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Collaboration and Reflective Practices in Field-Based Learning: Strengthening Academic Literacy through Digital Documentation

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Abstract. This research seeks to examine how teamwork, reflective methods, and digital records in field-based learning enhance academic literacy in postgraduate students. The program was carried out via a field study in Semarang, engaging key partner organizations such as Universitas PGRI Semarang (UPGRIS), Semesta School, the Kota Tua heritage area, and the Grand Mosque of Central Java (MAJT). Using a descriptive qualitative method, data were collected via participatory observation, interviews, digital records, and reflective group discussions. The results indicate that collaboration among institutions offers valuable empirical environments that allow students to link theoretical ideas with practical applications, especially in fields like educational governance, digital innovation, cultural preservation, and spiritual leadership. Reflective practices act as vital tools that enable students to interpret field experiences, participate in analytical processing, and convert observations into a more profound academic comprehension. Simultaneously, digital records improve observational precision, deepen reflective involvement, and bolster academic claims with visual and multimodal proof. The research finds that combining collaboration, reflection, and digital documentation creates a comprehensive learning structure that effectively enhances students' academic writing abilities, critical thinking, and overall academic literacy in the context of Education 5.0. The research suggests the necessity for more organized, technology-enhanced field learning frameworks to maximize academic and professional learning results for graduate students.

Keywords: Academic Literacy, Collaboration, Digital Documentation, Field-based learning, Reflective Practice

1 Introduction

Field-based learning has progressively become acknowledged as a crucial teaching method for connecting theoretical understanding with real-world experience in higher education. Fieldwork enhances the cultivation of critical thinking, reflective analysis, and professional competence by involving students directly with genuine environments [1]. Recent research emphasizes that experiential learning improves students' conceptual grasp and fosters academic literacy, especially when students are supported in documenting, interpreting, and systematically conveying their field experiences [2]. In this setting, combining practical learning with digital records serves as a strategic approach to cultivate graduates who are both academically literate and technologically skilled, particularly within postgraduate education that demands higher levels of analytical rigor and scholarly communication.

The emergence of digital learning environments has transformed the understanding and application of academic literacy. Digital records—like visual documentation, reflective journals, and multimodal reports—allow students to thoroughly document field experiences while honing their abilities in analysis, synthesis, and academic writing [3]. A study by Murillo-Liorente shows that digitized reflective practices markedly enhance students' skills in expressing insights and building evidence-based arguments [4]. This corresponds with worldwide trends highlighting that academic literacy in the 21st century should encompass digital literacy, data analysis, and collaborative knowledge production [5]. However, many existing studies still position digital documentation merely as a learning output rather than as an integral pedagogical mechanism for strengthening academic literacy.

Cooperation is another vital element of successful field-based learning, as alliances with educational institutions, communities, and professional organizations enhance learning settings and expand students' analytical viewpoints. Earlier research indicates that collaborative fieldwork enhances knowledge sharing between institutions and aids in cultivating social, cultural, and managerial skills [6]. The field program carried out by

Muhammadiyah University of Ponorogo showcases this kind of collaboration, as students interact with partner universities, creative schools, cultural landmarks, and religious organizations. These collaborations allow students to witness various practices, analyze different governance models, and contemplate educational advancements—including digital shifts and paperless approaches. Nevertheless, empirical discussions that link collaboration direcly to the systematic development of academis literacy through reflective digital practice remain limited.

Reflective practice acts as the fundamental method by which students convert field experiences into scholarly comprehension. Sudirman suggests that reflective documentation prompts students to critically analyze field events, relate their observations to pertinent theories, and express implications for their professional practice [7]. Recent studies highlight that employing structured reflection alongside digital tools improves students' metacognitive awareness and bolsters their academic writing abilities [8]. In field-based programs, reflective digital documentation serves as an effective tool for enhancing analytical rigor and scholarly communication skills. Yet, prior research often examines reflection, collaboration, and digital learning as separate construcs rather than as an integrated pedagogical framework.

