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Bridging Media and Information Literacy with Experiential Learning: Empowering Students for the Digital Age

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Abstract

This article explores how information and media literacy (MIL/IL), when integrated into internship experiences in higher education, can enhance students' professional development, critical awareness, and ethical engagement. Framed within an applied research project, the study investigates students' perceptions regarding the importance of information competencies and their connection to career readiness and personal growth. This study used a mixed-methods design combining IL-HUMASS surveys (pre/post), open-ended responses (Item 29), and an integrative synthesis of three programme studies (Anonymous Sources A-C). The research was conducted at a large public university in north-eastern Mexico as part of a broader pedagogical model aimed at bridging academic learning with workplace realities through experiential education. The cohorts comprised a cross-programme survey of 426 undergraduates; a pre-/post workshop with communication students, and a diagnostic study with more than 500 students across faculties. The results show that there are significant differences between how crucial students think information literacy is and how well they believe they perform in it, especially in relevant areas like using information ethically, evaluating sources critically, and communicating effectively online. Along with the numbers, open-ended responses showed common issues like the need for more hands-on training, challenges in adjusting to mixed or online work settings, and the importance of blending technical skills with emotional and reflective abilities. These findings highlight that internships, when connected to MIL/IL strategies, can effectively help students build essential skills that are useful for securing and sustaining employment in the long run. This paper contributes to the ongoing academic discussion on the role of higher education in equipping students for dynamic and technology-driven labour markets. Furthermore, it proposes an integrated pedagogical model that connects classroom learning with real-world demands while fostering autonomy, ethical responsibility, and critical thinking within digital contexts. Limitations include the single-institution scope,

reliance on self-report IL-HUMASS measures, and a short pre-/post-window; these were tempered through qualitative triangulation and a transparent synthesis protocol.

Keywords: digital skills, employability, disinformation, information literacy, higher education, critical thinking

1. Introduction

There is a unique challenge for university students today. While considering that students have exposure to a plethora of information, they tend to struggle with evaluating it ethically, particularly in their immediate environments. This situation is further compounded in today's social media, algorithm, and AI-driven world, this challenge is especially within a social media, algorithm, and AI driven world. Tomorrow's leaders and experts no longer have the luxury of passively receiving information; they instead curate a fast-evolving and perhaps oversaturated information environment. This challenges us to rethink standard pedagogical practices, which massively lean towards the transmission of information at the expense of deeper analysis and critical reflection.

Addressing these challenges requires cultivating a set of human-centric competencies that go beyond technical knowledge, critical thinking, moral decision-making, online interaction, information discernment, collaboratively solving problems, and adaptability are among the fundamental human-centric skills that the suggested model emphasizes in this context. The model grounds these competencies in actual scenarios, like internships and project-based learning, where students must use their judgment, collaborate with people from various generations, and deal with the uncertainties of modern digital life, rather than treating them as abstract ideals.

These competencies align closely with the expectations of employers in a rapidly changing labour market. At the same time, employers expect graduates to possess skills in areas such as complex problem-solving, early decision-making, and the ability to adapt quickly to uncertain and globalized markets. Analytical thinking, knowledge management, and digital literacy are now considered essential competencies, yet they are not consistently taught.

In this broader context of technological disruption, as the Fourth Industrial Revolution changes the labour market. Universities must respond by providing students with subject-specific knowledge and the skills to constantly learn, unlearn, and relearn. As students face an overwhelming amount of information and increasingly competitive job opportunities, schools need to rethink how they prepare them for professional life after graduation. Political and institutional debates often raise the idea of lifelong learning.

Meeting these demands depends on two interrelated factors, it is possible thanks to two crucial factors: knowing how to use knowledge effectively and having work experience. These things help students connect what they have learned in the classroom to real life, think about their place in society, and act decently. While both elements have been studied independently, their interaction remains underexplored, particularly in Global South contexts marked by inequality and limited digital access.

