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How AI-Ready Are Indonesian Accounting Curricula? Evidence from Online Curriculum Benchmarking

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Abstract

Artificial intelligence (AI) is reshaping accounting practice and increasing demand for digital, analytical, and technology-enabled professional competencies, yet limited cross-institutional evidence shows how explicitly these competencies are embedded in Indonesian undergraduate accounting curricula. This study assessed AI curriculum readiness across 24 undergraduate accounting programs, comprising 12 public and 12 private universities, and identified the most and least represented competency areas. A descriptive cross-sectional curriculum benchmarking design was applied to publicly available official curriculum information using structured document content analysis. AI readiness was measured with a simplified AI Curriculum Readiness Index (AICRI) comprising six dimensions and 12 binary indicators. The mean normalized AICRI score was 29.17 out of 100, indicating limited explicit AI-related curriculum coverage. Digital Accounting Technologies had the highest coverage, followed by Data and Analytics and Digital Audit and Assurance, while AI and Automation and Cybersecurity, Governance and Digital Ethics were substantially less represented. Private university programs recorded higher AICRI scores than public university programs within the purposively selected sample. The findings suggest that the sampled accounting curricula have progressed further in digitalization than in comprehensive AI readiness and identify priority areas for curriculum reform, particularly AI foundations, automation, advanced analytics, cybersecurity, and responsible AI governance.

Keywords: *artificial intelligence, accounting education, curriculum readiness, digital competence, Indonesia*

1. Introduction

Artificial intelligence (AI) is changing the technological foundations of accounting and the competencies expected of future accountants. Modern accounting increasingly operates through data analytics, intelligent information systems, automation, blockchain, machine learning, and technology-enabled auditing. These technologies extend beyond routine transaction automation by supporting continuous data processing, anomaly detection, forecasting, and decision support. Han, Shiwakoti, Jarvis, Mordi, & Botchie (2023) show that the convergence of AI, blockchain, and accounting information systems is transforming record keeping, auditing, and assurance toward more real-time and technology-intensive practices. Assidi, Omran, Rana, & Borgi, 2025 similarly emphasize that AI adoption is reshaping professional roles and digital work environments, while Eulerich, Sanatizadeh, Vakilzadeh, & Wood (2024) demonstrate the disruptive potential of generative AI for accounting and auditing tasks.

Technological change also raises professional and ethical concerns. Increased reliance on algorithmic decision-making creates questions about privacy, transparency, accountability, bias, trust, and ethical responsibility (Eulerich et al., 2024; Lehner, Ittonen, Silvola, Ström, & Wührleitner, 2022). Generative AI has also begun to affect how accounting knowledge is learned and professional judgments are formed. Sugahara & Kano (2026) provide experimental evidence that AI-generated advice can influence accounting-related professional judgment, reinforcing the need for future accountants to evaluate AI-supported recommendations critically rather than accept them mechanically.

These developments create a substantial challenge for accounting education. Universities are increasingly expected to prepare graduates who can combine traditional accounting knowledge with data literacy, technological competence, analytical reasoning, ethical awareness, communication, and professional judgment in AI-supported environments (Mohamed Saad, 2025). The broader accounting education literature likewise points to both opportunities and risks associated with AI and digital technologies (Ballantine, Boyce, & Stoner, 2024), while the expansion of big data has intensified calls for stronger technology and analytics capabilities within accounting programs (Fogarty & Campbell, 2024). Curriculum redesign toward more technology-intensive accounting education is therefore becoming increasingly relevant (O'Hara, Simmons, Kogan, & Boyle, 2024).

Much of the emerging empirical evidence, however, remains focused on individual perceptions, acceptance, and use of AI. Al-Okaily (2025) examined accounting students' acceptance of ChatGPT through an

extended Technology Acceptance Model. Abdo-Salloum & Al-Mousawi (2025) examined technology readiness, perceptions, and digital competence in relation to AI adoption in accounting curricula, while Haugland Sundkvist & Kulset (2024) explored students' perspectives on accounting education in the ChatGPT era. These studies are valuable for understanding behavioral responses to AI, but they do not establish whether AI-related competencies have been systematically embedded within formal accounting curricula.

The rapid diffusion of generative AI has also prompted universities to reconsider institutional guidelines, learning policies, and assessment practices. Chan (2023) proposes a comprehensive AI policy education framework for university teaching and learning, and An, Yu, & James (2025) document institutional guidelines and policies for generative AI across higher education functions. In accounting education specifically, Dosumu, Porumb, Stafford, & Zimmer 2026) discuss the implications of ChatGPT for assessment, while Luo (2024) highlights broader questions about originality and assessment policy in higher education. These developments further suggest that AI readiness involves not only technical capability but also responsible use, governance, and assessment design.