Considering these developments, this research seeks to examine how collaboration and reflective practices in field-based learning enhance academic literacy via digital documentation. The study emphasizes how experiential activities can be turned into academically valuable results by analyzing student involvement in visits across institutions, digital learning spaces, cultural heritage locations, and religious educational contexts. This research also tackles the scarce academic focus on combining collaborative fieldwork, reflective teaching methods, and digital documentation in postgraduate education. The novelty of this study lies in its integrative approach, which positions digital documentation not only as a technological tool but as a reflective-academic process that mediates collaboration and experiental learning to strengthen academic literacy. The results are anticipated to offer fresh perspectives on creating technology-driven experiential learning frameworks that aid in the growth of academic literacy in the context of Education 5.0 [9].

The increasing demand for postgraduate students to excel in academic literacy, digital skills, and reflective analytical abilities emphasizes the necessity of creating learning models that successfully incorporate collaboration, practical experiences, and digital records. Although fieldwork programs are being more widely adopted in Indonesian higher education, research indicates that the pedagogical connection between experiential activities and the development of academic literacy is still restricted, especially concerning reflective documentation, collaboration across institutions, and technology-enhanced learning outcomes [10]. This gap underscores the need for empirical evidence that demonstrates how these elements can be systematically aligned within a single learning design.

The fieldwork carried out in Semarang—including academic partnerships with UPGRIS, digital initiatives at Semesta School, and cultural-spiritual education in Kota Tua and MAJT—illustrates a wealth of untapped opportunities for enhancing academic literacy via organized reflective writing and digital products. Distinct from prior studies that focus primarily on learning outcomes or student perceptions, this research contributes new insights by analyzing reflective digital artifacs as concrete indicators of academic literacy development within collaborative field-based learning.

Considering the identified gaps and contextual challenges, this research is directed by the following question: In what ways do collaboration and reflective practices in experiential learning enhance the academic literacy of postgraduate students via digital documentation? This study explicitly addresses the question to clarify the teaching methods through which experiential learning, teamwork, and digital reflection converge, ensuring that practical learning in postgraduate programs produces both professional experience and measurable, transferable academic skills aligned with Education 5.0 principles.

2 Method

This research utilized a descriptive qualitative approach to investigate the role of collaboration and reflective practices in field-based learning on the enhancement of academic literacy via digital documentation [11]. Data were gathered during a field-based learning program with postgraduate students from Muhammadiyah University of Ponorogo, held at several locations in Semarang, such as Semesta School, Universitas PGRI Semarang (UPGRIS), Kota Tua, and the Grand Mosque of Central Java (MAJT). Four main methods were employed: (1) participatory observation to study institutional practices, educational innovations, and cultural–religious contexts; (2) semi-structured interviews with institutional leaders to gain insights into managerial viewpoints and collaborative processes; (3) digital documentation including images, videos, field notes, and reflective journals generated by students; and (4) group reflection sessions to collectively analyze experiences and relate them to pertinent academic theories. These diverse data sources facilitated thorough triangulation and enhanced the reliability of the results.

The analysis of the data utilized an inductive thematic method, consisting of three phases [12]: data reduction, data presentation, and conclusion formulation. Initially, all digital records and reflective documents were

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structured and labeled to recognize emerging categories associated with collaboration, experiential learning, digital practices, and academic literacy. Secondly, coded data were analyzed across different institutions and learning environments to explore trends in student engagement and reflective meaning-making. Ultimately, themes were integrated to demonstrate how cooperative field experiences and digital documentation methods influenced students' analytical, reflective, and academic writing skills. During the analysis, the researcher employed reflexivity and member-checking to guarantee credibility and to confirm interpretations with the students involved. This methodological framework enabled the research to offer a comprehensive insight into the conversion of experiential activities into academically robust outcomes in postgraduate education.

3 Result and Discussions

Collabocative Field-Based Learning and Institutional Engagement

Collaboration among institutions surfaced as a key discovery in grasping how field-based learning enhances academic literacy growth. The practical experience in Semarang included strategic collaborations with Semesta School, Universitas PGRI Semarang (UPGRIS), heritage management teams from Kota Tua, and officials from the Grand Mosque of Central Java (MAJT). These partnerships did not merely function as learning sites but operated as epistemic enviroments where students encountered diverse institutional logics, governance practices, and knowledge-production systems. Empirical data from student interviews and field notes indicate that cross-institutional engagement provided concrete empirical material that students later transformed into analytical arguments rather than descriptive accounts [13]. From a sociocultural learning perspective, such collaborative enviroments support knowledge construction through situated learning, where meaning is produced through interaction with authentic institutional practices and social contexts.