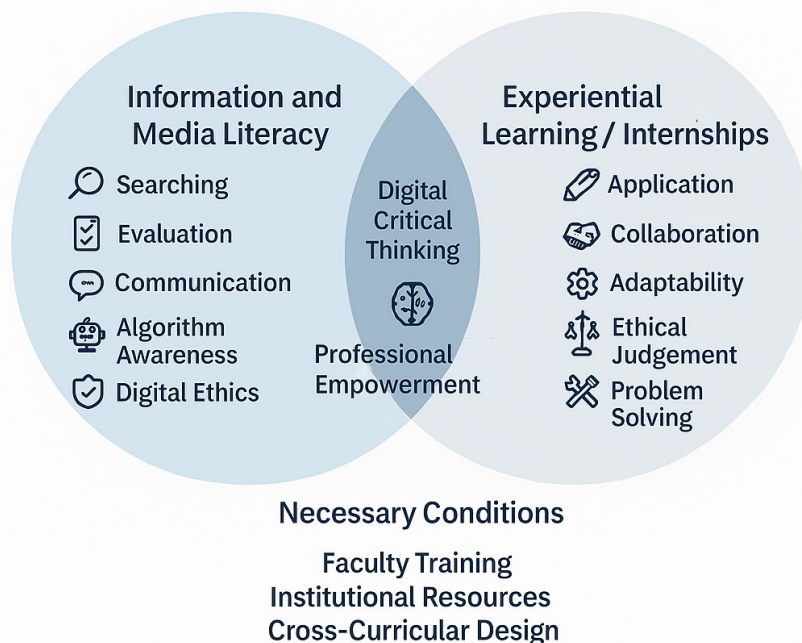
Drawing on recent empirical studies in Mexican higher education, this paper proposes a dialogue between two traditionally separate components: information and media literacy and experiential learning. Rather than being complementary, their integration is now essential to.

To guide this study, the following research questions were formulated:

- RQ1: How do undergraduate students engage in professional or internship experiences, and what transversal competencies do they perceive as most relevant for their employability?
- RQ2: To what extent do information literacy interventions—measured through the IL-HUMASS instrument—enhance students’ self-perceived informational competencies in searching, evaluating, processing, and communicating information ethically?
- RQ3: How do students perceive their media literacy and their capacity to identify and resist misinformation within digital environments?

However, the interplay between these two factors remains underexplored, particularly in Global South contexts. To address this gap, the following model illustrates how these elements can be integrated into a coherent pedagogical framework. This paper suggests a new model that combines two essential areas often looked at separately in universities: information and media literacy and learning through real-life experiences, while also including professional internships. Figure 1 demonstrates how this hybrid idea hopes to improve students’ digital ethics, critical thinking, and readiness for modern professional settings.

FIGURE 1. HYBRID PEDAGOGICAL MODEL FOR DIGITAL EMPOWERMENT



Source: own elaboration, 2025

Note: The model represents the convergence between information/media literacy and experiential learning, highlighting the development of critical thinking, digital ethics, and professional preparation.

This conceptual foundation informs the central argument of the paper; this idea underpins the proposal that ethical awareness, combined with professional abilities such as cooperation, flexibility, and problem-solving, helps to strengthen skills such as searching, analysing, and reporting. The profile this work aims to advance—a student able to negotiate today’s digital society with moral judgment and critical thinking—emerges at their intersection. The empirical underpinnings and educational consequences of this model are discussed in the next parts.

1.1. Theoretical Foundation: Literacy, Competence, and Experience

Originally rooted in library science, information literacy (IL) has evolved into a core competence for professional success, academic achievement, and civic participation. UNESCO (2024) defines IL not only as the ability to find and access information but also to evaluate its credibility, interpret it in context, and communicate it ethically; authors state that this definition becomes even more crucial in today's digital ecosystem, where personalized content feeds, algorithmic curation, and artificial intelligence (AI) reign supreme.