Despite these advances, an important empirical gap persists. Evidence that students are using AI, that professionals expect AI to transform accounting work, or that universities should reform their programs does not show whether such transformation is already visible in the formal accounting curriculum itself. Existing research provides more evidence on technology adoption, professional transformation, and ethical implications than on systematic cross-institutional comparisons of observable curriculum content. It therefore remains unclear whether undergraduate accounting programs have moved beyond established forms of digitalization, such as accounting information systems, enterprise resource planning, and accounting software, toward more comprehensive AI readiness involving artificial intelligence, automation, advanced analytics, digital auditing, cybersecurity, and responsible technology governance. A curriculum can be digitally enabled without necessarily being AI-ready.

This gap is particularly relevant in Indonesia, where undergraduate accounting education is delivered through a diverse higher-education system that includes both public and private universities. Many universities publicly disclose curriculum structures, course titles, and credit information, yet these documents have rarely been used as comparative empirical evidence of how visibly emerging AI- and digital-related competencies are represented across accounting programs. Formal curriculum documents therefore provide a relatively objective and replicable basis for assessing the visible institutional response of accounting education to technological change.

Constructive Alignment provides the theoretical lens for this study. The approach views curriculum design as a purposeful relationship among intended learning outcomes, learning activities, and assessment. Contemporary applications emphasize that intended competencies should not only be formally stated but also translated into educational activities that enable students to develop the expected capabilities (Tobiason, 2024). From this perspective, if AI, analytics, digital auditing, cybersecurity, and responsible technology use are becoming expected competencies for future accountants, their growing importance should eventually become visible within curriculum structures and learning opportunities.

This study does not assume that the presence of a course guarantees student competence, nor that the absence of an explicit course title means a competency is completely absent from teaching. Rather, curricular visibility is treated as an initial indication of whether changing professional requirements are being reflected in formal educational design. AI curriculum readiness is therefore conceptualized as the extent to which an undergraduate accounting curriculum explicitly reflects competencies associated with AI-enabled professional practice across six dimensions: AI and Automation; Data and Analytics; Digital Accounting Technologies; Digital Audit and Assurance; Cybersecurity, Governance and Digital Ethics; and Digital Decision-Making and Innovation. The resulting AI Curriculum Readiness Index (AICRI) is used as a parsimonious benchmarking mechanism for comparing visible curriculum alignment across programs.

The six dimensions also recognize that technological transformation does not occur at a single level. A program may be relatively strong in accounting information systems or accounting software while remaining weak in AI, automation, cybersecurity, or responsible digital governance. Data analytics may be present without explicit machine-learning content, while digital audit courses may focus on information systems rather than analytics-enabled assurance. For that reason, AI readiness is treated here as a multidimensional progression rather than as the simple presence or absence of technology-related coursework. This distinction is important for benchmarking because it reduces the risk of labeling a curriculum AI-ready merely because it contains an established digital systems course.

The study contributes in three ways. First, it shifts the unit of analysis from perceptions and technology acceptance to observable curriculum evidence. Second, it proposes a multidimensional benchmarking approach that distinguishes general curriculum digitalization from deeper AI readiness rather than treating any technology-related course as evidence of AI integration. Third, it provides cross-institutional evidence from an emerging higher-education context and permits an exploratory comparison between public and private accounting programs. In doing so, the study moves the discussion from whether AI matters for accounting education to a more concrete question: how visible has the AI transformation of accounting become in the formal curricula used to educate future accountants?

2. Objectives

The study pursued the following measurable objectives:

1) To assess the explicit representation of AI and digital-related competencies in the publicly available curricula of sampled Indonesian undergraduate accounting programs.

2) To identify which dimensions of AI curriculum readiness are most and least represented across the sampled programs using the AI Curriculum Readiness Index (AICRI).

3) To compare AICRI scores between the sampled public and private university accounting programs as an exploratory benchmark of institutional differences.

3. Materials and Methods

3.1 Research design and sample

The study used a descriptive cross-sectional curriculum benchmarking design based on structured document content analysis. Document analysis is appropriate for the systematic review of institutional and curriculum documents and for comparing how academic programs respond to emerging competencies (Cleland, MacLeod, & Ellaway, 2023; Hilliger, Miranda, Celis, & Pérez-Sanagustín, 2024). The unit of analysis was the Indonesian undergraduate accounting program (S1 Accounting), and the analysis focused on the explicit visibility of AI- and digital-related competencies in the formal curriculum.