At UPGRIS, students witnessed firsthand how Good University Governance (GUG) principles are implemented via transparent decision-making, collaborative academic planning, and digitalized administrative processes. One student noted during an interview, "*Previously, GUG was only a concept from policy documents. Seeing how decisions are documented and discussed digitally at UPGRIS made it easier for me to explain governance theory using real example in my paper*". This statement illustrates how collaborative exposure enabled students to bridge abstract governance theories with observable practice, a core indikator of advanced academic literacy. Rather than reproducing textbook definitions, students engaged in analytical contrast by comparing ideal governance models within institutional realities.

Semesta School showcased a unique cooperative atmosphere by adopting the Paperless Education System. Students observed how a school incorporates technology into curriculum management, assessment methods, and everyday teaching—offering them tangible examples for exploring digital pedagogy, TPACK models, and sustainable education efforts. The teamwork at this location motivated students to inquire, conduct interviews with teachers, and record their learning experiences with multimedia resources. These actions enhanced their capacity to write analytically regarding educational innovation, as field observations provided tangible evidence to back theoretical assertions. The difference between Semesta School's digital environment and conventional educational frameworks further allowed students to enhance comparative reasoning, a fundamental aspect of academic literacy.

Figure 1. Academic visit to Semesta International School. (source: Field Data 2025)

Engagement with cultural heritage institutions in Kota Tua Semarang further expanded students analytical perspectives. Cultural sites, preservation programs, and community narratives functioned as living text that requires interpretation through interdisciplinary lenses. Students field notes revealed recurring analytical themes such as identity construction, heritage commodification, and educational tourism. One student wrote, "*Kota Tua shows how education, economy, and culture intersect, This challenged my initial assumption that heritage*

preservation is value-neutral". Such data indicate that collaboration within cultural settings fostered critical reflexivity and encouraged students to interrogate underlying assumptions-an essensial element of academic literacy.

The joint experiences concluded with the trip to MAJT, where students explored how religious organizations combine worship, education, tourism, and community initiatives into a cohesive management system. Conversations with mosque leaders offered students valuable perspectives on spiritual guidance, organizational dynamics, and community strength—factors that enhanced their academic reflections. These complex collaborative interactions show that experiential learning, grounded in cross-sector collaborations, enhances students' access to varied sources of knowledge. The breadth and richness of field experience enhance academic literacy by allowing students to integrate empirical insights into theoretically grounded academic writing [14].

Reflective Practices and the Construction of Academic Understanding

Reflective practice served as the main tool that allowed students to convert field experiences into organized academic understanding. Reflection sessions were consistently integrated prior to, during, and following field visits, allowing students to analyze observations, question assumptions, and connect experiences to theoretical models. Examination of reflective journals indicates a distinct movement from descriptive storytelling to analytical synthesis, consistent with Kolb's experiential learning cycle

Early reflections tended to focus on surface descriptions, such as institutional activities or physical settings. However, by the mid-program stage, reflective entries increasingly demonstrated analytical depth. One student wrote, "*Initially, i focused on what institutions were doing. After reflection, I started asking why certain practices were prioritized and how power and culture shape educational decisions*". This shift indicated the development of metacognitive awareness and critical questioning, key indicators of academic literacy [15].

Group reflection discussions enhanced academic comprehension by promoting dialogic meaning-making. Students shared their views, corrected misunderstandings, and questioned each other's beliefs. These intellectual interactions served as cooperative understanding platforms, enabling students to polish their analytical viewpoints. Interaction with various perspectives prompted students to embrace more complex understandings of governance methods, digital advancements, cultural conservation, and spiritual guidance experienced during field studies. This dialogic process not only improved socio-academic interaction but also bolstered students' capacity to develop well-reasoned arguments in their writing.

Figure 2. Sharing about the effectiveness of educational institution management. (source: Field Data 2025)

Reflective analysis also motivated students to see themselves as researchers instead of just passive observers. Through the integration of field data and theoretical ideas, students honed crucial academic literacy skills like evidence-based reasoning, conceptual integration, and the application of theories [16]. Comparative reflections-such as contrasting digital and non digital schools or secular and religious institutions enabled students to develop structured analytical frameworks rather than fragmented insights. This analytical positioning reinforced their academic identity and scholarly confidence.

