

Research Article

Cite this article: Musa, S., Nurhayati, S., & Boriboon, G. (2025). The Effect of Internships on Graduates' Employability, Soft Skills, and Digital Competence. *Educational Process: International Journal*, 17, e2025306.
<https://doi.org/10.22521/edupij.2025.17.306>

Received May 6, 2025

Accepted June 15, 2025

Published Online July 7, 2025

Keywords: Workplace integrated learning, digital readiness, internship, soft skills, graduate employability

Author for correspondence:

Safuri Musa

 safuri@unsika.ac.id

 Singaperbangsa University, Karawang, West Java, Indonesia

**OPEN ACCESS**

© The Author(s), 2025. This is an Open Access article, distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution, and reproduction, provided the original article is properly cited.

The Effect of Internships on Graduates' Employability, Soft Skills, and Digital Competence

Safuri Musa , Sri Nurhayati , Gumpanat Boriboon 

Abstract

Background/purpose. Internships are widely adopted as a mechanism to enhance graduate employability, yet their role in shaping student readiness, soft skill development, and digital literacy remains underexamined in Indonesia.

Materials/methods. A mixed-methods approach was employed, combining a survey (n=100) of undergraduate students and in-depth interviews. Quantitative measures assessed self-perceived development across: job readiness, communication, adaptability, collaboration, and digital competence. Data were analyzed using descriptive statistics, correlation, and regression techniques. Qualitative narratives were examined through thematic analysis.

Results. High mean scores and significant correlations ($r = 0.66-0.74$) confirmed the positive impact of internships on employability perceptions. Regression analysis identified communication ($\beta = 0.59$), adaptability ($\beta = 0.55$), and software proficiency ($\beta = 0.56$) as key predictors of job readiness. Additionally, 89% of students reported enhanced professional confidence, and 84% gained clarity in their career orientation. Qualitative findings revealed three developmental domains: enhanced role clarity and career orientation, affective and interpersonal skill growth, and digital system navigation. Practical implication: Institutions should strengthen mentorship, contextualize tasks, and embed reflective components to maximize the developmental potential of internships.

Conclusion. Internship participation substantially enhances student employability in Indonesia. The originality of this study lies in its empirical integration of statistical data and student narratives. As the first of its kind in this context, it offers a scalable, evidence-based model for internship design that advances student readiness for digitally mediated, skill-intensive labor markets.

1. Introduction

The rapid reconfiguration of global labor markets—propelled by technological advancement, accelerated automation, and the forces of globalization—has recalibrated expectations for higher education institutions, demanding a recalibration of graduate preparedness. In response, universities are increasingly tasked with cultivating not merely disciplinary expertise, but also versatile, adaptive, and integrative competencies that align with contemporary workforce exigencies. Within this evolving educational-industrial interface, internship programs—conceived under the broader pedagogical construct of work-integrated learning (WIL)—have emerged as a strategic mechanism to operationalize the nexus between theoretical instruction and practical application (Jackson & Dean, 2023). These initiatives are positioned to foster employability by embedding students within authentic work contexts, facilitating the development of professional identity, transversal skillsets, and digital proficiency (Finch et al., 2015; Jiang, 2024; Lia, 2021).

The efficacy of WIL, particularly within emerging economies, has garnered substantial empirical support. In regions where graduate underemployment is structurally entrenched, such as Indonesia, WIL programs are increasingly institutionalized through national policy directives that mandate undergraduate internship participation (Adegbite, 2024; Nguyen et al., 2019). Despite this policy infrastructure, the implementation of WIL remains marked by heterogeneity and inconsistency, driven by institutional capacity disparities, fragmented evaluation frameworks, and uneven digital infrastructure (Chand & Deshmukh, 2019). These contextual challenges compromise the pedagogical potential of internships to function as vehicles for integrated, reflective, and future-oriented learning. Although prior research confirms the general effectiveness of WIL in global contexts, limited studies have examined how Indonesian students themselves perceive their internship experiences, particularly in relation to digital competence and soft skills development. This represents a critical gap in the literature.

Concomitant with these structural dynamics, labor market trends increasingly valorize hybrid skillsets—those that integrate technical fluency with interpersonal agility and ethical discernment. Graduates are now expected to navigate volatile, data-saturated, and interdisciplinary workspaces, where role ambiguity, algorithmic mediation, and globalized collaboration are the norm (Daud et al., 2021; Obermayer, 2023; Tee et al., 2024). In turn, WIL models have expanded to encompass international placements, virtual simulations, and project-based modalities, aiming to cultivate adaptability, agency, and resilience (Jackson & Cook, 2024). However, such innovation has not uniformly translated into equitable access. Socioeconomic status, gender disparities, and institutional stratification continue to shape students' differential engagement with high-quality internship experiences (Jackson & Dean, 2023; Kosasi et al., 2020).

In light of these disparities, scholars advocate for the incorporation of inclusive pedagogical frameworks, notably Universal Design for Learning (UDL), and the integration of adaptive, technology-enhanced evaluative mechanisms (Rao et al., 2024). These approaches are intended to broaden participation, accommodate learner diversity, and align internship pedagogy with the demands of digitally mediated professional environments. Experiential learning, moreover, has demonstrated a distinct capacity to cultivate socio-emotional competencies, such as relational intelligence and reflective self-regulation—dimensions often marginalized in conventional instructional models (Clancy & Vince, 2019; Henderson et al., 2024; Lotfi et al., 2025; Ratningsih et al., 2021).

Despite this pedagogical promise, existing research reveals a critical lacuna in the incorporation of student perspectives in evaluating WIL effectiveness. Prevailing evaluative paradigms remain disproportionately oriented toward institutional and employer metrics, thereby neglecting the lived epistemologies of students as agents of learning (Nyanjom et al., 2023; Sun et al., 2023). In the

Indonesian higher education context, this omission is particularly salient; assessment practices often prioritize administrative compliance and procedural completion over formative reflection and affective learning (Ginting, 2016; Kodrat et al., 2024). Additionally, the granular processes through which soft and digital skills are developed during internships remain empirically underexamined. Digital competence is frequently assumed as a static precondition rather than interrogated as a dynamic construct shaped through interaction with organizational systems. Few studies have theorized the acquisition of platform fluency, procedural adaptability, or critical digital reflexivity within the internship milieu (Halim et al., 2024; Kodrat et al., 2024). Similarly, while affective capacities—such as emotional resilience, stress navigation, and vocational self-concept—are widely acknowledged as integral to professional maturation, they are rarely operationalized within formal assessment regimes (Vo et al., 2022). As a result, there is insufficient empirical clarity on how students internalize, apply, and reflect upon the competencies developed through internship participation, particularly within Indonesia’s fragmented internship landscape.

This study responds to these gaps by offering a student-centered analysis of internship experiences in Indonesia, specifically focusing on digital readiness, employability, and soft skill formation. By integrating qualitative narratives with quantitative measurement, the research offers a nuanced account of how internships mediate developmental processes from the learners’ perspective—a contribution often marginalized in employer-driven assessments. This study intervenes in these gaps by exploring Indonesian undergraduate students’ perceptions of their internship experiences, focusing on three interrelated developmental domains: employability enhancement, soft skill transformation, and digital competency acquisition. Employing a mixed-methods design, the research triangulates quantitative survey findings with qualitative interview data to yield a multidimensional understanding of how students interpret, internalize, and apply their internship learning across diverse contexts.

This investigation is anchored in three interdependent research questions that collectively construct a sophisticated analytical schema for examining the developmental impact of internships. The first line of inquiry scrutinizes how internships contribute to students’ evolving sense of employability, particularly through the consolidation of role clarity, sustained engagement with authentic tasks, and the articulation of future vocational trajectories. The second interrogates the situated processes through which core soft skills—most notably communicative efficacy, adaptive resilience, and collaborative capacity—are not merely acquired but reconstituted within the dynamic social architecture of the workplace. The third explores the acquisition and operationalization of digital competencies, emphasizing platform navigation, procedural autonomy, and the emergence of ethical discernment in digitally mediated professional ecosystems. Together, these interrelated inquiries inform a robust, student-centered conceptual framework that reconceptualizes internships as multidimensional learning ecologies—simultaneously affective, cognitive, and technological—that mediate and accelerate students’ transitions into increasingly hybridized and fluid global labor markets.

2. Literature Review

2.1. Work-Integrated Learning and Employability Development

Work-integrated learning (WIL) has evolved into a pivotal pedagogical model in contemporary higher education, strategically positioned to mediate the persistent gap between disciplinary knowledge and professional competence. By embedding structured workplace experiences within academic programs, WIL offers students a contextualized learning environment in which theoretical constructs can be operationalized, interrogated, and refined through lived practice (Jackson & Dean, 2023). As such, WIL is not merely a supplementary component of higher education but a critical mechanism for fostering the cognitive sophistication, reflexive capacity, and affective resilience

demanding by increasingly volatile and interdisciplinary labor markets. The theoretical underpinnings of WIL are rooted in Kolb's experiential learning theory, which conceptualizes learning as an iterative cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation (Nurhayati & Handayani, 2025). This model provides a foundational lens through which the developmental potential of WIL can be understood, particularly in relation to the acquisition of transferable, high-order capabilities such as critical reasoning, strategic decision-making, and adaptive communication. Additionally, the Employability Capital Growth Model (Grantham & Iachizzi, 2024) expands this framework by incorporating both individual learner trajectories and external stakeholder expectations, foregrounding the relational and contextual dynamics that shape employability as a socially constructed and performative outcome.

Empirical evidence robustly supports the transformative potential of WIL in advancing students' employability profiles. Participation in internships, co-operative education, and applied projects has been consistently associated with increased role clarity, enhanced self-efficacy, and improved alignment between personal aspirations and occupational realities (Chowdhury, 2020; Nguyen et al., 2019; Romkey et al., 2023). Kapareliotis et al. (2019) found that WIL participants showed significantly higher workplace confidence and understanding of job expectations, reinforcing WIL's capacity to convert academic theory into actionable competence. However, Di Meglio et al. (2022) caution that while internships accelerate job attainment, long-term wage gains are less consistent, suggesting the need to view WIL benefits as multifaceted rather than uniformly positive. Studies emphasize that such immersive experiences enable students to trial, recalibrate, and internalize career orientations in ways that conventional classroom instruction cannot replicate (Grantham & Iachizzi, 2024; Jackson & Dean, 2023; Ross & Romkey, 2021). Shen et al. (2024) further illustrate that internship quality moderates the relationship between vocational identity and employability confidence, positioning structured feedback and task authenticity as critical developmental levers.

Longitudinal data further suggest that WIL alumni report accelerated employment transitions, stronger professional networks, and higher retention rates in early career positions (Jackson & Rowe, 2023). Nevertheless, the operationalization of WIL remains fraught with structural inequities and pedagogical inconsistencies. Research identifies critical shortcomings such as uneven program fidelity, limited availability of high-quality placements, and the absence of rigorous evaluative frameworks (Wyatt-Smith et al., 2014). McHugh (2017) highlights that the absence of compensation and inadequate supervision can erode the developmental value of internships, especially in underregulated or resource-scarce contexts. The dominance of employer-centric assessment protocols has also been problematized for obscuring students' subjective learning experiences and undermining their epistemic agency. As a corrective, Jackson and Collings (2018) have called for student-centered WIL designs that prioritize critical reflection, dialogic feedback mechanisms, and scaffolded pathways for personalized professional identity formation. This shift is echoed by Brodsky et al. (2024), who argue that reflective tools and post-practicum strategies significantly shape career clarity, suggesting that WIL success hinges not only on placement access but also on integrative pedagogical design.