The purposive sample comprised 24 undergraduate accounting programs, consisting of 12 public universities and 12 private universities. Programs were selected on the basis of the availability and comparability of official online curriculum information. The inclusion criteria were: 1) an active S1 Accounting program in Indonesia; 2) a curriculum publicly accessible through an official university, faculty, or study-program website; 3) identifiable course titles; 4) available semester and/or credit information; and 5) an identifiable curriculum year or current official status. Data collection was completed on August 15, 2026.

3.2 AI Curriculum Readiness Index and coding procedure

AI curriculum readiness was evaluated using a simplified AI Curriculum Readiness Index (AICRI) comprising six dimensions and 12 binary indicators. The six dimensions were: 1) AI and Automation; 2) Data and Analytics; 3) Digital Accounting Technologies; 4) Digital Audit and Assurance; 5) Cybersecurity, Governance and Digital Ethics; and 6) Digital Decision-Making and Innovation. The dimensions were designed to capture the widening technology competencies associated with contemporary accounting education, including the increasing importance of analytics and digital technologies (Xu, Liu, & Krahel, 2024)(Xu, Liu, & Krahel, 2024).

A conservative title-based coding procedure was applied. For each program, an indicator was coded 1 when explicit evidence appeared in a formal course or curriculum-item title and 0 when no explicit evidence was identified. Competencies were not inferred from broadly related titles. For example, Data Analytics was coded as analytics evidence, whereas Statistics was not automatically treated as analytics. This conservative approach was intended to strengthen coding transparency and replicability in line with systematic document-analysis principles (Sankofa, 2023)(Sankofa, 2023).

The coding strategy deliberately prioritized observable curricular evidence over assumptions about hidden course content. Thus, a conventional course such as Management Accounting, Auditing, or Business Statistics was not coded as AI-related unless the published title explicitly signaled one of the defined indicators. Conversely, a course title that explicitly referred to analytics, digital audit, AI, machine learning, cybersecurity, or digital transformation was coded within the relevant indicator. This approach makes the index reproducible from public curriculum documents, although it also means that AI-related topics embedded inside syllabi may be undercounted. The index should therefore be interpreted as a measure of explicit curriculum visibility rather than an exhaustive measure of all teaching content.

The overall AICRI score for each program was calculated as follows:

AICRIi = (Number of indicators coded 1 / 12) x 100

Scores ranged from 0 to 100, with higher values indicating broader explicit curriculum coverage of AI- and digital-related competencies. AICRI was interpreted as a curriculum visibility index rather than an indicator of teaching quality, faculty competence, student AI literacy, or actual student performance.

3.3 Data analysis

The analysis included descriptive statistics for total AICRI scores, frequency analysis of the 12 indicators, comparison of the six dimensions, and comparison of public and private university programs using mean and median AICRI scores. A Mann-Whitney U test was applied as an exploratory inferential analysis of the Public university-Private university difference. Because the sample was purposively selected, statistical results were interpreted as sample-based benchmarking evidence rather than nationally representative or causal estimates.

4. Results and Discussion

4.1 Overall AI curriculum readiness

The analysis covered 24 undergraduate accounting programs, including 12 public and 12 private universities. Each program was assessed using 12 binary indicators across the six dimensions of AI and digital curriculum readiness. The overall AICRI ranged from 8.33 to 58.33, with a mean of 29.17, a median of 33.33, and a standard deviation of 12.77. On average, each program explicitly represented approximately 3.5 of the 12 indicators.

Within the sampled programs, BINUS University recorded the highest AICRI score (58.33), corresponding to seven of the 12 indicators, followed by Universitas Gadjah Mada (50.00) with six indicators. Universitas Trisakti, Universitas Muhammadiyah Yogyakarta, and Universitas Kristen Satya Wacana each recorded 41.67. At the lower end of the distribution, Universitas Sumatera Utara, Universitas Mulawarman, and Universitas Negeri Padang each recorded 8.33, corresponding to one explicitly identified indicator. The modal AICRI score was 33.33, observed in eight programs, and none of the sampled programs covered all 12 indicators.

4.2 Indicator-level curriculum coverage

Substantial variation was observed across the 12 curriculum indicators. Table 1 shows the number and percentage of programs in which each indicator was explicitly identified under the conservative title-based coding procedure.