Ultimately, reflective practice contributed significantly to students academic self-efficiace. Interview data indicate that students perceived reflection as a turning point in their academic development. One student stated, "Writing reflections helped me realize that I can analyze complex social realities academically, not just report them". This transformation unserscores the role of reflection in cultivating academic literacy as a sustained scholarly disposition rather than a technical skill [17].

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Figure 3. Discussion for rewriting the report manuscript. (source: Field Data 2025)

Digital Documentation as a Tool for Strengthening Academic Literacy

Digital documentation emerged as a compelling educational instrument that converted students' real-world experiences into academically valuable information. Students gathered photos, videos, audio clips, digital notes, and multimedia reflections with each site visit. These artifacts functioned as empirical data rather mere learning souvenirs, supporting analytical writing and evidence-based argumentation. From the perspective of experiential learning theory, this process aligns with Kolb's experiential learning cycle, where concrete experience is transformed into reflective observation and abstract conceptualization through structured documentation activities [18]. Digital documentation thus serves as bridge between experience and academic knowledge construction.

These digital objects functioned as both memory supports and main data sources for scholarly examination. The capacity to collect and arrange digital evidence enabled students to build strong arguments in their academic papers, meeting a fundamental requirement of academic literacy. This corresponds who contend that digital documentation boosts observational precision and enriches students' ability to create evidence-supported academic writing [19]. This practice also resonates with reflective pedagogy, which emphasizes the importance of revisiting learning attifacts to deepen meaning-making and support higher-order thingking in academic contexts.

Transforming digital documents into analytical content necessitated that students participate in advanced academic tasks like categorization, synthesis, and theoretical mapping. For instance, images of Semesta School's digital setup were utilized to enhance conversations regarding TPACK and digital teaching methods. Videos captured at UPGRIS demonstrated participatory governance processes, reinforcing arguments for GUG implementation. Documentation from Kota Tua served as visual proof in writings about cultural preservation and historical awareness. During this process, students acquired the ability to combine visual information with textual analysis—a key aspect of advanced academic literacy in today's digital era. This stage reflects the abstracts conceptualization phase of Kolb's model, where learners integrate experience with theoretical frameworks, enabling deeper analytical engagement and theory-informed interpretation [20], [21].

Digital documentation also improved precision and trustworthiness in academic reporting. Students had the opportunity to review recorded materials repeatedly, guaranteeing that interpretations were not solely dependent on memory. This cyclical approach conforms to qualitative research criteria that highlight systematic data examination and triangulation. Through the comparison of digital resources with field notes and interview transcripts, students created more stringent academic arguments. This shows that digital documentation aids not only in writing but also in the cognitive processes essential for constructing accurate knowledge.

Along with bolstering analytical writing, digital documentation improved the depth of students' reflections. Examining photographs and videos assisted students in remembering emotional responses, moments of uncertainty, or experiences of learning that were not entirely understood during field trips. These reflective prompts enabled students to create more detailed journal entries and deeper essays. Digital documentation served as both a cognitive and emotional trigger, facilitating a more comprehensive reflection that enhanced academic literacy through more profound interpretive involvement [22].

Finally, digital documentation facilitated the development of multimodal academic outputs, including digital portfolios and multimedia reports. These outputs required students to integrate textual, visual, and audio data into coherent scholarly arguments, reflecting advanced multimodal academic literacy [23], [24]. This study demonstrates that digital documentation not only supports traditional academic writing but also equips postgraduate students with competencies aligned with contemporary scholarly communication demands in the era of Education 5.0. In line with contemporary contructivist and multiliteracies frameworks, multimodal documentation practice expand academic literacy beyond text-based norms, preparing students for diverse forms of scholarly expression in digital and policy-driven higher education environments.