Furthermore, authors such as Qian et al. (2022) argue that students must learn not only to consume information but also to critically interrogate the systems that deliver and shape it. These same authors point out that, often without students' understanding, algorithms greatly impact what they believe and see online. The two terms media literacy (MIL) and information literacy (IL) serve as essential frameworks in this context for increasing students' access to and awareness of information.

These indicated literacies optimise the ability to judge the validity of information, interpret media messages, and take part in accountable participation in social networks. Bawden and Robinson (2020) highlight that short media and information literacy (MIL) programmes can greatly help students think critically and make better judgements online; for this reason, UNESCO (2023) stresses that these skills are crucial for participating in democracy and staying strong against misinformation, especially for young people.

In other words, strengthening MIL in early stages is a foundation for later professional experience in parallel, professional experience, whether through internships, service-learning, or applied projects, represents a formative bridge between theoretical knowledge and its application in real-world contexts. Authors note that internships offer students the opportunity to interact with complexity, ambiguity, and collaborative work, which rarely arise in conventional classroom environments.

According to the literature on experiential learning theory, such immersive experiences trigger reflective cycles that deepen understanding and foster adaptability. In addition, some studies indicate that students who participate in internships tend to develop greater confidence in their communication, problem-solving, and teamwork skills (Jackson & Dean, 2023).

Contemporary syntheses of experiential learning in higher education indicate that meaningful knowledge construction emerges when students move through iterative cycles of experience, reflection, conceptualisation, and application. When framed pedagogically, internships provide exposure to real-world contexts and opportunities to reflect, reframe, and apply disciplinary knowledge in iterative ways (Wijnia et al., 2024).

This cyclical process strengthens the retention and transfer of competencies and aligns academic preparation with workplace expectations, as shown by recent evidence on project-based approaches. We observe this pattern in our results: students progressed from hands-on activity to reflective sense-making and subsequent application—consistent with meta-analytic findings that structured reflection improves learning outcomes (Zhai et al., 2023).

Similarly, recent syntheses position experiential learning as a structured, reflective pedagogy that aligns authentic tasks with explicit outcomes and evaluation (Tembrevilla et al., 2024).

Complementarily, meta-analytic evidence shows that project-based approaches yield consistent gains in achievement and higher-order thinking, strengthening the case for applied, reflective curricula (Zhang & Ma, 2023).

Evidence was found that when students develop strong skills in IL, MIL, or both, their experiences in professional internships become more important because these programmes help them better research industry trends, assess workplace information critically, and handle ethical issues, especially in areas impacted by data manipulation and digital surveillance.

Therefore, information literacy enhances the value of these experiences since internships also provide an authentic scenario to exercise and improve literacy skills. This dynamic has been explored by Archambault et al. (2024), who argue that the workplace is fertile ground for consolidating information practices acquired in academic settings.

This situation suggests that the intersection of literacy and experience forms a solid pedagogical base. Moreover, in a context marked by rapid technological change, media polarisation, and labour market uncertainty, the most effective strategy for long-term empowerment may be to foster students with a critical literacy level and a career foundation.

The relationship between information literacy and experiential learning is part of a broader conversation that integrates pedagogical practices and frames the shift from education to employment. Soproni (2023) underscores the need to reset the structural competencies of graduates and emphasises the value of soft skills and 21st-century capabilities that go beyond the purely technical.

In this context, employability should not be framed solely as an outcome, but as a pathway that encourages the cultivation of critical thought and social responsibility. Fellows (2023) contends that critical educators should engage with the employability agenda, positioning education as a vehicle to foster student intellectual self-governance and civic engagement. This view supports the embedding of media and information literacy (MIL/IL) into authentic learning frameworks where employability is approached as a reflective and ethical consideration instead of a mere response to the needs of the labour market.