Table 1 Frequency of the 12 AICRI indicators

Indicator	Curriculum Indicator	Programs (n)	Percentage
1	AI / Generative AI / Machine Learning	5	20.83%
2	Automation / Robotic Process Automation	0	0.00%
3	Data / Business / Accounting Analytics	13	54.17%
4	Business Intelligence / Big Data / Data Visualization	8	33.33%
5	Accounting Information Systems / ERP / Accounting Software	24	100.00%
6	Emerging Accounting Technologies	1	4.17%
7	Digital / Information Systems / Computer Audit	13	54.17%
8	Audit Analytics / CAAT / Audit Software	4	16.67%
9	Cybersecurity / Data Security / Privacy	1	4.17%
10	Digital / AI / IT Governance and Ethics	0	0.00%
11	Digital Decision Support / Modelling / Simulation	3	12.50%
12	Digital Business / Digital Transformation / Innovation	12	50.00%

The most prevalent indicator was Accounting Information Systems, ERP, or Accounting Software (I5), which appeared in all 24 programs (100.00%). Data, Business, or Accounting Analytics (I3) and Digital/Information Systems/Computer Audit (I7) each appeared in 13 programs (54.17%), while Digital

Business, Digital Transformation, or Innovation (I12) appeared in 12 programs (50.00%). Business Intelligence, Big Data, or Data Visualization (I4) was identified in eight programs (33.33%).

Explicit Artificial Intelligence, Generative AI, or Machine Learning content (I1) was identified in five programs (20.83%), and Audit Analytics, CAAT, or Audit Software (I8) in four programs (16.67%). Digital Decision Support, Modelling, or Simulation (I11) appeared in three programs (12.50%). Emerging Accounting Technologies (I6) and Cybersecurity, Data Security, or Privacy (I9) each appeared in only one program (4.17%). No explicit course-title evidence was found for Automation or Robotic Process Automation (I2) or for Digital/AI/IT Governance and Ethics (I10).

4.3 Dimensional pattern of readiness

The 12 indicators were aggregated into six dimensions to examine broader patterns of curriculum readiness. As shown in Table 2, the distribution was highly uneven across competency areas.

Table 2 Curriculum coverage across the six AICRI dimensions

Rank	Dimension	Indicators	Coverage
1	D3 - Digital Accounting Technologies	I5-I6	52.08%
2	D2 - Data and Analytics	I3-I4	43.75%
3	D4 - Digital Audit and Assurance	I7-I8	35.42%
4	D6 - Digital Decision-Making and Innovation	I11-I12	31.25%
5	D1 - AI and Automation	I1-I2	10.42%
6	D5 - Cybersecurity, Governance and Digital Ethics	I9-I10	2.08%

Digital Accounting Technologies (D3) had the highest coverage at 52.08%, followed by Data and Analytics (D2) at 43.75%. Digital Audit and Assurance (D4) ranked third at 35.42%, and Digital Decision-Making and Innovation (D6) reached 31.25%. Coverage was substantially lower for AI and Automation (D1) at 10.42% and lowest for Cybersecurity, Governance and Digital Ethics (D5) at 2.08%. The dimensional ranking therefore revealed a large gap between established digital accounting capabilities and the competencies most directly associated with comprehensive AI readiness.

4.4 Public-private comparison

AICRI scores were also compared according to institutional ownership. Table 3 summarizes the descriptive statistics for the 12 public and 12 private university accounting programs.

Table 3 Comparison of AICRI scores between public and private universities

Statistic	Public Universities (n = 12)	Private Universities (n = 12)
Mean AICRI	21.53	36.81
Median	20.83	33.33
Standard deviation	12.03	8.30
Minimum	8.33	25.00
Maximum	50.00	58.33
Mean difference		15.28 points

The mean AICRI score was 21.53 for public universities and 36.81 for private universities, a descriptive difference of 15.28 points. Median scores were 20.83 and 33.33, respectively. Public university scores ranged from 8.33 to 50.00, whereas private university scores ranged from 25.00 to 58.33. The Mann-Whitney U test indicated a significant difference in the distribution of AICRI scores between the two groups ($U = 17.50$, $p = .001$). Within this purposively selected sample, private university accounting programs showed higher explicit AI- and digital-related curriculum coverage than public university programs. This result is limited to the observed sample and should not be interpreted as a nationally representative comparison of all public and private universities in Indonesia.