4 Conclusion

This research addresses the inquiry by showing that collaboration, reflective practice, and digital documentation function as a cohesive pedagogical framework that systematically enhances the academic literacy of postgraduate students in field-based learning. Collaboration across institutions, including UPGRIS, Semesta School, Kota Tua Semarang, and MAJT, allowed students to link theory to real-world experiences. Reflective practices served as the primary cognitive tool for critically analyzing experiential data, theoretically integrating it, and converting it into cohesive academic arguments, backed by digital documentation that acted as multimodal and verifiable academic proof. This study theoretically contributes by enhancing experiential learning theory by framing digital documentation as a mediating epistemic process—rather than simply a learning artifact—in the advancement of academic literacy, filling a void in previous research that viewed collaboration, reflection, and digital learning as distinct components. The results highlight the necessity for postgraduate fieldwork programs to intentionally incorporate organized institutional partnerships, guided reflective support, and assessment via digital portfolios to guarantee quantifiable academic results in line with Education 5.0. It is suggested that future studies examine this integrative framework across various disciplines and institutional settings by employing mixed-methods or longitudinal approaches, in addition to investigating how emerging technologies can improve reflective digital documentation and the development of academic literacy.

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References

[1] Serdianus, A. A. Rando, N. Parai', and B. G. Rumono, "The Role of Fieldwork Practice in Developing Professional Competence of Christian Religious Education Students," *Didache: Journal of Christian Education*, vol. 6, no. 1, pp. 42–63, Apr. 2025, doi: 10.46445/DJCE.V6I1.871.

[2] H. Zeeb, A. Ibach, T. Voss, and A. Renkl, "How does teachers' noticing of students' fixed mindsets relate to teachers' knowledge, beliefs, and experience? An exploratory study," *Teach Teach Educ*, vol. 130, p. 104170, Aug. 2023, doi: 10.1016/J.TATE.2023.104170.

[3] S. Timotheou *et al.*, "Impacts of digital technologies on education and factors influencing schools' digital capacity and transformation: A literature review," *Educ Inf Technol (Dordr)*, vol. 28, no. 6, p. 6695, Jun. 2022, doi: 10.1007/S10639-022-11431-8.

[4] M. T. Murillo-Llorente, O. Navarro-Martínez, V. I. Del Valle, and M. Pérez-Bermejo, "Using the reflective journal to improve practical skills integrating affective and self-critical aspects in impoverished international environments. A pilot test," *Int J Environ Res Public Health*, vol. 18, no. 16, Aug. 2021, doi: 10.3390/IJERPH18168876.

[5] OECD, "OECD Survey on Social and Emotional Skills 2023 Technical Report," 2025. doi: 10.1787/c37f1703-en.

[6] M. Saparuddin and P. Sidik, "Organizational Culture In Educational Institutions," *Studies in Advanced Pedagogy and Academic Understanding*, vol. 1, no. 2, Dec. 2024, doi: 10.24952/tad.v4i1.5109.

[7] A. Sudirman, A. V. Gemilang, and T. M. A. Kristanto, "The power of reflective journal writing for university students from the efl perspective," *Studies in English Language and Education*, vol. 8, no. 3, pp. 1061–1079, 2021, doi: 10.24815/SIELE.V8I3.19105.

[8] W. Suraworachet, Q. Zhou, and M. Cukurova, "Impact of combining human and analytics feedback on students' engagement with, and performance in, reflective writing tasks," *International Journal of Educational Technology in Higher Education 2023 20:1*, vol. 20, no. 1, pp. 1-, Jan. 2023, doi: 10.1186/S41239-022-00368-0.

[9] A. J. Mahardhani, A. D. Saputro, R. D. Suciati, and L. Rosidha, "Bridging Policy and Practice: Empowering Teachers with Deep Learning Literacy in the Era of Digital Transformation," *Global Sustainability and Community Engagement*, vol. 1, no. 4, pp. 228–232, Oct. 2025, doi: 10.62568/GSCE.V1I4.513.

[10] M. Sailer, R. Maier, S. Berger, T. Kastorff, and K. Stegmann, "Learning activities in technology-enhanced learning: A systematic review of meta-analyses and second-order meta-analysis in higher education," *Learn Individ Differ*, vol. 112, p. 102446, May 2024, doi: 10.1016/J.LINDIF.2024.102446.

[11] M. R. Pahleviannur, A. D. Grave, D. N. Saputra, D. Mardianto, and A. J. Mahardhani, *Metodologi Penelitian Kualitatif*. Sukoharjo: Pradina Pustaka, 2022.