A significant development in WIL discourse is the integration of digital literacies as a core domain of employability. With the proliferation of digitally mediated work environments, students must not only demonstrate proficiency in technical tools but also develop critical awareness of platform governance, data ethics, and algorithmic bias (Adegbite & Hoole, 2024). Consequently, contemporary WIL initiatives must reconceptualize digital competence as an embedded, cross-cutting learning outcome rather than an ancillary skillset. Di Meglio et al. (2022) reinforce this perspective, showing that satisfaction with WIL is strongly linked to ICT skill development, highlighting the importance of integrating technology-rich tasks into internship design. WIL represents a theoretically rich and empirically substantiated approach to bridging academia and industry. Its value lies in its capacity to

produce graduates who are not only technically competent but also capable of navigating the ontological and ethical complexities of professional life. The future efficacy of WIL hinges on the degree to which it can be inclusively designed, reflexively delivered, and continuously aligned with the epistemological demands of a rapidly evolving global economy. However, as Rose (2023) notes, the motivational orientation of students also plays a mediating role in the learning outcomes derived from WIL, emphasizing the need to tailor internship structures to varying learner dispositions.

2.2. Soft Skills Acquisition through Work-Integrated Learning

The acquisition of soft skills—broadly encompassing interpersonal communication, adaptability, teamwork, emotional regulation, and contextual problem-solving—has emerged as a pedagogical and strategic priority within higher education’s response to evolving labor market demands. While traditional didactic instruction remains foundational for disciplinary knowledge transmission, it is increasingly critiqued for its inadequacy in developing socially embedded, performance-based competencies essential for 21st-century employment. In response, experiential learning—particularly through internships and structured work-integrated learning (WIL) initiatives—has been positioned as a crucial modality for translating theoretical insights into embodied professional practice (Jackson & Collings, 2018). Experiential learning is distinguished by its emphasis on immersion, participation, and reflective praxis within authentic, often unpredictable, organizational settings. Billett’s sociocultural framework reconceptualizes learning as a negotiated, contextually responsive process in which students engage with workplace structures, actors, and expectations to co-produce meaning and refine their capabilities (Ng, 2022). These environments displace didactic hierarchies in favor of distributed cognition and relational learning, offering students opportunities to develop soft skills not as abstract ideals but as situated performances embedded in task completion, interpersonal dynamics, and adaptive improvisation. Communication, for example, is cultivated as students learn to navigate organizational discourse, calibrate tone and content across institutional hierarchies, and mediate client-facing interactions (Stefanovic et al., 2021). Teamwork—frequently reduced to nominal group assignments in academic contexts—takes on heightened significance within internship settings, where project outcomes are contingent on genuine collaboration, distributed expertise, and shared accountability (Li et al., 2024). Recent studies confirm that communication remains the most reported soft skill gained through internships, particularly when accompanied by mentoring and feedback mechanisms (Ismail et al., 2024; Tavitiyaman et al., 2025).

The internship context introduces students to relational practices such as co-leadership, intra-team negotiation, and the calibration of mutual trust, thereby fostering a deeper and more complex understanding of collaborative work than conventional coursework permits (Downs et al., 2024; Duran-Riquelme et al., 2024). However, Pantaruk et al. (2025) and Srivastava and Kuri (2021) note that this collaborative development varies by context, with students in the hospitality sector reporting stronger gains in teamwork than those in technical fields. This suggests that disciplinary environments influence the extent to which internships foster relational fluency.

Adaptability and stress regulation have also emerged as critical soft skill dimensions, particularly in internships characterized by task ambiguity and high performance demands (Downs et al., 2024). Interns often report growth in resilience and emotional regulation, particularly when challenged by unpredictable workflows or feedback under pressure. These findings are echoed in Ocampo et al.’s (2020) career adaptability model, where curiosity and confidence are significantly strengthened through workplace exposure. Nonetheless, some studies, such as those by Bennett et al. (2017), emphasize that such adaptability may be accompanied by internal conflict or emotional dissonance, especially when student expectations clash with the real-world complexity, highlighting the affective weight of soft skill development.

Notably, individual characteristics and the quality of mentorship have been shown to mediate the acquisition of soft skills. Rose (2023) finds that learning orientation strongly predicts how interns perceive and act on developmental opportunities. Gryzenkova et al. (2023) further highlight that leadership and initiative often emerge only in supportive environments, revealing an interaction between structural enablers and student disposition. These findings point to a layered model of soft skill development, where organizational context, individual traits, and pedagogical design converge to shape outcomes.

A cross-disciplinary synthesis reveals further complexity. While social science students tend to excel in expressive and relational skills, STEM students often experience more growth in self-management and analytical collaboration under real-world constraints (Tavitiyaman et al., 2025). This asymmetry underscores the importance of designing internship models sensitive to field-specific learning styles and role expectations. WIL serves as a high-impact modality for cultivating soft skills that are increasingly prioritized in volatile labor markets. Yet, the effectiveness of such development is neither automatic nor uniform—it is mediated by mentorship quality, institutional structure, individual agency, and disciplinary norms. Future internship designs must intentionally scaffold these environments to support emotional development, relational fluency, and self-regulation competencies central not only to employability, but to long-term professional sustainability.

2.3. Essential Dimensions and Development of Digital Competence Through Internships

Digital competence in the contemporary workplace is best understood as a composite, adaptive construct that integrates technical proficiency, epistemological flexibility, and ethical digital praxis. It encompasses an individual's capacity not only to operate within digital infrastructures but to interrogate and strategically navigate them in contextually fluid environments. Foundational to this framework are the intertwined domains of technological fluency, knowledge synthesis, and digital citizenship (Camino et al., 2021; López García et al., 2022). At the operational core, digital competence involves mastery of technical systems and practices, including digital engineering methodologies, coding fluency, digital content design, and sophisticated data management. These competencies form the basis for engaging with enterprise resource systems, automating workflows, and producing value through digital outputs in complex organizational ecologies (Budai et al., 2023). Additionally, digital competence requires a proactive stance on cybersecurity and system integrity, implicating not just technical safeguards but an embedded ethical orientation toward digital responsibility (Flek & Ugnich, 2023).

The communicative dimension of digital competence is equally critical, especially in professional environments characterized by hybrid and asynchronous collaboration. Proficiency in digital communication tools enables coordination, relationship management, and knowledge co-construction, which are indispensable in dynamic team-based settings (Budai et al., 2023; Flek & Ugnich, 2023; Marsegi et al., 2023; Nursanti & Nurhayati, 2024). Complementing this is the capacity for self-directed learning, agile adoption of emerging technologies, and project-based digital coordination—abilities that underscore the supra-disciplinary nature of digital expertise in modern labor markets (Borovskikh & Kipervar, 2019).

Internships constitute fertile ground for cultivating these competencies, offering immersive, situated contexts in which students encounter the realities of digital professional life. These environments, often characterized by ambiguous structures and high task variability, compel learners to engage in experiential knowledge-making, develop procedural intuition, and enact adaptive decision-making under pressure (Celestial-Valderama, 2023; Keawtavon et al., 2023). Pike (2023) and Petersson (2021) underscore that engaging with unfamiliar platforms during internships enhances not just task competence but also digital self-efficacy, particularly when supported by feedback-rich

environments. Structured onboarding and guided exposure significantly shape digital learning outcomes. Studies show that when students receive digital scaffolding—such as tutorials, peer mentorship, or platform walkthroughs—they experience faster adaptation and less technological anxiety (Abas et al., 2025; Tammaro et al., 2025). Conversely, when onboarding is absent or minimal, students rely on improvisation and trial-and-error navigation, which can lead to uneven learning outcomes or reinforce self-doubt (AlGhamdi, 2022).

Interns also develop “procedural intuition”—the capacity to understand a system’s logic and interface affordances without explicit instruction (Chue et al., 2024). This intuitive fluency allows them to experiment with new software, navigate digital errors, and make autonomous decisions under performance pressure. Yet, this development is uneven across fields; engineering students often report more comfort with systems logic, while education or social science students emphasize the affective and ethical challenges of platform use (S. McHugh et al., 2022). Beyond functionality, critical digital reflexivity has emerged as a higher-order construct within internship learning. Interns begin to question how platforms surveil their activity, store data, or subtly influence task completion. This mirrors findings from Samuelsson and Lindström (2022) and Cheng and Lee (2024), who demonstrate that ethical reasoning and awareness of surveillance architecture are emergent competencies that cannot be taught abstractly but must be developed through lived practice. This dimension of digital literacy transcends tools and techniques; it encompasses a growing capacity to perceive and interrogate the invisible power dynamics embedded in digital environments. Conceptual models such as DigiCoM (Steinlechner et al., 2021) offer a structured lens through which digital competence can be evaluated as a function of both task-oriented capabilities and reflective judgment. This reinforces the need to reconceptualize digital competence not as a static toolkit, but as a dynamic, contextually emergent repertoire of skills, dispositions, and practices—shaped through iterative participation in digital ecosystems and refined through experiential modalities, such as internships (Bönninger et al., 2024). However, studies such as Kang & Girouard (2022) and Al-Ayash et al. (2025) argue that without explicit ethical frameworks and institutional support, these insights may remain underdeveloped or disconnected from long-term digital professionalism.

3. Methodology

3.1. Study design

This study employed a sequential exploratory mixed-methods design to comprehensively examine the influence of undergraduate internship participation on students’ employability, soft skill development, and digital readiness within the Indonesian higher education landscape. Grounded in Creswell and Creswell’s (2017) framework, the research design strategically integrated qualitative and quantitative approaches to achieve both depth and breadth of understanding. The qualitative phase utilized semi-structured interviews to elicit students’ reflective accounts of skill acquisition and adaptation. These insights informed the construction of a structured quantitative instrument administered in the subsequent phase to evaluate patterns of perceived competence across a broader cohort. This sequencing reflects a design logic in which exploratory qualitative themes are used to contextualize and generate measurement items, thereby strengthening construct validity in the quantitative phase. Figure 1 presents the design flow, showing how each phase informed the next.

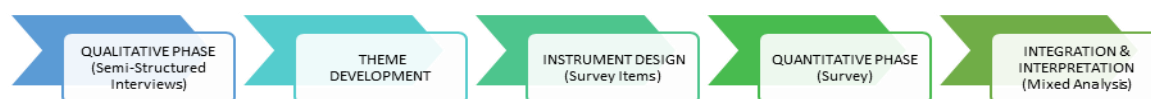


Figure 1. Mixed Method Research Design Diagram

3.2. Participants

A stratified random sampling technique was implemented to ensure a representative sample encompassing diverse academic disciplines, institutional affiliations, and geographic locations within Indonesia's higher education landscape. Participants were selected from five provinces across Java—West Java, Central Java, Jakarta, Yogyakarta, and Banten—chosen to reflect heterogeneity in educational quality, internship placement types, and regional economic development. The study included 100 undergraduate students ($N = 100$) who met the inclusion criteria of having completed an internship lasting a minimum of eight weeks during the same academic year and being currently enrolled in an accredited university. Notably, all 100 participants were also interviewed using the semi-structured interview protocol, ensuring that both qualitative and quantitative data were collected from the same cohort. Stratified sampling facilitated proportional representation across key demographic parameters, including field of study (STEM, humanities, and social sciences), gender, and sectoral internship placement (public, private, NGO). This sampling strategy was employed to minimize selection bias and enhance the external validity and generalizability of the findings. Participants from both urban and semi-urban academic institutions were proportionally represented, ensuring a holistic and context-sensitive understanding of internship-related learning outcomes across diverse educational and organizational contexts. Participants were recruited through institutional internship offices and academic advisors, and they voluntarily agreed to participate in both the interview and survey phases.

3.3. Data collection tools

Data collection was conducted using two primary instruments to ensure comprehensive coverage of the study's objectives. The first instrument was a structured questionnaire comprising 25 Likert-scale items (1 = strongly disagree to 5 = strongly agree), designed to assess students' self-perceived development across five core domains: job readiness, professional communication, adaptability, collaboration, and digital competency. Sample items included: "I feel more confident about entering the workforce after my internship" and "I was able to adapt effectively to new technologies during my internship." In addition to these constructs, the questionnaire also collected demographic information, including age, gender, academic major, and the sector of internship placement. The instrument was pilot-tested with 20 respondents to refine item clarity, improve construct alignment, and ensure internal consistency. The second instrument consisted of a semi-structured interview guide developed to explore participants' experiential narratives in greater depth. Interview questions focused on skill acquisition, adaptation to workplace culture, supervisory dynamics, and reflections on the use of digital tools and systems encountered during the internship. Example prompts included: "Can you describe a moment when you had to adjust to an unexpected task or challenge during your internship?" and "How did your internship change the way you communicate in professional settings?" Interviews were conducted in Bahasa Indonesia to preserve linguistic accuracy and cultural sensitivity, thereby enhancing the authenticity of the data and the richness of interpretation. All interviews were audio-recorded (with participant consent), transcribed verbatim, and translated into English for analysis.