4.5 Discussion and implications

4.5.1 Digitalization has progressed faster than AI readiness

The central finding is that the sampled Indonesian undergraduate accounting curricula appeared to have progressed further in digitalization than in comprehensive AI readiness. The aggregate AICRI score indicated relatively limited coverage across the full range of AI- and digital-related competencies, but the pattern across dimensions was more informative than the overall score alone. Digital Accounting Technologies was the strongest dimension because Accounting Information Systems, ERP, and accounting software were represented in every sampled program, whereas explicit AI, machine learning, generative AI, and automation content was much less visible. This pattern suggests a gradual process of technological curriculum adaptation. Many programs have incorporated established digital infrastructure into their curricula, while fewer have moved toward intelligent automation, algorithmic decision support, and advanced AI applications. The distinction matters because contemporary digital transformation in accounting involves more than computerized information processing. AI and related technologies increasingly support pattern recognition, automated processing, continuous auditing, real-time information, and technology-supported professional judgment (Han et al., 2023). The widespread presence of AIS or ERP should therefore be interpreted as evidence of a digital foundation rather than evidence that curricula are already fully AI-ready.

The results point to a transitional phase in which accounting programs are becoming more digitally enabled but have not yet fully integrated AI-mediated professional practices. This interpretation is consistent with the broader concern that accounting education must respond to technological change without reducing professional preparation to tool use alone (Ballantine et al., 2024; Mohamed Saad, 2025). This transitional interpretation is more informative than a simple binary classification of curricula as technologically current or outdated. The sampled programs demonstrate that digital modernization can be uneven: legacy digital systems may be well established while newer AI-related competencies remain marginal. Such unevenness is understandable because curriculum revision involves approval procedures, faculty preparation, teaching resources, software access, and decisions about which competencies deserve stand-alone courses and which should be embedded across existing subjects. The benchmarking results therefore provide a snapshot of curriculum adaptation at different stages rather than a definitive judgment about institutional quality.

4.5.2 Analytics and digital audit as transitional capabilities

Data and Analytics was the second-highest AICRI dimension. More than half of the sampled programs contained courses explicitly related to data, business, or accounting analytics, and one-third included business intelligence, big data, or data visualization. This suggests that accounting programs have responded more quickly to data-related capabilities than to AI and automation themselves. The finding is consistent with the growing recognition of analytics as an important curriculum component. Xu et al. (2024) show that educators' intentions to implement data analytics are shaped not only by attitudes but also by institutional expectations, incentives, and available resources. Analytics may therefore represent an earlier and more institutionally manageable stage of technological curriculum reform. It also provides a foundation for later AI integration because effective AI-supported accounting depends on the ability to organize, interpret, visualize, and critically evaluate data. Nevertheless, the presence of analytics should not be treated as evidence of sophisticated AI integration. The observed programs often appeared to have developed data-oriented capabilities without yet adding explicit AI or automation content, echoing the broader big-data challenge identified in accounting education (Fogarty & Campbell, 2024).

A similar maturity gradient appeared in Digital Audit and Assurance. Courses related to information systems auditing, computer auditing, or IT auditing were relatively common, but audit analytics, computer-assisted audit techniques, and specialized audit software were less visible. This suggests that programs have responded to the need to audit digital systems more quickly than to the use of advanced analytical tools within the audit process itself. As Han et al., (2023) note, digital technologies can support a transition toward more continuous and technology-intensive assurance. Curriculum development may therefore need to move from teaching students primarily about digital systems toward enabling them to apply digital analytical tools within audit and assurance work. The sequencing of analytics before deeper AI integration also has pedagogical logic. Students who can structure data, understand databases, interpret visualizations, and evaluate analytical outputs possess a stronger foundation for later work with predictive models, machine learning, and generative AI. From this perspective, the relatively higher coverage of analytics is not merely a partial response to digital change; it

may represent an enabling layer for more advanced AI-oriented curriculum development. The challenge is to ensure that analytics does not become an endpoint. Programs that stop at generic data analysis may still leave graduates underprepared for automated workflows, AI-assisted assurance, and the critical evaluation of algorithmic outputs.

4.5.3 Responsible AI is the most visible curriculum gap

Cybersecurity, Governance and Digital Ethics was the weakest dimension. Only one program showed explicit title-level evidence related to cybersecurity or data security, and no explicit evidence was found for AI, digital, or IT governance and ethics under the conservative coding procedure. This gap is notable because increased technological capability also creates new forms of professional responsibility. AI-supported accounting decisions can involve privacy, algorithmic opacity, bias, accountability, transparency, and trust (Lehner et al., 2022). Responsible use is also becoming a broader higher-education concern. Chan, (2023) emphasizes the need for educational frameworks that address AI policy and responsible use, while An et al., (2025) show that universities are increasingly developing guidelines for generative AI across teaching, learning, research, and administration. In accounting education, the issue is particularly important because professional judgment remains central even when decisions are supported by automated systems. Sugahara & Kano, (2026) show that generative AI advice can affect accounting-related ethical judgment, reinforcing the importance of accounting knowledge, experience, and critical evaluation when interacting with AI-generated recommendations.