[12] J. W. Creswell and J. D. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Singapore: Sage Publication Inc, 2018.

[13] T. Z. Ningsih *et al.*, "Enhancing communication and collaboration skills through discovery, cooperative and problem-based learning models in Social Studies education," *Cogent Education*, vol. 12, no. 1, Dec. 2025, doi: 10.1080/2331186X.2025.2500110;WGROUP:STRING:PUBLICATION.

[14] A. J. Mahardhani and A. R. A. Muhamad, "Internalization of Pancasila Student Profile Values based on Digital Citizenship as Preparation for Industry 4.0 and Implementation of Independent Learning Policy," *AL-ISHLAH: Jurnal Pendidikan*, vol. 15, no. 2, pp. 2395–2404, Jun. 2023, doi: 10.35445/ALISHLAH.V15I2.2871.

[15] E. Nusivera, A. Hikmat, and A. R. A. Ghani, "Improving Students' Academic Writing Skills Through Metacognitive Strategies," *JPI (Jurnal Pendidikan Indonesia)*, vol. 14, no. 2, pp. 371–380, Jun. 2025, doi: 10.23887/JPI-UNDIKSHA.V14I2.89913.

[16] A. J. Mahardhani and P. S. Utami, "The 'Paulo Fraire' Educational Thinking Paradigm in the Service Learning Model in Higher Education," *AL-ISHLAH: Jurnal Pendidikan*, vol. 14, no. 3, pp. 2837–2850, Jul. 2022, doi: 10.35445/ALISHLAH.V14I3.1038.

[17] A. Syaifudin, F. Rokhman, I. Zulaeha, and Rustono, "Academic Literacy of Students for Scientific Paper Competition in National Level," in *Proceedings of the International Conference on Science and Education and Technology (ISET 2019)*, Atlantis Press, Jul. 2020, pp. 706–710. doi: 10.2991/assehr.k.200620.144.

[18] M. Wijnen-Meijer, T. Brandhuber, A. Schneider, and P. O. Berberat, "Implementing Kolb´s Experiential Learning Cycle by Linking Real Experience, Case-Based Discussion and Simulation," *J Med Educ Curric Dev*, vol. 9, p. 23821205221091510, Jan. 2022, doi: 10.1177/23821205221091511.

[19] J. Arnaud, H. São Mamede, and F. Branco, "The relationship between digital transformation and digital literacy - an explanatory model: Systematic literature review," *F1000Res*, vol. 13, p. 253, Apr. 2024, doi: 10.12688/F1000RESEARCH.146991.1.

[20] W. Rahmi, "Analytical Study of Experiential Learning: Experiential Learning Theory in Learning Activities," *EDUKASIA Jurnal Pendidikan dan Pembelajaran*, vol. 5, no. 2, pp. 115–126, Oct. 2024, doi: 10.62775/EDUKASIA.V5I2.1113.

[21] L. G. de Almeida and L. F. C. Nascimento, "The approach to experiential learning by David Kolb and its influence on the development of professional competencies in leadership," *Contribuciones a las Ciebcias Sociales*, vol. 17, no. 10, p. e12179, Oct. 2024, doi: 10.55905/REVCONV.17N.10-474.

[22] O. M. Ijiga, G. P. Ifenatuora, and M. Olateju, "Digital Storytelling as a Tool for Enhancing STEM Engagement: A Multimedia Approach to Science Communication in K-12 Education," *International Journal of Multidisciplinary Research and Growth Evaluation*, vol. 2, no. 5, pp. 495–505, 2021, doi: 10.54660/.IJMRGE.2021.2.5.495-505.

[23] U. Bodén, L. Stenliden, and J. Nissen, "The construction of interactive and multimodal reading in school—a performative, collaborative and dynamic reading," *Journal of Visual Literacy*, vol. 42, no. 1, pp. 1–25, 2023, doi: 10.1080/1051144X.2023.2168395;ISSUE:ISSUE:DOI.

[24] J. M. de Oliveira, "Enhancing multimodal literacy through community service learning in higher education," *Front Educ (Lausanne)*, vol. 9, p. 1448805, Nov. 2024, doi: 10.3389/FEDUC.2024.1448805/BIBTEX.