3.4. Validity of data collection tools

The validity of the data collection instruments was ensured through expert review, pilot testing, and psychometric analysis. The questionnaire was reviewed by three academic specialists in employability and work-integrated learning, who evaluated the item's relevance, clarity, and alignment with the conceptual constructs. Pilot testing ($n = 20$) was conducted to assess linguistic clarity and scale performance. Exploratory factor analysis confirmed the dimensionality of the five targeted constructs. Internal consistency reliability was supported by Cronbach's alpha values

exceeding 0.80 across all subscales. The interview guide was reviewed and refined based on feedback from qualitative research experts. Pilot interviews ($n = 5$) were used to fine-tune prompts for clarity and depth. Member-checking was employed during transcription to confirm the accuracy of representation. To enhance analytical trustworthiness, two coders independently analyzed the qualitative transcripts and reached agreement on 85% of the initial codes. Discrepancies were resolved through peer debriefing sessions. A codebook was developed to guide thematic analysis, featuring codes such as “communication under pressure,” “adaptive learning through failure,” and “navigating digital systems.” Triangulation between survey and interview data enhanced construct validity. Reflexivity was maintained through journaling and peer debriefing to mitigate researcher bias.

3.5. Data collection procedure

Quantitative data were analyzed using descriptive and inferential statistical methods to identify overarching patterns in internship-related learning outcomes. Descriptive statistics—means, standard deviations, and frequency distributions—were used to profile self-perceived growth across skill domains. Pearson correlation analysis assessed associations between core variables. Multiple regression analysis was conducted to evaluate the predictive strength of individual skill domains on perceived employability. Statistical computations were executed using SPSS Version 28. Prior to regression analysis, assumption checks confirmed normality (Shapiro-Wilk test, $p > 0.05$), linearity, and homoscedasticity (residual plots), as well as the absence of multicollinearity ($VIF < 2$).

Thematic analysis of the qualitative data followed Braun and Clarke’s (2019) six-phase framework: (1) data familiarization, (2) initial coding, (3) theme identification, (4) theme review, (5) theme definition, and (6) report generation. Manual coding was conducted and cross-validated by a second coder to enhance interpretative reliability. A coding tree diagram was developed to represent the emergence of key conceptual categories such as “communication under pressure,” “adaptive learning through failure,” and “digital system overload.” Importantly, insights from the qualitative phase directly informed the structure and content of the quantitative instrument. For instance, interview responses about digital task improvisation were used to generate items like: ‘I was able to troubleshoot unfamiliar digital tools independently.’ This integration ensured that the survey reflected grounded experiential insights, bridging the two methodological phases. The integration of statistical modeling with inductive thematic interpretation enabled a triangulated approach to data synthesis, reinforcing the validity and depth of analytical outcomes.

3.6. Ethical considerations

This study rigorously adhered to the ethical standards governing educational research. All participants were comprehensively informed about the objectives, scope, and methodological procedures of the study, which focused on examining student learning outcomes derived from internship experiences within the Indonesian higher education context. Voluntary and informed consent was secured from each participant prior to data collection, with explicit guarantees of anonymity, confidentiality, and the right to withdraw at any stage. These safeguards ensured compliance with ethical and regulatory norms applicable to non-invasive social science research. The ethical standards established by Singaperbangsa Karawang University were strictly followed, particularly in regard to the protection of participant rights and the integrity of research data. Given the descriptive, non-interventional nature of the study and the absence of personal or sensitive data, formal review by a national ethics committee was not deemed necessary. Nonetheless, all ethical protocols—including informed consent documentation, secure data storage, and anonymization of interview transcripts—were strictly implemented to uphold research integrity, ensure transparency, and safeguard participant well-being throughout the study’s duration.

4. Results

4.1. Internships Enhance Employability

This section delineates the statistical contours of students' perceptions of professional readiness following structured internship experiences. Drawing upon a dataset of 100 internship participants, the analysis reveals elevated mean scores across all measured dimensions, each exceeding the scale's neutral midpoint. The lowest mean, associated with Task Familiarity ($M = 3.85$), nevertheless signifies a broadly favorable assessment of skill development within unfamiliar professional contexts.

Inferential statistics reinforces these descriptive trends. Correlation coefficients ranging from 0.66 to 0.74, all significant at the $p < 0.01$ level, reveal robust linear associations between key constructs, including perceived readiness, role clarity, and networking experience. Similarly, standardized regression coefficients (β) spanning from 0.51 to 0.61 underscore the predictive utility of internship-derived experiences in shaping self-assessed employability.

Table 1. Survey Results on Internship Impact on Employability

Variable	Mean	Standard Deviation	Correlation (r)	Regression (β)
Perceived Job Readiness	4.20	0.68	0.74**	0.61**
Role Clarity after Internship	4.05	0.72	0.71**	0.58**
Task Familiarity	3.85	0.75	0.68**	0.53**
Networking Experience	3.90	0.70	0.66**	0.51**
Interest in Future Career Path	4.15	0.69	0.73**	0.60**

As shown in Table 1, the statistical results demonstrate significant positive associations between internship participation and perceived employability. In particular, role clarity, perceived job readiness, and networking experience were identified as the strongest predictors of overall employability confidence, confirming the importance of these factors in shaping students' perceptions of job market preparedness. Eighty-nine percent of participants reported enhanced confidence in their professional readiness, a sentiment attributed to their immersion in authentic work environments. Participants consistently emphasized that internships moved them beyond theoretical abstraction and into the procedural, temporal, and interpersonal realities of the workplace. One intern described this transition as follows: "I truly felt I had transitioned into the workforce. It was not merely a learning exercise; I was entrusted with managing sensitive documentation and engaging with clients professionally." These experiences were especially formative for students in social science and humanities disciplines, many of whom had minimal exposure to structured operational settings prior to their placements.

The internship also functioned as a crucible for vocational discernment. Of the total respondents, 84% stated that their internship helped them gain clarity regarding post-graduation aspirations. Thirty-nine individuals revised their intended career trajectories entirely, whereas others articulated more refined and contextually grounded ambitions. A business student recounted: "The internship clarified what I wish to avoid in a future job. Repetitive office routines left me unfulfilled, prompting a pivot toward more creative industry sectors." This process of occupational differentiation, achieved through first-hand role immersion, was consistently cited as one of the most impactful features of the internship experience. Beyond skill acquisition, internships enabled participants to develop preliminary professional networks. Sixty-one percent of respondents reported interaction with stakeholders outside their immediate supervisory circle. Within this subgroup, one-third received mentoring or career advice, and twelve were invited to apply for formal roles post-placement. These connections facilitated both immediate confidence-building and the cultivation of longer-term career

pathways. "I supported a notary throughout the placement and was later invited to apply for a full-time position upon graduation. It felt like a significant professional door had opened." Table 2 presents a synthesis of the emergent qualitative themes, each paired with a representative quote and corresponding frequency across the survey sample. These thematic aggregates illustrate how students' experiences clustered around dimensions of readiness, adaptability, identity formation, and professional integration.

Table 2. Qualitative Themes and Frequencies of Respondents' Experiences

Key Dimension	Employability	Description	Examples of Respondents' responses	Frequency (n=100)
Practical Readiness		Students reported improved confidence through task-specific assignments	"Before this internship, I had never worked in a team or dealt with clients. It was all theory until now."	89 (88.5%)
Exposure to New Task Domains		Many interns assumed responsibilities outside their academic preparation	"I never thought I'd be responsible for managing sensitive legal files. It was stressful but transformative."	64 (64.0%)
Career Clarification and Realignment		Internships helped participants identify and evaluate long-term occupational goals	"After trying this, I know I want to work in policy—not operations. This internship changed my focus entirely."	39 (39.0%)
Professional Networking and Informal Mentorship		Participants engaged with senior professionals and broadened their career outlook	"My supervisor introduced me to their partners, which gave me the chance to ask about applying post-graduation."	61 (61.0%)
Job Offers and Future Recommendations		A smaller subset received tangible offers of employment or post-program follow-up	"I was told that when I graduate, I'd be welcome to apply. That recognition was the biggest motivator for me."	12 (12.0%)

Thematic analysis of the qualitative responses in Table 2 confirms the significant role internships play in enhancing students' practical readiness, career clarity, and professional networks. Notably, the high frequency of responses related to "practical readiness" (88.5%) suggests that the internship experience provides a strong foundation for employability, positioning students as more confident and competent in their professional roles. The integration of quantitative and qualitative data provides a multilayered understanding of how internships facilitate employability. On the one hand, quantitative findings confirm the statistically significant role of role clarity, task familiarity, and network formation in shaping readiness perceptions. On the other hand, qualitative narratives elaborate how these elements are navigated and internalized within the lived realities of students. Participants described navigating organizational hierarchies, managing professional expectations, and adjusting their self-concept in response to the norms of workplace culture. This evolution in personal and professional identity is critical for employability and illustrates the epistemological richness of experiential learning. Moreover, the internships enabled students to assess the congruence between personal interests and labor market demands, a task often underdeveloped in traditional academic pathways. Importantly, many students used the internship space to recalibrate not only their career goals but their understanding of work itself—as a site of ethics, discipline,

negotiation, and possibility. In aggregate, the findings position internships as powerful accelerants for professional socialization. They enable the acquisition of technical competencies, foster self-authorship in career decision-making, and facilitate the early construction of social capital. For institutions of higher education, this points to the imperative of embedding internships as central curricular components within employability-driven pedagogies. Likewise, for policymakers and workforce development practitioners, the evidence reinforces the utility of structured experiential learning as a bridge between academic formation and labor integration. RQ1 findings indicate that internships play a crucial role in boosting students' employability by fostering professional confidence, clarifying career aspirations, and helping build professional networks. Both quantitative and qualitative results highlight the significant influence of internships on preparing students for the workforce.

4.2. Soft Skills Acquisition and Transformation

Internships constitute a transitional landscape wherein students negotiate the liminal space between academic knowledge and professional practice. Within this complex ecology, soft skills—defined as a constellation of interpersonal, communicative, emotional, and collaborative capacities—emerge as essential competencies in the architecture of graduate employability. These skills are not imparted through formal instruction but cultivated through sustained exposure to relational, task-based, and affectively charged workplace situations. Drawing upon a mixed-methods dataset comprising 100 survey responses and 100 semi-structured interviews, this section explores the emergence, articulation, and perceived utility of soft skills acquired through internships. The analytical framework prioritizes convergence between reported frequencies, statistical associations, and narrative depth to interrogate how students internalize the affective and procedural logics of professional environments.

Interns consistently reported significant recalibration in their communication repertoires. Initially anchored in academic or informal modalities, their discourse evolved toward greater audience sensitivity, strategic clarity, and institutional appropriateness. This shift was described as a key factor in acquiring professional legitimacy. "Being in meetings taught me how to communicate with purpose—when to speak, how to phrase disagreement, and how to adjust based on who's listening." Communication, in this context, is both a linguistic tool and a social performance. Its mastery signals not only competence but alignment with the discursive norms and hierarchies of professional culture.

Adaptability emerged as a core competency forged under pressure. Participants recounted instances of abrupt task reassignments, contradictory instructions, and time-sensitive deliverables. These conditions required emotional composure, improvisation, and reframing of failure as feedback. "Some days I had to abandon my task list entirely. It taught me to be okay with uncertainty and still find a way to deliver." Emotional regulation was tightly linked to adaptability, especially when navigating critique or role ambiguity. Over time, students developed meta-cognitive resilience—learning not merely to cope but to recalibrate expectations and mobilize strategic calm in complex settings.