The low explicit visibility of cybersecurity, responsible AI, and digital governance should therefore be read as more than a missing technical topic. It signals an opportunity to strengthen the ethical and professional dimensions of technology-enabled accounting education. A technically capable graduate who cannot evaluate data provenance, privacy risk, algorithmic bias, model limitations, or the allocation of accountability may be poorly equipped for professional work in AI-supported settings. Responsible AI content is therefore closely connected to established accounting values such as integrity, objectivity, confidentiality, due care, and professional skepticism, rather than being an optional technology topic. At the same time, the finding requires caution because this study coded course titles rather than full syllabi. Traditional courses in professional ethics, corporate governance, auditing, or accounting information systems may already address cybersecurity or AI-related ethical issues without signaling them in the course title. The result therefore indicates low explicit curricular visibility, not necessarily complete absence from classroom teaching.

4.5.4 Constructive alignment and curriculum development

Viewed through Constructive Alignment, curriculum readiness should involve more than the isolated presence of technology-related courses. If accounting programs increasingly expect graduates to function effectively in AI-supported professional environments, these expectations should progressively become visible through coherent curriculum content, learning activities, and assessment. The results indicate that visible alignment is currently stronger for established digital competencies such as AIS, ERP, accounting software, and analytics than for AI, automation, cybersecurity, and responsible digital governance. Adding a single AI course would not, by itself, create comprehensive curriculum alignment. A stronger approach would embed AI-related competencies across relevant accounting domains, for example through AI-supported financial analysis, automated audit procedures, analytics in management accounting, technology-risk evaluation in information systems, and ethical assessment of AI-generated recommendations. Assessment practices may also need to evolve as generative AI changes the conditions under which students demonstrate learning (Dosumu et al., 2026; Luo, 2024). Curriculum reform should therefore progress from digital accounting literacy toward AI-enabled professional competence. Priority areas include core AI and generative AI literacy, automation and robotic process automation, advanced accounting analytics, AI-enabled audit and assurance, cybersecurity and data privacy, responsible AI governance, and critical evaluation of AI-supported decisions. These capabilities should complement rather than replace accounting principles and professional judgment. The central challenge is to align technological capability with accounting knowledge, ethical responsibility, and human judgment.

Implementation does not necessarily require creating a large number of new stand-alone courses. Some competencies may be introduced through dedicated subjects, while others may be embedded in existing financial accounting, management accounting, auditing, taxation, information systems, and capstone courses. For example, management accounting can incorporate AI-supported forecasting and scenario analysis; auditing can include automated procedures and anomaly detection; accounting information systems can address cybersecurity and data governance; and professional ethics can examine accountability for AI-assisted decisions. This distributed

approach may better reflect Constructive Alignment because technology is learned in the professional contexts in which students are expected to apply it. A staged curriculum pathway may also be useful. Foundational digital literacy and information systems can be followed by data analytics, then by discipline-specific AI applications, automation, and responsible governance. Such sequencing would allow students to build technical capability progressively while repeatedly connecting new tools to accounting concepts and professional judgment. It would also make curriculum reform more feasible for programs facing constraints in faculty expertise or technology infrastructure, because change could be phased rather than implemented as a single large-scale redesign.

4.5.5 Public-private differences and institutional adaptability

The purposively selected private university programs showed higher AICRI scores than the public university programs. This difference should not be interpreted as evidence that private universities are inherently better or that institutional ownership determines curriculum readiness. Instead, it raises an exploratory question about the speed and mechanisms of curriculum adaptation. Programs may operate under different combinations of market pressure, administrative flexibility, faculty capability, employer expectations, accreditation requirements, and access to instructional resources. Xu et al. (2024) show that data-analytics curriculum adoption is influenced by institutional expectations, external incentives, and implementation resources. The observed ownership difference may therefore reflect differences in adaptation mechanisms rather than ownership itself.

Private institutions may, for example, face stronger incentives to signal responsiveness to labor-market change through visible course titles, while public institutions may embed similar content within existing courses or follow different curriculum revision cycles. The present data cannot distinguish among these explanations because governance processes, faculty characteristics, employer partnerships, and course-level teaching practices were not observed. The ownership result should therefore be treated as a hypothesis-generating pattern rather than a causal finding. Future research should examine curriculum revision cycles, university governance, professional partnerships, faculty digital capability, employer engagement, accreditation pressures, and other institutional conditions that may explain variation in AI curriculum readiness.

