Aghniya, S.M., and Maula, S.P. (2024). Analysis of student's awareness of sustainable diet in reducing carbon footprint to support Sustainable Development Goals (SDGs) 2030. *ASEAN Journal of Agricultural and Food Engineering*, 3(1), 67-74.

Kerans, G., Sanjaya, Y., Liliarsari, L., Pamungkas, J., and Ate, G., Y. (2024). Effect of substrate and water on cultivation of Sumba seaworm (nyale) and experimental practicum design for improving critical and creative thinking skills of prospective science teacher in biology and supporting sustainable development goals (SDGs). *ASEAN Journal of Science and Engineering*, 4(3), 383-404.

Krishnan, A., Al-Obaidi, A.S.M., and Hao, L.C. (2024). Towards sustainable wind energy: A systematic review of airfoil and blade technologies over the past 25 years for supporting sustainable development goals (SDGs). *Indonesian Journal of Science and Technology*, 9(3), 623-656.

- Makinde, S.O., Ajani, Y.A., and Abdulrahman, M.R. (2024). Smart learning as transformative impact of technology: A paradigm for accomplishing sustainable development goals (SDGs) in education. *Indonesian Journal of Educational Research and Technology*, 4(3), 213-224.
- Maryanti, R., Rahayu, N., Muktiarni, M., Al Husaeni, D. F., Hufad, A., Sunardi, S., and Nandiyanto, A. B. D. (2022). Sustainable development goals (SDGs) in science education: Definition, literature review, and bibliometric analysis. *Journal of Engineering Science and Technology*, 17, 161-181.
- Maulana, I., Asran, M.A., and Ash-Habi, R.M. (2023). Implementation of Sustainable Development Goals (SDGs) No. 12: Responsible production and consumption by optimizing lemon commodities and community empowerment to reduce household waste. *ASEAN Journal of Community Service and Education*, 2(2), 141-146.
- Nurnabila, A.T., Basnur, J., Rismayani, R., Ramadhani, S., and Zulhilmi, Z. (2023). Analysis of the application of Mediterranean diet patterns on sustainability to support the achievement of sustainable development goals (SDGs): Zero hunger, good health and well beings, responsible consumption, and production. *ASEAN Journal of Agricultural and Food Engineering*, 2(2), 105-112.
- Nurramadhani, A., Riandi, R., Permanasari, A., and Suwarma, I.R. (2024). Low-carbon food consumption for solving climate change mitigation: Literature review with bibliometric and simple calculation application for cultivating sustainability consciousness in facing sustainable development goals (SDGs). *Indonesian Journal of Science and Technology*, 9(2), 261-286.
- Prasojo, L.D., Yuliana, L., and Prihandoko, L.A. (2025). Research performance in higher education: A PLS-SEM analysis of research atmosphere, collaboration, funding, competence, and output, especially for science and engineering facilities in Indonesian universities. *ASEAN Journal of Science and Engineering*, 5(1), 123-144.
- Ragadhita, R., Fiandini, M., Al Husaeni, D. N., and Nandiyanto, A. B. D. (2026). Sustainable development goals (SDGs) in engineering education: Definitions, research trends, bibliometric insights, and strategic approaches. *Indonesian Journal of Science and Technology*, 11(1), 1-26.
- Rahmah, F.A., Nurlaela, N., Anugrah, R., and Putri, Y.A.R. (2024). Safe food treatment technology: The key to realizing the Sustainable Development Goals (SDGs) zero hunger and optimal health. *ASEAN Journal of Agricultural and Food Engineering*, 3(1), 57-66.
- Sakti, A.W., Masunah, J., Karyono, T., and Narawati, T. (2024). Project-based learning on skin cosmetology course. *Indonesian Journal of Educational Research and Technology*, 4(3), 317-330.
- Wanjara, A.O., and Ogembo, P.O. (2024). Information communication technology (ICT) on implementation of higher education. *Indonesian Journal of Educational Research and Technology*, 4(3), 259-270.