Prior research by Succi and Canovi (2020) and Chiu et al. (2024) underscores a persistent misalignment between students' self-perception of their competencies and employers' expectations. While students often feel confident in communication or teamwork, employers report deficits in problem-solving, adaptability, and digital literacy. These findings reinforce the importance of developing such skills and engaging students in reflective practices that allow them to recognize, articulate, and refine these competencies, particularly within internship settings.

In the university environment, measuring informational competencies requires instruments sensitive to the educational and disciplinary context. Developed and tested as a useful means for evaluating students' proficiency in searching, assessing, processing, and communicating information, the IL-HUMASS model has proven to be a reliable framework in academic research. Pinto et al. (2024) explain that this tool helps identify what students do well and where they struggle with information skills, and it summarizes their performance using indicators that give an overall view of their abilities in social sciences. The cited instrument facilitates pedagogical and curricular decision-making to strengthen these key competencies in the digital age.

A meaningful education must go beyond the development of technical or informational skills; it must also connect with the authentic commitment of the student to his or her training process. Along these lines, Jackson and Rowe (2023) propose concrete actions to promote student involvement, emphasizing aspects such as agency, active learning, and the social relevance of knowledge.

These proposals are aligned with the idea that information and media literacy must be articulated with educational experiences that challenge the student as a reflective subject, not only as a recipient of skills. Therefore, promoting active participation in face-to-face and technology-mediated learning environments reinforces the transformative potential of integrated initiatives like those discussed here.

For their part, Pinto and Guerrero-Quesada (2017) applied IL-HUMASS to Spanish university students to investigate how they perceive their informational skills. Their findings underline a moderately positive self-perception, especially in basic skills such as locating sources, but also reveal crucial gaps in more complex aspects such as the critical evaluation of information or its ethical communication. This type of study confirms the usefulness of IL-HUMASS not only as a diagnostic tool but also as a starting point for designing educational interventions that respond to the real needs of students.

As a result, because AI permeates most fields, integrating experiential learning and IL has become even more relevant. Students need not only to use AI tools but also to question their outputs and understand their limits as automation reshapes job profiles; digital fluency is now essential. In a rapidly changing environment, AI is a disruptive force that affects jobs, access to jobs, and the skills those jobs demand.

The OECD (2023) reports that the spread of AI complicates progress on gender equality, labour-market inclusion, and the preparation of students for the labour market; it is also altering how work is organised. These challenges call for educational responses that combine critical literacies (information and digital) with technical expertise.

Following Deming and Noray (2020), graduates who are strong in problem-solving and information processing are more capable of coping with AI-driven change, particularly in roles that require human judgment and flexible thinking. To help students succeed in this data-rich world, institutions need to adopt methods that integrate critical literacy with practical, applied learning.

2. Methodology and Integration of Sources

At a single large public university, this study implemented a mixed-methods approach to integrate three programme studies (Anonymous Sources A–C) which were selected a priori (the same institution, undergraduate cohorts, IL/MIL outcomes, and extractable statistics).

Quantitative data stem from an adapted IL-HUMASS (descriptives, Pearson correlations; pre-post for the intervention aligned with course and internship tasks). Qualitative data are from Item-29 free-text responses and were analysed using reflexive thematic analysis. During the study, alignment for comparability and analysis integration was documented; data collection procedures ensured anonymity and voluntariness in accordance with institutional policy.

2.1. Context and Participants

The students involved in the research were undergraduate participants, mostly aged between 20 and 23 years. This stage—marked by the transition from academic learning to early professional life—is critical for fostering the reflective and ethical capacities required in today’s rapidly changing digital and work environments. In this context, the integrative model proposed in this study (illustrated in Figure 1) is tailored to the developmental needs of young adults preparing to enter the workforce.

2.2. Instrument Used

An adapted version of the IL-HUMASS instrument was applied, and its contextual use has been previously discussed in the literature. A comprehensive overview of information literacy tool adaptations in Latin America and Spain can be found in Pinto et al. (2024). This version was tailored to align with the educational context and information practices of undergraduate students in Mexico, ensuring cultural and curricular relevance while maintaining the instrument’s reliability.