The transition from academically structured group work to interdependent professional collaboration challenged interns to develop new relational literacies. Participants reflected on learning to share authority, mediate conflict, and build procedural trust. "I thought teamwork was just dividing the work. But it was more about trust—knowing someone would back me up when I hit a wall." Teamwork was reconfigured not as coordination but as dynamic co-construction. This domain demanded not only cognitive alignment but emotional receptivity and the ability to tolerate ambiguity within collective decision-making. Table 3 below presents a synthesis of qualitative findings on participants' soft skills development during the internship.

Table 3. Qualitative Themes and Reported Frequencies on Soft Skills

Soft Skill Domain	Description	Examples of participants' responses	Frequency (n=100)
Communication Skills	Growth in clarity, audience sensitivity, and multimodal expression	"Now I know how to communicate clearly, formally, and respectfully depending on who I'm talking to."	85 (85.0%)
Adaptability and Stress Regulation	Development of resilience in response to unpredictability and task overload	"It was hard at first, but I became someone who can stay composed under stress."	79 (79.0%)
Teamwork and Collaboration	Increased competence in conflict negotiation, co-dependence, and shared accountability	"I learned how to work in a team, solve conflicts, and make sure everyone contributes equally."	73 (73.0%)

Thematic distribution confirms the centrality of communication (85%), adaptability (79%), and teamwork (73%) as domains of both high salience and developmental challenge. The prevalence of these themes suggests that internships offer uniquely fertile conditions for acquiring socio-relational fluency under real-time constraints.

Table 4. Survey Results on Self-Reported Soft Skills Development

Variable	Mean	Standard Deviation	Correlation (r)	Regression (β)
Verbal and Written Communication	4.18	0.65	0.72**	0.59**
Adaptability and Problem Solving	4.05	0.70	0.70**	0.55**
Teamwork and Collaboration	3.95	0.68	0.68**	0.53**
Emotional Regulation and Stress Coping	3.88	0.74	0.66**	0.50**

Based on the Table 4, quantitatively, all mean scores exceed 3.85, reflecting strong consensus regarding skill development. The relatively low standard deviations in communication (SD = 0.65) and teamwork (SD = 0.68) suggest high intersubjective alignment among respondents, implying these were common, salient learning outcomes. Correlations between skill domains and perceived job readiness ($r = 0.66$ – 0.72) were both strong and statistically significant ($p < .01$), indicating that participants who experienced growth in these areas were substantially more likely to rate themselves as employment-ready. The regression model confirms this predictive validity: communication ($\beta = 0.59$) emerged as the strongest predictor, followed by adaptability ($\beta = 0.55$), teamwork ($\beta = 0.53$), and emotional regulation ($\beta = 0.50$). These coefficients reflect the differential but interdependent contributions of each domain to employability confidence. These findings empirically validate the claim that internships function as high-impact experiential learning platforms. They scaffold not only technical learning but also psychosocial growth, fostering emotional self-awareness, communicative authority, and the ability to navigate complexity in collaborative systems.

Patterns of skill acquisition varied across demographic and academic categories. Female participants were more likely to cite gains in assertiveness and negotiation, especially in high-stakes

interpersonal scenarios. Male interns emphasized growth in emotional self-management under performance pressure. STEM students initially struggled with affective communication and collaboration but reported substantive improvement, particularly in multidisciplinary project settings. Conversely, students from humanities and social sciences excelled in expressive domains yet expressed difficulty acclimating to procedural rigidity and accountability metrics. These divergences reveal that soft skills are not monolithic assets, but rather context-contingent competencies shaped by prior learning ecologies, institutional structures, and evolving self-conceptions. The internship environment, when sufficiently complex and mentored, enables students to recalibrate personal habits and expand relational repertoires, thereby enhancing long-term professional viability. RQ2 findings reveal that internships play a crucial role in cultivating soft skills—specifically communication, adaptability, and teamwork—across a variety of professional environments. The synthesis of both qualitative and quantitative data emphasizes the complex, multidimensional nature of these competencies, underscoring their critical influence on sustained employability and long-term professional development.

4.3. Digital Literacy, Technology Adaptation, and Readiness for a Digitized Workplace

In contemporary workspaces increasingly mediated by software platforms and data systems, digital literacy has evolved from a supplementary attribute to a structural imperative. Internships—especially those situated within high-tech, information-rich organizational settings—have emerged as sites where students must navigate digital architectures, respond to technological ambiguity, and operationalize digital reasoning under performance constraints. This theme interrogates how interns engaged with the digital infrastructures of the workplace, how they adapted to new platforms and tasks, and how these experiences shaped their self-efficacy and professional preparedness. Drawing on mixed-methods data from 100 survey respondents and 100 qualitative interviews, the analysis delineates three intersecting dimensions of digital competency: software fluency, procedural adaptability, and ethical reflexivity. We foreground the layered character of digital learning—where operational skills intersect with decision-making under duress, and where digital environments shape not only what interns do but how they interpret their agency within complex systems.

While students often entered internships with confidence derived from everyday digital engagement (e.g., social media, online research), many quickly encountered systems—such as CRM databases, enterprise software, and cloud-based project tools—that required new modes of interaction. Initial self-perceptions of digital fluency often gave way to awareness of infrastructural complexity. "I thought I was tech-savvy, but I had never used any of the platforms they had in the office. I had to learn everything from scratch." Interns described their transition from consumer-level use to professionally embedded digital practice as cognitively demanding. Success depended less on pre-existing skill and more on informal strategies: observing workflows, seeking peer support, and developing self-directed experimentation. Thus, digital competence in these environments was constructed through improvisational, context-dependent learning.

Interns frequently reported being tasked with software systems or digital tasks with minimal training. In these scenarios, interns cultivated procedural intuition—the ability to navigate systems by deciphering interface cues, anticipating logic structures, and troubleshooting under time constraints. "There was no tutorial—just a login and a deadline. I had to explore, mess up, ask around, and figure it out." Adaptability, then, was not a static trait but an emergent response to institutional opacity. The development of digital autonomy required emotional composure, pattern recognition, and repeated iteration. Interns learned not only how to use digital tools but how to learn through them. Although less frequently cited, some interns began to articulate higher-order reflections on the digital governance structures within their organizations. They became aware of activity tracking, data capture protocols, and the behavioral nudges embedded within system interfaces. "I realized the system tracked everything—logins, edits, even reading time. It made me more careful about what

I clicked and how I managed my tasks." These moments signaled an emergent critical digital literacy—where students not only engaged with digital environments but reflected on their embedded power structures. Such awareness suggests the early formation of digital citizenship competencies within work-based learning. Table 5 presents data on the participants' survey metrics on digital readiness.

Table 5. Survey Metrics on Digital Readiness

Variable	Mean	Standard Deviation	Correlation (r)	Regression (β)
Operational Software Proficiency	4.02	0.68	0.69	0.56
Adaptation to New Platforms	4.15	0.72	0.72	0.59
Digital Problem Solving	3.95	0.71	0.67	0.53
Information Management Across Systems	3.88	0.74	0.65	0.50
Awareness of Data Ethics & Security	3.60	0.80	0.61	0.47

As shown in Table 5, mean scores across all five domains suggest broad-based digital development. Particularly notable is the high mean for adaptation to new platforms ($M = 4.15$) and operational software proficiency ($M = 4.02$), which reflect students' recognition of growth in high-use, high-responsibility digital contexts. The relatively low standard deviations for these indicators—especially in software use ($SD = 0.68$) and digital problem-solving ($SD = 0.71$)—suggest consistency in perceived development across diverse participants. Correlations with perceived job readiness were both strong and statistically significant ($r = 0.61$ – 0.72), underscoring the contribution of digital skills to broader employability perceptions. Regression analysis confirmed that platform adaptability ($\beta = 0.59$) and software proficiency ($\beta = 0.56$) were the most powerful predictors of self-assessed readiness. Interestingly, even lower-frequency reflections on ethics and surveillance ($M = 3.60$) held significant explanatory weight ($\beta = 0.47$), reinforcing the integrative role of critical digital reflexivity. Collectively, these results suggest that digital readiness is not a monolithic construct but an integrated matrix of operational skill, adaptive reasoning, and ethical orientation. Table 6 presents qualitative data on participants' digital skill development during the internships.

Table 6. Thematic Frequencies of Digital Skill Development

Digital Skill Theme	Description	Examples of participants' responses	Frequency (n=100)
Learning New Software Without Training	Interns had to learn platforms (e.g., CRM, ERP) independently with no onboarding support.	"There was no tutorial—just a login and a deadline. I had to figure it out myself."	78
Adapting to Multiple Platforms	Students worked across multiple tools (e.g., Trello, Slack, Excel) under performance pressure.	"I had to juggle Excel, Trello, and Slack at once. It was overwhelming at first."	74
Digital Troubleshooting and Problem Solving	Interns resolved system crashes, errors, and interruptions with limited guidance.	"The system crashed before the deadline—I had to restart everything and still deliver."	69

Managing Information Systems	Across	Interns consolidated data from disparate sources and ensured report accuracy.	"I had to pull reports from three systems and merge them into one spreadsheet accurately."	65
Awareness of Digital Ethics and Surveillance		Students reflected on platform surveillance and information governance.	"I noticed they could see everything I clicked—made me more cautious and strategic."	42

The frequency data presented in Table 6 complements the statistical trends of Table 5 by revealing the specific contours of digital learning as experienced by interns. The most cited theme—learning new systems without training (78%)—highlights the informal, often improvised nature of digital onboarding. Students described navigating steep learning curves without documentation, which fostered self-directed learning and technical resilience. Adapting to multiple digital platforms (74%) and troubleshooting systemic disruptions (69%) revealed not only technical agility but also interns' capacity for situational judgment under time constraints. These experiences served as crucibles for the formation of procedural confidence and digital self-efficacy. Information management (65%) demanded higher-order coordination across systems—requiring schema translation, data synthesis, and attention to accuracy in reporting contexts. Though more cognitively demanding, students who succeeded in this domain showed signs of integrative digital reasoning. Finally, 42% of interns reported an emerging awareness of digital surveillance and its implications. While this frequency is lower, its analytical significance is pronounced. These interns described an attunement to the politics of visibility, platform control, and behavioral modulation—offering evidence of nascent digital citizenship shaped through experiential reflection.

Taken together, the insights in Tables 5 and 6 confirm that digital literacy in the internship context is not limited to functional tool use. Rather, it emerges as a multidimensional construct rooted in operational engagement, adaptive problem-solving, and critical reflexivity. Internships thus function not merely as training grounds for tool acquisition, but as developmental spaces for cultivating sophisticated, context-sensitive digital professionals. RQ3 findings demonstrate that internships are instrumental in enhancing digital competencies, extending beyond mere technical skills to include adaptability, problem-solving, and ethical awareness. The convergence of qualitative and quantitative data reveals that digital literacy in internships is a complex, multifaceted construct, integrating practical skills, adaptive strategies, and a growing capacity for critical digital reflection.

5. Discussion

5.1. Internships Enhance Employability

This study substantiates the proposition that structured internship experiences function as powerful catalysts for developing undergraduate employability. Empirical evidence, drawn from both quantitative and qualitative strands, illustrates significant enhancement in dimensions central to career readiness: task competence, role conceptualization, vocational alignment, and professional network formation. Statistically, perceived job readiness ($M = 4.20$), career interest clarity ($M = 4.15$), and role comprehension ($M = 4.05$) demonstrated both elevated mean scores and high intercorrelations with self-reported employability outcomes ($r = 0.66$ – 0.74), with corresponding standardized regression coefficients ($\beta = 0.51$ – 0.61) suggesting considerable predictive validity. The qualitative component reinforced these findings, with 89% of participants reporting a tangible increase in readiness for workplace engagement and 84% articulating a more refined understanding of their professional aspirations following the internship.

Internships are not merely vehicles for applying theoretical knowledge but constitute epistemologically rich, practice-based learning ecosystems. Within these contexts, students navigate and negotiate identity shifts, recalibrate expectations, and test the viability of their academic training against the exigencies of organizational life. The convergence of quantitative indices and reflective testimony provides compelling support for viewing internships as spaces of transformative learning—particularly in relation to the development of vocational self-concept and emergent social capital. The relatively high rating for task unfamiliarity ($M = 3.85$) suggests that novel challenges are not perceived as barriers, but rather as growth opportunities—an interpretation consistent with previous findings (Kapareliotis et al., 2019; Silva & Gamboa, 2014).