4.5.6 Benchmarking implications and future use of AICRI

The AICRI also has a practical benchmarking function. Because the index is based on a small set of transparent binary indicators, it can be replicated across institutions and repeated when curricula are revised. Programs can use the dimensional profile to identify whether their visible strengths are concentrated in established digital systems or extend to AI, automation, advanced analytics, cybersecurity, governance, and AI-supported decision-making. The purpose is not to rank universities in a definitive sense, but to provide a structured baseline for curriculum review and to make differences in technological emphasis easier to observe. The simplicity of the index is also a limitation. Equal weighting assumes that each indicator contributes similarly to curriculum readiness, while the binary coding does not distinguish between a single elective course and deep integration across multiple required courses. Future versions could incorporate course status, credit weight, syllabus content, learning outcomes, assessment tasks, and the depth of technology use. Expert validation and inter-coder reliability testing could also strengthen the measurement properties of the index when richer curriculum evidence becomes available.

Longitudinal application would be especially valuable because AI-related curriculum change is likely to occur quickly. Repeating the benchmarking exercise after curriculum revisions could show whether programs are moving from basic digitalization toward more comprehensive AI readiness and whether responsible AI and cybersecurity receive greater attention over time. Such evidence would complement perception-based studies by documenting observable institutional change in formal curriculum structures.

5. Conclusion

This study examined the explicit inclusion of AI- and digital-related competencies in the formal curricula of 24 Indonesian undergraduate accounting programs, comprising 12 public and 12 private universities. Using a six-dimensional, 12-indicator AI Curriculum Readiness Index, the study found a mean AICRI score of 29.17 out of 100, indicating relatively limited explicit coverage across the full set of AI-related curriculum competencies. Digital Accounting Technologies, Data and Analytics, Digital Audit and Assurance, and Digital Decision-Making and Innovation were the more visible dimensions, whereas AI and Automation and Cybersecurity, Governance and Digital Ethics had substantially lower coverage. The main conclusion is that the sampled accounting curricula have progressed further in digitalization than in comprehensive AI readiness. Accounting Information Systems, ERP, and accounting software were widely represented, but explicit content on AI, machine learning, automation,

cybersecurity, and AI governance was much less common. Private university programs also showed higher AICRI scores than public university programs within the purposively selected sample, although this exploratory result should not be generalized nationally.

The study contributes by shifting attention from perceptions of AI to observable curriculum evidence, providing a simple multidimensional benchmarking approach, and documenting cross-institutional variation within Indonesian accounting education. The findings suggest that future curriculum development should move beyond conventional digital accounting systems toward more integrated coverage of AI foundations, automation, advanced analytics, AI-enabled auditing, cybersecurity, data privacy, responsible AI governance, and human-AI professional judgment.

Several limitations should be recognized. The analysis relied on publicly available curriculum information and conservative title-based coding, so AI-related content embedded in syllabi, learning outcomes, or classroom activities may not have been captured. AICRI measures explicit curriculum coverage rather than teaching quality, faculty capability, student AI literacy, or graduate performance. Future research should expand the institutional sample, examine detailed syllabi and learning outcomes, assess inter-coder reliability using richer curriculum evidence, and investigate how curriculum readiness relates to students' AI competence, professional readiness, and graduate employability.

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References

Abdo-Salloum, A. M., & Al-Mousawi, H. Y. (2025). Accounting students' technology readiness, perceptions, and digital competence toward artificial intelligence adoption in accounting curricula. *Journal of Accounting Education*, *70*, 100951. https://doi.org/10.1016/j.jaccedu.2025.100951

Al-Okaily, M. (2025). ChatGPT as an educational resource for accounting students: Expanding the classical {TAM} model. *Education and Information Technologies*, *30*(12), 16671–16685. https://doi.org/10.1007/s10639-025-13391-1

An, Y., Yu, J. H., & James, S. (2025). Investigating the higher education institutions' guidelines and policies regarding the use of generative AI in teaching, learning, research, and administration. *International Journal of Educational Technology in Higher Education*, *22*, 10. https://doi.org/10.1186/s41239-025-00507-3

Assidi, S., Omran, M., Rana, T., & Borgi, H. (2025). The role of AI adoption in transforming the accounting profession: A diffusion of innovations theory approach. *Journal of Accounting \& Organizational Change*, *21*(5), 915–936. https://doi.org/10.1108/JAOC-04-2024-0124