2.3. Prior Empirical Studies and Integrative Approach

This article is based on three programme studies conducted at a single large public university in north-eastern Mexico. This research provided an empirical basis and comparative insight into the development of digital competencies and experiential learning. While they are diverse in design and scope, together, they reveal patterns that inform the central thesis of this article:

2.3.1. Study A — Survey of 426 Students (Design, Measures, Analysis)

A survey was applied to 426 students enrolled in professional programmes from various disciplines to explore their participation in internships and their correlation with developing transversal competencies such as teamwork, problem-solving, adaptability, and initiative.

The study, which covered branches such as engineering, health sciences, social sciences, and creativity, revealed that the chances of doing internships are not equally distributed and that this influences the options of finding a job. The data were obtained through a structured online questionnaire composed of 25 items, including both closed-ended (Likert-scale) and open-ended questions. The questionnaire assessed students’ self-perceived proficiency and the importance they assign to various digital and information competencies.

Descriptive statistics (means, standard deviations, and frequencies) were calculated, and Pearson correlation coefficients were used to examine relationships between the variables, particularly between perceived importance and self-assessed performance across dimensions such as ethical information use, critical evaluation, and digital collaboration.

2.3.2. Study B — Educational Workshop (Pre/Post with Communication Students)

The instrument was adapted to better fit the local curriculum and the needs of the students while still assessing information literacy in educational settings. Three groups of communication students used the educational workshop as a before-and-after test. The session focused on seeking information and evaluating sources, digital ethics, and disinformation. The revised instrument allowed for a better assessment of growth, particularly on topics such as algorithmic awareness, media manipulation, and the dissemination of ethical content.

2.3.3. Study C — Large-scale Diagnosis (>500 Students)

The intervention showed measurable improvements, with differences by gender and performance across studies. An exhaustive research study of more than 500 students from different faculties sought to evaluate what they thought and did concerning digital literacy and media and information literacy (MIL).

The study used closed-ended and open-ended questions to see if students knew how to find reliable information, assess the credibility of sources, and think about how they engaged in digital communication. We paid particular attention to students' exposure to misinformation during the COVID-19 pandemic and their understanding of how algorithms affect what content is visible.

2.4. Integrative Synthesis and Cross-study

Although the methods varied—including quantitative surveys, pedagogical interventions, and perception diagnoses—all three studies converged on a key point: there remains a clear gap between having access to information and knowing how to use it critically and ethically.

Additionally, students are showing more interest in engaging with educational activities that integrate theory with practice.

These conclusions imply that neither integrated learning (IL) nor vocational training can be effective in isolation. A more robust and responsive system of higher education in Latin America—where significant barriers to digital access and employment stymie opportunities—could be achieved through more thoughtful curriculum design or cross-disciplinary co-curricular programmes that blend both approaches.

2.5. Sampling and Selection Criteria

The study used purposive sampling within a single large public university in north-eastern Mexico. Eligible participants were undergraduates currently enrolled, with at least two semesters completed, and engaged in an internship, a work-integrated learning placement, or the study's experiential module.

Recruitment proceeded via course announcements and programme mailing lists. The sampling aimed for breadth across disciplines, stage of study, and gender so that different student voices were represented. Participation was voluntary; consent was obtained online with no incentives, and responses were collected anonymously under prior institutional ethics approval.

2.6. Qualitative Analysis

Open-ended responses to Item 29 (n=176) were analysed using reflexive thematic analysis, following the six phases of familiarisation, coding, theme development, review, definition, and reporting. Coding proceeded iteratively by the research team; to enhance trustworthiness, an audit trail and analytic memos were maintained throughout.

Data management was conducted in a spreadsheet environment. Excerpts are anonymised and presented in English translation, with brief quotations used to illuminate themes that align with the quantitative trends (e.g., source evaluation, responsible use of AI, and employability-related literacies).