Aligned with Shen et al. (2024), who posit that vocational identity clarity mediates employability confidence through internship quality, this study affirms that well-structured internships foster articulation of strengths, clarify long-term career trajectories, and create entry points for early professional integration. These outcomes are further validated by employer-facing studies (Gault et al., 2010), which indicate a pronounced hiring preference for former interns, and by Di Meglio et al. (2022), who note the positive correlation between internship participation and initial employment acquisition. Rothman and Sisman (2016) add disciplinary nuance, showing that business students frequently revise or consolidate their professional intentions through immersion in domain-specific internships.

Beyond cognitive gains, the internships functioned as affective laboratories in which students cultivated self-regulatory strategies and professional resilience. Brodsky et al. (2024) and Rose (2023) emphasized that structured autonomy and targeted feedback contribute significantly to the development of self-efficacy and metacognitive reflection. Similarly, Di Meglio et al. (2019) demonstrated that satisfaction with internships is strongly associated with ICT fluency and problem-solving skills—competencies increasingly essential in contemporary work environments. Furthermore, To and Lung (2020) identified supervisor clarity, perceived task relevance, and interpersonal support as instrumental to internship effectiveness, all of which were echoed in participant narratives within this study.

However, it is necessary to consider the variability of internship outcomes. Prior exposure to workplace settings and high levels of intrinsic motivation may partially explain heightened perceptions of developmental value. Conversely, students assigned to poorly supervised, understructured, or misaligned placements may report diminished benefits. This aligns with McHugh's (2017) critique of unpaid internships, where lack of mentorship and structure compromises learning. Ramani and McHugh (2024) also underscore the role of cultural context, indicating that national norms and sector-specific practices modulate internship impact. Zuo et al. (2020) further complicate this landscape by noting that alignment between internship content and disciplinary specialization—especially in STEM fields—significantly conditions perceived value and post-graduation labor market integration.

The cumulative implications of these findings call for the integration of internships as deliberate, pedagogically structured components of higher education programs. Curricular designs should incorporate reflective scaffolding, mentor-guided supervision, and task-role coherence to ensure that internships serve as meaningful learning environments. Theoretical models such as Social Cognitive Career Theory and the Job Characteristics Model offer robust explanatory frameworks for understanding how autonomy, supervisor interaction, and goal clarity drive motivational and behavioral outcomes (Shen et al., 2024; Stansbie & Nash, 2016). Post-internship debriefing mechanisms, as recommended by Edgar et al. (2020), further augment vocational identity consolidation and sustained employability. This study contributes substantive empirical support to the assertion that internships are high-impact, integrative educational practices. They offer a unique convergence of technical, affective, and relational learning modalities that facilitate the transition

from student to emerging professional. As such, they warrant institutional investment not as ancillary enhancements, but as core elements of employability-centered curricular frameworks in twenty-first-century higher education. This study also contributes to the literature by demonstrating that task-based exposure and role clarity during internships are key drivers of perceived employability, particularly in emerging economies like Indonesia. While existing research, such as Shen et al. (2024), emphasizes the importance of networking in shaping employability outcomes, this study shows that, in the Indonesian context, role familiarity and task immersion are more directly associated with enhanced job readiness. By focusing on these elements, this research offers a new lens for understanding the role of internships in career development, especially in hierarchical and collectivist cultures. Additionally, the study underscores the importance of integrating internships into higher education curricula as core components of employability programs rather than as supplementary experiences. These findings expand our understanding of internships as transformative learning environments that bridge the gap between academic learning and professional career success.

5.2. Soft Skills Development Through Internships

The findings of this investigation confirm the centrality of internships in shaping the non-technical, interpersonal competencies critical to graduates' transition into the professional workforce. Among the array of soft skills examined, communication, adaptability, and collaboration consistently emerged as the most salient developmental outcomes, substantiated through both quantitative measurements and nuanced qualitative narratives. Communication, in particular, stood out as the strongest statistical predictor of perceived employability ($\beta = 0.59$), with adaptability ($\beta = 0.55$) and collaboration ($\beta = 0.53$) also demonstrating substantial influence on students' self-perceived readiness for workplace integration.

Internships function as transitional ecologies in which learners navigate the boundary between academic conceptualism and practical engagement. Within these contexts, communication is not merely transactional but performs a constitutive role in signaling professional legitimacy. Interns learn to modulate tone, calibrate content, and perform discourse with strategic awareness—practices aligned with broader institutional norms and hierarchies (Ismail et al., 2024; Tavitiyaman et al., 2025). Such development suggests not only improved linguistic dexterity but also a growing metacognitive awareness of organizational cultures and communicative politics. Similarly, adaptability emerged not as a predefined disposition but as an outcome of iterative engagement with ambiguity, pressure, and interpersonal complexity. Interns consistently described their evolving capacity to navigate uncertainty through emotional self-regulation and tactical improvisation. These adaptive responses, developed under time-sensitive or poorly defined task conditions, represent a form of situated learning that catalyzes procedural autonomy and self-efficacy (Downs et al., 2024).

Collaborative competence, often reduced to teamwork in formal curricula, was reconceptualized through this study as relational fluency. Students reported learning how to negotiate roles, mediate interdependence, and foster procedural trust within asymmetrical or cross-functional teams. The interplay between individual agency and shared accountability mirrors the dynamics identified in experiential learning literature, wherein social interactions are foundational to professional formation (Gerken et al., 2012). The statistical evidence—reflected in high mean scores for communication ($M = 4.18$), adaptability ($M = 4.05$), and collaboration ($M = 3.95$)—further substantiates the significance of these competencies. The low standard deviations suggest not only a consensus in perceived skill acquisition but also a shared epistemic experience across respondents. These outcomes resonate with existing empirical findings, particularly in internship-heavy sectors such as hospitality, business, and service-oriented fields (Franco-Ángel et al., 2023; Pantaruk et al., 2025; Srivastava & Kuri, 2021).

Crucially, these competencies were not cultivated in isolation. Internship experiences that incorporated structured supervision, reflective dialogue, and mentorship were more likely to yield sustained developmental gains. Mentoring relationships provided cognitive scaffolding, while dialogic feedback mechanisms allowed interns to engage in real-time performance recalibration. Peer scaffolding, through collaborative tasks and informal exchange, further enriched the learning ecology (Blagojevic et al., 2024; Nugent & Faucette, 2004). However, variation in skill development trajectories was evident across gender and disciplinary contexts. Male participants emphasized growth in emotional regulation under performance stress, whereas female participants underscored advancements in assertive communication and professional articulation. These gendered narratives may reflect broader sociocultural constructs surrounding professional behavior and interpersonal norms. Additionally, STEM students initially reported difficulty in relational engagement but showed marked improvement when situated in interdisciplinary or team-based projects. In contrast, humanities and social science students, while proficient in expression, reported challenges in adapting to hierarchical structures and time-bound procedural accountability. Such divergences affirm that soft skill acquisition is a socially situated, field-contingent process, shaped by both prior educational ecologies and current contextual demands.

The construct of adaptability, in particular, warrants deeper theoretical attention. Aligning with Ocampo et al.'s (2020) model of career adaptability, interns in this study demonstrated growth across multiple subdomains—concern, control, curiosity, and confidence—as they encountered novel challenges. These findings support the interpretation of adaptability as a meta-competency that emerges through intentional exposure to dissonance, autonomy, and critical reflection. Taken together, the evidence advocates for a paradigmatic reframing of internships within higher education. Rather than conceptualizing internships as supplementary or vocational add-ons, they should be regarded as integral to academic curricula—serving as praxis-intensive, socially mediated sites for professional identity construction. Institutions must invest in pedagogically robust internship models that incorporate feedback loops, guided reflection, and structured supervision. Equity considerations must also be central: students' differential access to quality placements and supportive environments must be acknowledged and addressed to ensure that developmental outcomes are not stratified along socio-economic, disciplinary, or gendered lines. Ultimately, internships offer far more than opportunities to observe or apply knowledge. They operate as formative arenas where students internalize the behavioral, affective, and procedural literacies required for sustained professional engagement. Recognizing internships as legitimate and intentional educational spaces is essential to preparing ethically grounded, socially agile, and professionally resilient graduates in an increasingly dynamic and uncertain world of work.

The contribution of this study lies in its examination of how internships foster the development of key soft skills—communication, adaptability, and collaboration—as central to the process of career readiness. While previous research, such as Franco-Ángel et al. (2023) and Pantaruk et al. (2025), has emphasized the role of soft skills in employability, this study highlights the contextual factors, such as mentorship, supervision, and interdisciplinary collaboration, that shape how these competencies are acquired. Our study's contribution is significant in its demonstration that internships serve not only as spaces for technical learning but as environments where students cultivate emotional intelligence and relational agility—skills that are crucial for success in the modern workplace. Additionally, this research extends Ocampo et al.'s (2020) work on career adaptability, providing empirical evidence that adaptability emerges not as a pre-existing trait but through situated learning within complex, uncertain work environments. This insight has important implications for curriculum design, suggesting that internships should be more intentionally structured to develop these competencies in students across disciplines and demographics.

5.3. Digital Literacy, Technology Adaptation, and Readiness for a Digitized Workplace

The present analysis substantiates the evolving function of internships as intensive sites of digital professional formation. Empirical evidence from both quantitative and qualitative strands confirms that undergraduate interns experience multidimensional growth in operational software proficiency, platform adaptability, digital troubleshooting, information synthesis across technological systems, and emergent ethical awareness. Of particular note, statistical modeling foregrounds adaptability ($\beta = 0.59$) and software proficiency ($\beta = 0.56$) as the most potent predictors of perceived employability, while experiential narratives shed light on the improvisational and situated learning strategies underpinning these developmental outcomes. Digital literacy thus emerges not as a static competency but as a relational and context-contingent assemblage of judgment, agency, and ethical discernment within digitally saturated organizational environments.

The absence of structured digital onboarding in many internship contexts accelerates interns' transition from routine digital familiarity to complex operational capability. Bereft of formal guidance, students engaged in cognitively demanding activities that required the cultivation of procedural intuition—an epistemic resource characterized by interface fluency, adaptive exploration, and reflexive iteration. These findings resonate with Chue et al. (2024) and Petersson (2021), who conceptualize procedural learning as a form of embodied cognition, inseparable from the sociotechnical systems in which it unfolds. In navigating enterprise platforms such as CRMs and cloud-based collaboration suites, interns were compelled to mobilize self-directed learning capacities often absent from conventional academic instruction.

Equally salient is the development of digital reflexivity among interns. Approximately 42% of participants reported heightened awareness of the infrastructural logics embedded within the platforms they utilized—ranging from behavioral tracking and algorithmic nudges to metadata capture. This awareness signals the emergence of what Samuelsson and Lindström (2022) term "critical digital literacy," a construct that transcends mere operational competence and engages with the political and ethical dimensions of digital systems. Rather than passively internalizing platform norms, interns demonstrated a capacity to interrogate the conditions of their digital labor and the visibility regimes they inhabit. This layer of analysis aligns with Chue et al. (2024), who posit that fostering digital professionalism requires attention to the governance and surveillance structures that contour workplace technologies. Nevertheless, attributing developmental gains solely to internship structure risks obscuring the heterogeneity of intern experiences. Student agency, prior digital exposure, and informal social learning emerged as significant mediators of digital competence. Those with pre-existing self-efficacy in technology exhibited greater fluency in navigating ambiguous tasks, whereas others relied on peer mentorship and extrinsic resources. This suggests the importance of baseline diagnostic assessment and post-placement longitudinal studies to parse out the relative influence of structural conditions versus individual dispositions.