Ballantine, J., Boyce, G., & Stoner, G. (2024). A critical review of AI in accounting education: Threat and opportunity. *Critical Perspectives on Accounting*, *99*, 102711. https://doi.org/10.1016/j.cpa.2024.102711

Chan, C. K. Y. (2023). A comprehensive AI policy education framework for university teaching and learning. *International Journal of Educational Technology in Higher Education*, *20*, 38. https://doi.org/10.1186/s41239-023-00408-3

Cleland, J., MacLeod, A., & Ellaway, R. H. (2023). CARDA: Guiding document analyses in health professions education research. *Medical Education*, *57*(5), 406–417. https://doi.org/10.1111/medu.14964

Dosumu, O., Porumb, V.-A., Stafford, A., & Zimmer, A. (2026). In the wake of ChatGPT: Early reflections on marking open-book online accounting assessments. *Accounting Education*, *35*(4), 425–456. https://doi.org/10.1080/09639284.2025.2487487

Eulerich, M., Sanatizadeh, A., Vakilzadeh, H., & Wood, D. A. (2024). Is it all hype? ChatGPT's performance and disruptive potential in the accounting and auditing industries. *Review of Accounting Studies*, *29*(3), 2318–2349. https://doi.org/10.1007/s11142-024-09833-9

Fogarty, T. J., & Campbell, C. (2024). The big data crossroads: Accounting education and the challenge of 21st century technology. *Journal of Accounting Education*, *68*, 100914. https://doi.org/10.1016/j.jaccedu.2024.100914

Han, H., Shiwakoti, R. K., Jarvis, R., Mordi, C., & Botchie, D. (2023). Accounting and auditing with blockchain technology and artificial intelligence: A literature review. *International Journal of Accounting Information Systems*, *48*, 100598. https://doi.org/10.1016/j.accinf.2022.100598

Haugland Sundkvist, C., & Kulset, E. M. (2024). Teaching accounting in the era of ChatGPT: The student perspective. *Journal of Accounting Education*, *69*, 100932. https://doi.org/10.1016/j.jaccedu.2024.100932

Hilliger, I., Miranda, C., Celis, S., & Pérez-Sanagustín, M. (2024). Curriculum analytics adoption in higher education: A multiple case study engaging stakeholders in different phases of design. *British Journal of Educational Technology*, *55*(3), 785–801. https://doi.org/10.1111/bjet.13374

Lehner, O. M., Ittonen, K., Silvola, H., Ström, E., & Wührleitner, A. (2022). Artificial intelligence based decision-making in accounting and auditing: Ethical challenges and normative thinking. *Accounting, Auditing \& Accountability Journal*, *35*(9), 109–135. https://doi.org/10.1108/AAAJ-09-2020-4934

Luo, J. (2024). A critical review of GenAI policies in higher education assessment: A call to reconsider the ``originality'' of students' work. *Assessment \& Evaluation in Higher Education*, *49*(5), 651–664. https://doi.org/10.1080/02602938.2024.2309963

Mohamed Saad, A. M. A. (2025). Adapting accountants to the AI revolution: University strategies for skill enhancement, job security and competence in accounting. *Higher Education, Skills and Work-Based Learning*, *15*(2), 290–305. https://doi.org/10.1108/HESWBL-10-2023-0295

O'Hara, R. C., Simmons, V., Kogan, G., & Boyle, D. M. (2024). Developing a STEM-designated accounting curriculum. *Journal of Accounting Education*, *69*, 100918. https://doi.org/10.1016/j.jaccedu.2024.100918

Sankofa, N. (2023). Critical method of document analysis. *International Journal of Social Research Methodology*, *26*(6), 745–757. https://doi.org/10.1080/13645579.2022.2113664

Sugahara, S., & Kano, K. (2026). The impact of ChatGPT's advice on professional judgment related with accounting and the role of accounting education. *Journal of Business Ethics*. https://doi.org/10.1007/s10551-026-06365-x

Tobiason, G. (2024). Going small, going carefully, with a friend: Helping faculty adopt lesson-level constructive alignment through non-evaluative peer observation. *Active Learning in Higher Education*, *25*(1), 53–66. https://doi.org/10.1177/14697874221092977

Xu, H., Liu, Y., & Krahel, J. P. (2024). Faculty intention to implement data analytics in the accounting curricula. *Journal of Accounting Education*, *66*, 100882. https://doi.org/10.1016/j.jaccedu.2023.100882