Illustrative comments (Item 29): “Develop research skills: identify relevant information from reliable sources for professional tasks.” (Student, Q29). “We need courses on using AI responsibly to support workplace tasks and professional growth.” (Student, Q29). “Speaking other languages is key for broader job opportunities and professional progression.” (Student, Q29).

Taken together, these responses foreground literacies that students perceive as directly connected to professional development: the ability to interrogate sources, to use emerging technologies responsibly, and to build communicative repertoires (e.g., additional languages) that widen access to opportunities.

2.7. Procedure and Intervention

The intervention was delivered within regular teaching for an experiential module at a large public university in north-eastern Mexico. After a brief orientation, students completed a baseline IL-HUMASS survey (plus open-ended Item 29). A workshop then guided them through authentic tasks—locating and evaluating sources for their field, discussing digital ethics and misinformation, and practising responsible use of AI tools—supported by short reflective prompts.

Immediately after the session, students completed the post-survey (same IL-HUMASS subscales and Item 29), allowing pre/post comparison. For those on internships or work-integrated learning placements, the workshop was embedded in their seminar to keep activities close to workplace realities.

All responses were anonymised and linked only by study codes; participation was voluntary and took place in scheduled class time with no incentives. This sequencing enabled measurement of short-term gains while keeping the experience practical, relevant, and *low-burden* for students.

2.8. Inclusion/Exclusion

The synthesis incorporated three prior empirical studies (Anonymous Sources A-C). Inclusion criteria were set a priori: undergraduate cohorts from north-eastern Mexico; outcomes on media/information literacies (IL-HUMASS or closely aligned constructs); quantitative or mixed-methods designs with comparable descriptive statistics; and some qualitative material (open responses or brief reflections) for triangulation.

Studies were excluded if methodology was insufficiently detailed, instruments were non-comparable, results were purely theoretical/opinion, or summary data were not extractable. Variables and scale ranges were harmonised across sources, with all decisions recorded in a concise log. Potential author-selection bias was mitigated by applying the same explicit criteria to every candidate study and documenting reasons for inclusion or exclusion.

2.9. Limitations/Assumptions

This study draws on a single large public university, which limits generalisability across institutions and regions. IL-HUMASS scores are self-reported and may over- or under-estimate competence; this was mitigated through triangulation with qualitative themes and simple performance indicators. The pre/post window around the workshop captures immediate change

rather than durability. Internship and placement contexts varied, so exposure was heterogeneous; analyses are descriptive and avoid causal claims.

The integrative synthesis rests on harmonisation decisions (e.g., scale alignment, codebook mapping) and author-led selection; risks were reduced by applying a priori inclusion/exclusion criteria, anonymising sources (A–C), and keeping a synthesis log. Qualitative excerpts were translated and lightly edited for clarity while preserving meaning. A fuller account of study-level limitations and transferability is provided in Section 4.4.

3. Results and Synthesis

The key dimensions that emerged in the analysis—professional engagement, information competence, and media literacy awareness—present the findings of the three studies. This section reports outcomes from three studies (see Section 2.8). We prioritise indicators with complete, comparable coverage across cohorts and omit ancillary metrics without aligned baselines to ensure an impartial and transparent presentation of results.

3.1. Professional Commitment and Skills Development

Table 1 is presented because it addresses RQ1 on access to professional experiences. We restrict the display to graduating students (n=110) to allow like-for-like comparison across areas. Ancillary participation indicators are not shown here as they lack comparable denominators; they are documented in the underlying study.

Data from the survey of 426 undergraduates revealed that 63.4% had participated in at least one internship or professional experience. Among students who are about to graduate, more than 78% reported some type of prior professional commitment, and nearly half indicated having participated in two or more activities. Fields such as engineering and health sciences showed the highest levels of participation, while social sciences and creative fields lagged markedly.