In light of these insights, several strategic imperatives for higher education and internship policy emerge. First, internship programs must formalize digital onboarding through scaffolded learning environments that ease the transition into professional tool ecosystems (Abas et al., 2025; Tammaro et al., 2025). Without such scaffolds, students are more vulnerable to cognitive overload and performance anxiety, which may undermine deeper epistemic engagement. Second, critical digital ethics should be woven into preparatory curricula via scenario-based inquiry, reflective audits of digital practices, and simulation of data risk environments (Doria et al., 2024; Ferhataj et al., 2025). These interventions are essential for cultivating anticipatory ethical reasoning, especially as interns interface with opaque data systems and surveillance-driven workflows.

Third, the design of assessment frameworks should be recalibrated to capture not only task competence but the evolution of self-regulatory, affective, and ethical capacities. Reflective

modalities such as guided journaling, peer-led debriefing, and structured narrative inquiry (Cheng & Lee, 2024; Simper et al., 2018) offer viable pathways for making visible the often-invisible dimensions of professional formation. Fourth, equity must be foregrounded in internship access. Digitally mediated placements risk reinforcing systemic inequities unless policy frameworks explicitly account for variations in institutional capacity, geographic reach, and socio-economic barriers (Åmo, 2023; Ledger & Vidovich, 2018). Inclusive design principles must be enacted not only at the level of opportunity distribution but also in the pedagogical scaffolding that ensures meaningful participation. Ultimately, this study repositions internships not as peripheral professional experiences but as ontologically generative spaces for digital subject formation. As students confront and navigate digitally intensive work environments, they acquire not only technical competence but also reflexive sensibilities and ethical orientations necessary for meaningful engagement in contemporary digital economies. Future-oriented internship models must thus be conceived as integrated, reflective, and critically attuned ecosystems that empower students to move beyond mere functional literacy toward epistemic agility and professional self-authorship in algorithmically mediated worlds.

The contribution of this study lies in its exploration of how internships function as critical spaces for developing digital literacy that extends beyond mere tool proficiency. While much of the existing literature tends to emphasize the acquisition of technical skills (e.g., Chue et al., 2024; Petersson, 2021), this study adds to the literature by showing how internships enable students to develop procedural intuition, digital reflexivity, and ethical awareness—competencies essential for navigating the ethical and socio-political dimensions of digital work environments. This research contributes to the growing field of digital citizenship by demonstrating that internships are not only about mastering digital tools but also about reflecting on the governance, surveillance, and ethical implications of digital engagement. The study's findings provide valuable insights for educators and policymakers, suggesting that digital literacy curricula should integrate critical reflection on digital ethics and self-regulation into internship programs. This calls for a shift towards internships as fully integrated learning ecosystems, where students not only acquire technical skills but also engage critically with the digital tools and platforms that define the modern workplace.

6. Limitations and Future Research

This study provides valuable insights into the role of internships in shaping employability, yet several limitations must be acknowledged to contextualize the findings and inform the trajectory of future research in this domain. First, the sample size of 100 participants, while statistically sufficient for preliminary analysis, poses limitations regarding the generalizability of the findings. While the sample was purposefully drawn from a range of academic disciplines and geographic locations, it remains skewed towards urban institutions. This geographical concentration may not fully capture the experiences of students from rural or less-resourced areas, where internship opportunities and exposure to professional environments may differ significantly. Second, the self-reported nature of the data poses inherent limitations in the interpretation of results. While self-reports are useful for gauging perceptions and personal assessments of employability, they are subject to response bias, including social desirability bias and retrospective biases, particularly when participants assess their own skill development. Third, the cross-sectional design of the study, while providing valuable insights into the immediate effects of internships, limits causal inferences and precludes any analysis of the long-term impact of internships on career outcomes. As this study does not capture data over time, it remains uncertain whether the employability gains observed during the internship persist beyond the immediate post-placement period. Such research would provide a clearer picture of the sustained impact of internships on long-term employability outcomes. Furthermore, while this study focused on digital literacy and soft skill development, it did not explore other potentially pivotal factors that may shape employability, such as cultural competence, workplace stress management, and leadership skills. These competencies are becoming increasingly important in the contemporary

workforce, particularly in industries requiring high levels of interpersonal interaction and cross-cultural communication. Additionally, this study did not explore the variability in internship quality or the extent of employer engagement, both of which may significantly affect the developmental outcomes of internships. Research has shown that the structure and quality of the internship—whether it is paid or unpaid, sector-specific, virtual or in-person—can mediate the effectiveness of the experience.

Several strategic directions for future research emerge from these limitations. Future studies should focus on larger, more representative samples, encompassing both urban and rural students, as well as diverse institutional and disciplinary contexts. Longitudinal studies tracking the career progression of internship participants would be instrumental in establishing the long-term impact of internships on employability. These studies should also consider a more comprehensive range of competencies, including cultural competence, workplace stress management, and leadership development, all of which play critical roles in modern professional environments. Equally important is the need for future research to examine the role of internship quality and employer engagement in shaping developmental outcomes. A deeper understanding of how different types of internships—paid vs. unpaid, virtual vs. in-person—affect students' learning experiences and employability outcomes would offer valuable insights for both policymakers and educational institutions. Furthermore, future research should explore the role of mentor relationships and structured feedback mechanisms in enhancing the quality of the internship experience. Finally, addressing equity issues is critical. As internships become an increasingly important part of higher education curricula, it is essential that all students have equitable access to quality internships, regardless of socio-economic background. Future research should investigate how barriers to access—such as geography, socio-economic status, and institutional capacity—affect students' ability to engage in and benefit from internships. This study has laid the groundwork for understanding the impact of internships on employability and skill development. However, there remains significant scope for further research to build on these findings. Future studies should adopt longitudinal, cross-institutional approaches to explore the long-term impact of internships, assess the role of additional competencies in employability, and investigate the influence of internship quality and equity on students' professional trajectories.

7. Suggestions and practical implications

The empirical insights generated through this investigation necessitate a reconceptualization of how digital preparedness is scaffolded within internship frameworks in higher education. Universities must adopt a systematic, theory-informed approach to digital onboarding that progressively immerses students in authentic, high-stakes digital environments. This onboarding should be operationalized through modular pre-placement training co-developed with industry stakeholders, targeting mastery of tools such as customer relationship management systems, enterprise project platforms, and collaborative cloud infrastructures. Such preparatory architectures mitigate cognitive overload and enable the procedural fluency required for effective workplace engagement. Equally critical is the integration of digital ethics as a foundational pedagogical dimension of internship curricula. Institutions should implement critical-reflective methodologies that cultivate students' capacities for ethical discernment within digitally surveilled ecosystems. Pedagogical strategies might include digital trace self-audits, simulated exercises on data governance risks, and dialogic inquiry into algorithmic bias and automated decision-making. These elements are essential for preparing students to navigate the ethical complexities of platform-mediated professional practice with integrity and autonomy. Moreover, assessment regimes must evolve to reflect the multidimensional nature of digital learning outcomes. Conventional evaluative metrics that emphasize technical task completion are insufficient. Instead, a multidimensional assessment ecology should incorporate reflexive journaling, structured mentor evaluations, and curated digital artefacts to trace students'

affective, cognitive, and ethical learning trajectories. These instruments must be calibrated for disciplinary specificity and accommodate heterogeneity in students' prior digital exposure. Finally, the imperative for equitable access to digitally intensive internship opportunities must guide policy reform. Institutional and governmental stakeholders should invest in capacity-building initiatives, infrastructure modernization, and inter-organizational consortia that enable resource-constrained institutions to provide parity in experiential learning. Only through these concerted and inclusive efforts can we foster a digitally agile, ethically grounded, and socially responsive graduate workforce equipped to thrive in data-saturated professional landscapes.

8. Conclusion

This study examined the relationship between internship participation and the development of digital competencies among Indonesian undergraduates working in increasingly digitized professional environments. The evidence suggests that internships serve not only as platforms for acquiring technical skills—encompassing software proficiency, digital problem-solving, and platform adaptation—but also as complex learning spaces that involve affective and ethical learning. Students demonstrated the development of procedural intuition and strategic autonomy, often in the absence of structured digital instruction, through contextually grounded and peer-mediated learning processes. More significantly, the findings advance a multidimensional conceptualization of digital readiness, extending beyond functional literacy to include ethical reflexivity, affective resilience, and systemic awareness of algorithmic structures and surveillance regimes. Participants articulated heightened sensitivity to the behavioral architectures embedded within digital platforms and revealed nascent capacities for interrogating the ethical ramifications of their digital labor. These insights necessitate a paradigmatic shift in how internship experiences are conceptualized, designed, and evaluated. A move from linear, skill-based frameworks toward relational, reflexive, and identity-oriented learning ecologies is essential. Higher education institutions, in concert with industry collaborators, must construct integrative pedagogical infrastructures that foreground ethical engagement, facilitate structured reflection, and provide equitable access to digital immersion across socio-economic divides. In rearticulating internships as critical loci of professional identity formation, this study contributes to the broader discourse on digitally mediated work-integrated learning. It affirms that digital internships are not merely transitional spaces for employability enhancement but constitute formative arenas wherein students cultivate the epistemic agility, ethical orientation, and critical literacy required to navigate and shape increasingly algorithmic and surveilled labor markets. Preparing future graduates thus requires the intentional design of internship ecosystems that enable not just digital proficiency, but critical and compassionate participation in the digital future of work.

Declarations

Author Contributions. All authors contributed to the original manuscript preparation. All authors have read and approved the published on the final version of the article.

Conflicts of Interest. The authors declare no conflict of interest.

Funding. This research received no external funding.

Ethical Approval. Ethical approval and consent to participate were not required

Data Availability Statement. The data that support the findings of this study are available from the corresponding author upon reasonable request.

References

- Abas, A., Ibrahim, M. M. B., & Azmi, N. H. (2025). Data-Driven Framework for Optimizing Internship Efficiency and Addressing Skills Mismatch in Malaysian Higher Education. *22nd International Learning and Technology Conference: Human-Machine Dynamics Fueling a Sustainable Future, L and T 2025*, 280–285. <https://doi.org/10.1109/LT64002.2025.10940990>

- Adegbite, W. M. (2024). Unpacking mediation and moderating effect of digital literacy and life-career knowledge in the relationship between work-integrated learning and graduate employability. *Social Sciences and Humanities Open*, 10. <https://doi.org/10.1016/j.ssaho.2024.101161>
- Adegbite, W. M., & Hoole, C. (2024). The nexus of work integrated learning and skills among engineering students in Nigerian Universities: A structural equation model approach. *Journal of Teaching and Learning for Graduate Employability*, 15(1), 91–107. <https://doi.org/10.21153/jtlge2024vol15no1art1824>
- Al-Ayash, A. A., Hussein, M. F., & Edwar, M. E. (2025). Aligning Interior Design Education with Industry Needs: Exploring the Role of Internships in Connecting Theoretical Knowledge and Practical Skills. *International Journal of Design Education*, 19(1), 163–179. <https://doi.org/10.18848/2325-128X/CGP/v19i01/163-179>
- AlGhamdi, R. A. (2022). Virtual internship during the COVID-19 pandemic: exploring IT students satisfaction. *Education and Training*, 64(3), 329–346. <https://doi.org/10.1108/ET-12-2020-0363>
- Åmo, B. W. (2023). Designing internships: Student demographics and student motivation. *Southern African Journal of Entrepreneurship and Small Business Management*, 15(1). <https://doi.org/10.4102/SAJESBM.V15I1.650>
- Bennett, D., Reid, A., & Rowley, J. (2017). Student musicians' experiences of reflexivity during internships: Personal narratives and complex modalities. *International Journal of Music Education*, 35(3), 460–475. <https://doi.org/10.1177/0255761416689843>
- Blagojevic, T., Kaley-Isley, J., Johnson, N., & Hearsey, C. (2024). The Unique SCF Global Space Law Internship Program. *Proceedings of the International Astronautical Congress, IAC, 2-B*, 1189–1194. <https://doi.org/10.52202/078378-0148>
- Bönninger, Y., Merkle, A. F., Mähltitz-Galler, E., Voß, G., von Velsen-Zerweck, B., & Herzog, M. A. (2024). PARTICIPATORY PROCESSES IN THE CONTEXT OF THE DEVELOPMENT AND IMPLEMENTATION OF (DIGITAL) LEARNING OFFERINGS: A CASE STUDY ON THE SUPPORT OF INTERNSHIP PHASES IN BUSINESS MANAGEMENT STUDIES. *Proceedings of the International Conferences on E-Learning and Digital Learning 2024, ELDL 2024; Sustainability, Technology and Education 2024, STE 2024*, 183–190. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85207098526&partnerID=40&md5=5d3960fc899ca419d79a5658429b1422>
- Borovskikh, N. V., & Kipervar, E. A. (2019). Digital competences of administrative and management personnel: Problems of identification and prospects of formation in the context of the digitalization of the economy. *Journal of Advanced Research in Dynamical and Control Systems*, 11(11 Special Issue), 90–99. <https://doi.org/10.5373/JARDCS/V11SP11/20192933>
- Brodsky, A., Rausch, A., & Seifried, J. (2024). Informal Learning in Business Internships in Higher Education – Findings from a Diary Study. *Vocations and Learning*, 17(3), 433–458. <https://doi.org/10.1007/s12186-024-09349-y>
- Budai, B. B., Csuhai, S., & Tózsai, I. (2023). Digital Competence Development in Public Administration Higher Education. *Sustainability (Switzerland)*, 15(16). <https://doi.org/10.3390/su151612462>
- Camino, L. G., Cruz, S. G. M., & Ana, G.-V. M.-R. (2021). Development of Digital Competence in primary and secondary students in three dimensions: fluency, learning-knowledge and digital citizenship. *RISTI - Revista Iberica de Sistemas e Tecnologias de Informacao*, 2021(44), 5–20. <https://doi.org/10.17013/risti.44.5-20>
- Celestial-Valderama, A. M. (2023). The Course Learning Experience as a Forerunner in IT Internship:

Assessment from the Student and the Host Training Establishment. *31st International Conference on Computers in Education, ICCE 2023 - Proceedings, 2*, 428–436. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85181767868&partnerID=40&md5=125476334cf64ad5ab866cc0a5e2899e>

- Chand, V. S., & Deshmukh, K. S. (2019). Addressing the undergraduate internship challenge in developing countries: A “learning-by-doing” project-based online internship model. *Education and Training, 61*(9), 1064–1077. <https://doi.org/10.1108/ET-12-2018-0254>
- Cheng, I.-H., & Lee, S. T. (2024). The Impact of Ethics Instruction and Internship on Students’ Ethical Perceptions About Social Media, Artificial Intelligence, and ChatGPT. *Journal of Media Ethics: Exploring Questions of Media Morality, 39*(2), 114–129. <https://doi.org/10.1080/23736992.2024.2333486>
- Chowdhury, F. (2020). Work integrated learning at tertiary level to enhance graduate employability in Bangladesh. *International Journal of Higher Education, 9*(4), 61–68. <https://doi.org/10.5430/ijhe.v9n4p61>
- Chue, S., Säljö, R., & Lee, Y.-J. (2024). Logic of internship learning in hybrid engineering workplace settings: a sociomaterial assemble of digital tools, humans and activities. *Studies in Continuing Education*. <https://doi.org/10.1080/0158037X.2024.2422832>
- Clancy, A., & Vince, R. (2019). “If I Want to Feel My Feelings, I’ll See a Bloody Shrink”: Learning From the Shadow Side of Experiential Learning. *Journal of Management Education, 43*(2), 174–184. <https://doi.org/10.1177/1052562918817931>
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Daud, K. A. M., Khidzir, N. Z., Parasuraman, B., Bhattacharyya, E., Savita, K. S., Rao, P. V, Kumaran, J. V, Hassan, N. M. S. N., & Aris, R. (2021). Employability skills: What do employers need? *AIP Conference Proceedings, 2347*. <https://doi.org/10.1063/5.0052149>
- Di Meglio, G., Barge-Gil, A., Camiña, E., & Moreno, L. (2019). The impact of internships on job attainment: An applied analysis of economics and business administration degrees. *Educacion XX1, 22*(2), 235–266. <https://doi.org/10.5944/educxx1.22579>
- Di Meglio, G., Barge-Gil, A., Camiña, E., & Moreno, L. (2022). Knocking on employment’s door: internships and job attainment. *Higher Education, 83*(1), 137–161. <https://doi.org/10.1007/s10734-020-00643-x>
- Doria, J., Grimm, P., Hohendanner, M., & Kuhnert, S. (2024). Designing and Evaluating an Interactive Learning Technology to Foster Privacy Literacy. *IEEE Transactions on Learning Technologies, 17*, 827–840. <https://doi.org/10.1109/TLT.2023.3333930>
- Downs, C., Mughal, F., Shah, U., & Ryder, M. (2024). Are undergraduate internships worth the effort? Time to reconceptualize work-based learning for building protean meta-competencies. *Studies in Higher Education, 49*(1), 84–97. <https://doi.org/10.1080/03075079.2023.2222147>
- Duran-Riquelme, A., Flores-Fernández, C., & Riquelme-Ríos, J. (2024). Core competencies in the professional practice of the library and information science programme. *Education for Information, 40*(3), 285–311. <https://doi.org/10.3233/EFI-230157>
- Edgar, S., Sutherland, S., & Connaughton, J. (2020). Implementing post-practicum strategies to enhance the professional identity and employability of final year physiotherapy students. In *Professional and Practice-based Learning* (Vol. 28, pp. 89–101). https://doi.org/10.1007/978-3-030-48062-2_5

- Ferhataj, A., Memaj, F., Sahatcija, R., Ora, A., & Koka, E. (2025). Ethical concerns in AI development: analyzing students' perspectives on robotics and society. *Journal of Information, Communication and Ethics in Society*, 23(2), 165–187. <https://doi.org/10.1108/JICES-08-2024-0111>
- Finch, D., Peacock, M., Lazdowski, D., & Hwang, M. (2015). Managing emotions: A case study exploring the relationship between experiential learning, emotions, and student performance. *International Journal of Management Education*, 13(1), 23–36. <https://doi.org/10.1016/j.ijme.2014.12.001>
- Flek, M. B., & Ugnich, E. A. (2023). Development of a model of employee's digital competencies in the conditions of the enterprise digital transformation. *Perspektivy Nauki i Obrazovania*, 63(3), 706–723. <https://doi.org/10.32744/PSE.2023.3.43>
- Franco-Ángel, M., Carabali, J., & Velasco, M. I. (2023). The internship performance of undergraduate students: Are hard or soft skills more important? *Industry and Higher Education*, 37(3), 384–396. <https://doi.org/10.1177/09504222221127213>
- Gault, J., Leach, E., & Duey, M. (2010). Effects of business internships on job marketability: The employers' perspective. *Education and Training*, 52(1), 76–88. <https://doi.org/10.1108/00400911011017690>
- Ginting, H. (2016). Developing Soft skills Measure in an Indonesian University: Procedure, Validity, and Reliability. *International Journal of Learning*, 2(2), 140–147. <https://doi.org/10.18178/IJLT.2.2.140-147>
- Grantham, S., & Iachizzi, M. (2024). From classroom to career: a new approach to work-integrated learning in communication studies. *Higher Education, Skills and Work-Based Learning*, 14(4), 821–834. <https://doi.org/10.1108/HESWBL-02-2024-0051>
- Gryzenkova, Y. V., Kugusheva, A. N., Okhrimenko, I. V., & Tsyganov, A. A. (2023). The concept of 4K+. Soft skills development among students and employees of higher education organizations (based on the experience of a volunteer center). *Perspektivy Nauki i Obrazovania*, 65(5), 759–779. <https://doi.org/10.32744/pse.2023.5.44>
- Halim, E., Zahra, A., Wulandhari, L. A., Fitriah, D., & Puspita, V. (2024). Fostering Digital Innovation in Indonesia: The Role of STEM-AI Skills in Overcoming Talent Deficits and Gender Stereotypes. *2024 International Conference on Intelligent Cybernetics Technology and Applications, ICICYTA 2024*, 714–719. <https://doi.org/10.1109/ICICYTA64807.2024.10912915>
- Henderson, W., Homan, H., & Bayne, K. (2024). EXPERIENTIAL LEARNING INSTRUCTIONAL METHODS. In *Effective Teaching: Instructional Methods and Strategies for Occupational Therapy Education* (pp. 101–127). <https://doi.org/10.4324/9781003523956-6>
- Ismail, N. S., Makhtarudin, N. A., & Kamaruzaman, T. F. A. T. (2024). The Impact of Internships on Diploma of Chemical Engineering Students: A Case Study of Politeknik Tun Syed Nasir Syed Ismail. *2024 International Conference on TVET Excellence and Development, ICTeD 2024*, 76–80. <https://doi.org/10.1109/ICTeD62334.2024.10844643>
- Jackson, D., & Collings, D. (2018). The influence of Work-Integrated Learning and paid work during studies on graduate employment and underemployment. *Higher Education*, 76(3), 403–425. <https://doi.org/10.1007/s10734-017-0216-z>
- Jackson, D., & Cook, E. J. (2024). Work-integrated learning in the humanities, arts and social sciences: where to from here? *Studies in Higher Education*. <https://doi.org/10.1080/03075079.2024.2409879>

- Jackson, D., & Dean, B. A. (2023). The contribution of different types of work-integrated learning to graduate employability. *Higher Education Research and Development*, 42(1), 93–110. <https://doi.org/10.1080/07294360.2022.2048638>
- Jackson, D., & Rowe, A. (2023). Impact of work-integrated learning and co-curricular activities on graduate labour force outcomes. *Studies in Higher Education*, 48(3), 490–506. <https://doi.org/10.1080/03075079.2022.2145465>
- Jiang, T. (2024). Experiential Learning and Internships in LIS. In *Encyclopedia of Libraries, Librarianship, and Information Science, First Edition, Four Volume Set* (Vol. 3, p. V3:547-V3:551). <https://doi.org/10.1016/B978-0-323-95689-5.00119-X>
- Kang, J., & Girouard, A. (2022). Impact of UX Internships on Human-computer Interaction Graduate Students: A Qualitative Analysis of Internship Reports. *ACM Transactions on Computing Education*, 22(4). <https://doi.org/10.1145/3517132>
- Kapareliotis, I., Voutsina, K., & Patsiotis, A. (2019). Internship and employability prospects: assessing student's work readiness. *Higher Education, Skills and Work-Based Learning*, 9(4), 538–549. <https://doi.org/10.1108/HESWBL-08-2018-0086>
- Keawtavon, T., Suamuang, W., & Chomsuwan, K. (2023). Professional Competency Development Using Self-Directed Learning via on the Job Training. *8th International STEM Education Conference, ISTEM-Ed 2023 - Proceedings*. <https://doi.org/10.1109/iSTEM-Ed59413.2023.10305790>
- Kodrat, D. S., Tambunan, D. B., & Hartono, W. (2024). Investigation of workplace literacy in Indonesia to enhance employability opportunities. *Decision Science Letters*, 13(2), 351–362. <https://doi.org/10.5267/j.dsl.2024.2.002>
- Kosasi, S., Kasma, U., & Ayu Eka Yuliani, I. D. (2020). The Mediating Role of Learning Analytics to Improve Student Academic Performance. *2020 2nd International Conference on Cybernetics and Intelligent System, ICORIS 2020*. <https://doi.org/10.1109/ICORIS50180.2020.9320802>
- Ledger, S., & Vidovich, L. (2018). Australian teacher education policy in action: The case of pre-service internships. *Australian Journal of Teacher Education*, 43(7), 11–29. <https://doi.org/10.14221/ajte.2018v43n7.2>
- Li, H., Dai, W., & Li, X. (2024). Extracurricular internships and university students' evaluation of higher learning: a cross-cultural adaptation perspective. *Education and Training*, 66(9), 1199–1213. <https://doi.org/10.1108/ET-03-2024-0130>
- Lia, L. C. D. (2021). Forming Professionals Instead of Graduates: The Value Of Experiential Learning For Future Employment. In *Organisation Studies and Human Resource Management: An Educator's Handbook* (pp. 271–272). <https://doi.org/10.4324/9780429262937-21-2>
- López García, C., Sánchez Gómez, M. C., & García-Valcárcel Muñoz-Repiso, A. (2022). Development of Digital Competence in primary and secondary students in three dimensions: fluency, learning-knowledge and digital citizenship. *RISTI - Revista Iberica de Sistemas e Tecnologias de Informacao*, 2022(E48), 501–517. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85129324201&partnerID=40&md5=0069eb7265f7152e759555f687b7d634>
- Lotfi, F. Z., Suwartono, T., Maziane, B., Nurhayati, S., Laajan, Y., & Nachit, B. (2025). Collaborative Concept Maps in Higher Education: Pedagogical Contributions, Cognitive Challenges, and Optimization Strategies for Interactive Visual Learning. *Educational Process International Journal*, 14. <https://doi.org/10.22521/edupij.2025.14.85>
- Marsegi, S. M., Nurhayati, S., Ansori, A., & Hendriana, H. (2023). Digital-Based Portfolio Assessment

- Competence of Early Childhood Educators. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 7(1), 251–259. <https://doi.org/10.31004/obsesi.v7i1.3360>
- McHugh, P. P. (2017). The impact of compensation, supervision and work design on internship efficacy: implications for educators, employers and prospective interns. *Journal of Education and Work*, 30(4), 367–382. <https://doi.org/10.1080/13639080.2016.1181729>
- McHugh, S., Quille, K., Carmody, L., & Nolan, K. (2022). Developing an On-Campus Internship Model for Computing Students - An Alternative Experiential Learning Pathway. *ACM International Conference Proceeding Series*. <https://doi.org/10.1145/3555009.3555019>
- Ng, B. (2022). Connecting Graduate Employability and Workplace: A Sociocultural Perspective. In *Graduate Employability and Workplace-Based Learning Development: Insights from Sociocultural Perspectives* (pp. 31–44). https://doi.org/10.1007/978-981-19-5622-5_3
- Nguyen, N. T., Tran, L. T., & Le, T. T. T. (2019). Work-Integrated Learning for Enhancing Graduate Employability: Moving from the Periphery to the Centre of the Curriculum. In *Education in the Asia-Pacific Region* (Vol. 50, pp. 113–132). https://doi.org/10.1007/978-981-13-8918-4_7
- Nugent, P., & Faucette, N. (2004). Developing Beginning Teachers through: An Interactive Induction and Internship Program. *Action in Teacher Education*, 26(1), 53–63. <https://doi.org/10.1080/01626620.2004.10463313>
- Nurhayati, S., & Handayani, F. A. (2025). Project-Based Business Management Training for Women's Entrepreneurial Skills Development. *Jurnal Visi Ilmu Pendidikan*, 17(1). <https://doi.org/https://doi.org/10.26418/jvip.v17i1.83520>
- Nursanti, E. A., & Nurhayati, S. (2024). *Empowering Rural Women Entrepreneurs through Digital Marketing : Strategies for Household Business Growth*. 2(December), 9–20.
- Nyanjom, J., Goh, E., & Yang, E. C. L. (2023). Integrating authentic assessment tasks in work integrated learning hospitality internships. *Journal of Vocational Education and Training*, 75(2), 300–322. <https://doi.org/10.1080/13636820.2020.1841821>
- Obermayer, N. (2023). Importance of Digital and Soft Skills in the Digital Age. *European Conference on Knowledge Management*, 24(2), 978–987. <https://doi.org/10.34190/eckm.24.2.1550>
- Ocampo, A. C. G., Reyes, M. L., Chen, Y., Restubog, S. L. D., Chih, Y.-Y., Chua-Garcia, L., & Guan, P. (2020). The role of internship participation and conscientiousness in developing career adaptability: A five-wave growth mixture model analysis. *Journal of Vocational Behavior*, 120. <https://doi.org/10.1016/j.jvb.2020.103426>
- Pantaruk, S., Khuadthong, B., Imjai, N., & Aujirapongpan, S. (2025). Fostering future-ready professionals: The impact of soft skills and internships on hospitality employability in Thailand. *Social Sciences and Humanities Open*, 11. <https://doi.org/10.1016/j.ssaho.2025.101371>
- Petersson, J. (2021). Student perception of learning during on-site and online internships. *Proceedings of the European Conference on E-Learning, ECEL*, 364–370. <https://doi.org/10.34190/EEL.21.084>
- Pike, P. D. (2023). INTERNSHIPS. In *High-Impact Practices in Online Education: Research and Best Practices* (pp. 147–163). <https://doi.org/10.4324/9781003445104-10>
- Ramani, R. S., & McHugh, P. P. (2024). Cultural influences on internship development value and job pursuit intention: An exploratory comparison of student experiences in France and the United States. *International Journal of Management Education*, 22(3). <https://doi.org/10.1016/j.ijme.2024.101008>

- Rao, K., Garant-Jones, E., Dean, B. A., & Eady, M. J. (2024). Applying universal design for learning to work-integrated learning: Designing for inclusion and equity. *International Journal of Work-Integrated Learning*, 25(1), 67–81. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85188839713&partnerID=40&md5=5155932206a19a19a05b55ec5e41926c>
- Ratningsih, O., Sadiah, R. A., Nurhayati, S., & Widiastuti, N. (2021). Father Parenting Role in the Child's Social-Emotional Development. *Empowerment : Jurnal Ilmiah Program Studi Pendidikan Luar Sekolah*, 10(2252), 47–53.
- Romkey, L., Munro, D., Hall, V., & Ross, T. L. (2023). Evaluation of a Work-Integrated Learning Program for Undergraduate STEM Outreach Instructors. *ASEE Annual Conference and Exposition, Conference Proceedings*. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85172128954&partnerID=40&md5=c54b6c2b94cddf90f5b4527cc425c02d>
- Rose, P. (2023). Intern motivation to learn: The moderating role of perceived overqualification. *International Journal of Work-Integrated Learning*, 24(4), 437–448. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85188155132&partnerID=40&md5=c05b7ae0bc07e16cda0b52b26c443642>
- Ross, T. L., & Romkey, L. (2021). Post-secondary Work Integrated Learning Through STEM Outreach. *ASEE Annual Conference and Exposition, Conference Proceedings*. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85124564943&partnerID=40&md5=1a0d2fcb2fd9cc487d7a305c846e2de5>
- Rothman, M., & Sisman, R. (2016). Internship impact on career consideration among business students. *Education and Training*, 58(9), 1003–1013. <https://doi.org/10.1108/ET-04-2015-0027>
- Samuelsson, L., & Lindström, N. (2022). Online Surveillance and Education for Digital Competence. *Athens Journal of Education*, 9(4), 545–558. <https://doi.org/10.30958/aje.9-4-1>
- Shen, P., Wu, Y., Liu, Y., & Lian, R. (2024). Linking undergraduates' future orientation and their employability confidence: The role of vocational identity clarity and internship effectiveness. *Acta Psychologica*, 248. <https://doi.org/10.1016/j.actpsy.2024.104360>
- Silva, C., & Gamboa, V. (2014). The impact of the internship on the career adaptability of vocational education students. *Revista Brasileira de Orientacao Profissional*, 15(2), 105–114. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84939427847&partnerID=40&md5=bba78e1acab3ddc64a2e73d803cf71c7>
- Simper, N., Gauthier, L., & Scott, J. (2018). Student learning in the workplace: The Learning Evaluation and Reflection Narrative (LEARN) framework. *Journal of Workplace Learning*, 30(8), 658–671. <https://doi.org/10.1108/JWL-04-2018-0060>
- Srivastava, N., & Kuri, M. (2021). Soft skills: An integral part of technical education. In *Lecture Notes in Networks and Systems* (Vol. 135, pp. 189–193). https://doi.org/10.1007/978-981-15-5421-6_19
- Stansbie, P., & Nash, R. (2016). Customizing Internship Experiences by Emphasis Area: The Key to Increased Satisfaction and Motivation in Hospitality and Tourism Management Students. *Journal of Hospitality and Tourism Education*, 28(2), 71–84. <https://doi.org/10.1080/10963758.2016.1163495>
- Stefanovic, N., Bogicevic, Z., & Milosevic, D. (2021). A digital platform for managing virtual internships. *International Journal of Engineering Education*, 37(4), 987–998. <https://www.scopus.com/inward/record.uri?eid=2-s2.0->

85108557688&partnerID=40&md5=06708a53a04fcf810fb498375ef55613

- Steinlechner, M., Schumacher, A., Fuchs, B., Reichsthaler, L., & Schlund, S. (2021). A maturity model to assess digital employee competencies in industrial enterprises. *Procedia CIRP*, 104, 1185–1190. <https://doi.org/10.1016/j.procir.2021.11.199>
- Sun, S., Gao, X., Rahmani, B. D., Bose, P., & Davison, C. (2023). Student voice in assessment and feedback (2011–2022): a systematic review. *Assessment and Evaluation in Higher Education*, 48(7), 1009–1024. <https://doi.org/10.1080/02602938.2022.2156478>
- Tamaro, A. M., Walton, G., & Filar Williams, B. (2025). Global Perspectives on Digital Library Internships: A Critical Analysis Using the International Digital Library Learning (DILL) Master Program as a Case Study. *International Information and Library Review*, 57(1), 64–79. <https://doi.org/10.1080/10572317.2025.2442456>
- Tavitiyaman, P., Tsui, B., & Ng, P. M. L. (2025). Effect of Hospitality and Tourism Students' Perceived Skills on Career Adaptability and Perceived Employability. *Journal of Hospitality and Tourism Education*, 37(1), 43–54. <https://doi.org/10.1080/10963758.2023.2200003>
- Tee, P. K., Wong, L. C., Dada, M., Song, B. L., & Ng, C. P. (2024). Demand for digital skills, skill gaps and graduate employability: Evidence from employers in Malaysia. *F1000Research*, 13. <https://doi.org/10.12688/f1000research.148514.1>
- To, W. M., & Lung, J. W. Y. (2020). Factors influencing internship satisfaction among Chinese students. *Education and Training*, 62(5), 543–558. <https://doi.org/10.1108/ET-01-2020-0023>
- Vo, N. T., Le, L. H. P., & Lam, V. T. T. (2022). Challenges for Student Satisfaction of Internship Program in Hospitality and Tourism Industry in Vietnam. *Journal of Quality Assurance in Hospitality and Tourism*, 23(5), 1298–1324. <https://doi.org/10.1080/1528008X.2021.1964414>
- Wyatt-Smith, C., Klenowski, V., & Colbert, P. (2014). Assessment Understood as Enabling: A Time to Rebalance Improvement and Accountability Goals. In *Enabling Power of Assessment* (Vol. 1, pp. 1–20). https://doi.org/10.1007/978-94-007-5902-2_1
- Zuo, Y., Weng, Q., & Xie, X. (2020). Are All Internships Equally Beneficial? Toward a Contingency Model of Internship Efficacy. *Journal of Career Development*, 47(6), 627–641. <https://doi.org/10.1177/0894845319883415>

About the Contributor(s)

Safuri Musa, PhD in Community Education, Associate Professor of Community Education, University of Singaperbangsa Karawang, West Java, Indonesia.

Email: safuri@unsika.ac.id

ORCID: <https://orcid.org/0000-0001-9407-1392>

Sri Nurhayati, PhD in Community Education, Associate Professor of Community Education, IKIP Siliwangi, Cimahi, West Java, Indonesia.

Email: srinurhayati@ikipsiliwangi.ac.id

ORCID: <https://orcid.org/0000-0002-2273-9143>

Gumpanat Boriboon, PhD in Adult Education, Assistant Professor of Adult Education and Lifelong Learning, Srinakharinwirot University, Bangkok, Thailand.

Email: aeswu2002@yahoo.com

ORCID: <https://orcid.org/0009-0006-8551-647X>

Publisher's Note: *The opinions, statements, and data presented in all publications are solely those of the individual author(s) and contributors and do not reflect the views of Universitepark, EDUPIJ, and/or the editor(s). Universitepark, the Journal, and/or the editor(s) accept no responsibility for any harm or damage to persons or property arising from the use of ideas, methods, instructions, or products mentioned in the content.*