TABLE 1. PARTICIPATION IN INTERNSHIPS AMONG GRADUATE STUDENTS BY AREA (N=110)

Area	1 internship (%)	≥2 Internships (%)
Engineering Disciplines	67.94	44.20
Business-related Disciplines	50.62	40.74
Health and Medical Disciplines	62.86	47.14
Social Sciences Disciplines	34.62	25.00
Creative Disciplines	50.00	16.67
Built Environment Disciplines	46.67	24.44

Source: authors' own calculations, 2024

Note 1: Study A; see Section 2.8 for inclusion and harmonisation criteria.

Note 2: Values indicate the percentage of graduate students who reported having completed at least one or two internships during their studies, categorized by academic area. Percentages are not mutually exclusive, as some students may fall into both categories.

These professional experiences were associated with the perceived development of key transversal competencies. Among the participants, 82.1% highlighted the growth in teamwork,

76.5% in adaptability, 74.3% in communication, and 69.8% in problem-solving. The students reported slightly higher gains in communication and adaptability based on cross-table data. This aligns with prior literature on competency gaps, further validating the impact of integrated pedagogical models. A brief association with transversal competencies is reported descriptively; interpretive implications for employability are developed in Section 4.

3.2. Informational Competence after IL Interventions

Table 2 focuses on pre-/post change in IL-HUMASS dimensions aligned with RQ2. Differences are computed as post minus pre using the same response scale across items. Non-comparable or ancillary indicators were excluded to avoid redundancy. The intervention, which used a modified version of the IL-HUMASS tool, showed clear improvements in five pivotal areas of thinking.

The most significant improvements occurred in communication and dissemination (+1.14) and information evaluation (+1.09), followed by considerable advances in information processing and search strategies.

TABLE 2. PRE- AND POST-TEST MEANS BY IL-HUMASS DIMENSION

Dimension	Pre-test	Post-Test	Difference
Information search	6.91	7.69	+0.78
Evaluation of information	7.02	8.11	+1.09
Information processing	7.20	8.10	+0.90
Communication and Dissemination	5.91	7.05	+1.14
Ethical use and management of AI	7.40	7.68	+0.28

Source: Authors' own calculations, 2025

Note 1: Differences are post-pre on identical response ranges; internal consistency was acceptable.

Note 2: Mean scores were obtained from pre- and post-test self-assessments using an adapted IL-HUMASS instrument. Improvements reflect students perceived growth in informational competencies across five dimensions after the intervention. Scores range from 1 (very low) to 9 (very high).

Participants' qualitative reflections revealed increased confidence in navigating digital platforms, greater understanding of search engines, and increased sensitivity to algorithmic curation and manipulation. Students also asked for clearer institutional support and better-prepared teachers in future interventions. "Develop research skills: identify relevant information from reliable sources for professional tasks." (Student, Q29). "We need courses on using AI responsibly to support workplace tasks and professional growth." (Student, Q29).

3.3. Media Literacy and the Challenge of Disinformation

The diagnostic study with more than 500 students from various faculties offered a broader perspective on media literacy and misinformation. Students reported high levels of digital news consumption (mean score: 6.67/10) and awareness of media responsibility (7.70/10) but considerably lower scores on identifying and resisting misinformation (4.03/10). Participation in specific MIL campaigns was the indicator with the lowest rating.

Table 3 summarises self-perceived media literacy (0–10 scale) to address RQ3 on disinformation resilience. We report scale means with consistent anchors; items with limited comparability or low response coverage are not included here but note in the study record.

“Speaking other languages is key for broader job opportunities and professional progression.”
(Student, Q29)

TABLE 3. MEDIA LITERACY (MIL) SELF-PERCEPTION AVERAGES (0-10)

Dimension	Average score
Digital News Consumption	6.67
Diversity in news types	6.68
Awareness of media responsibility	7.70
Spread of fake news	4.03
Participation in MIL campaigns	3.69

Source: authors' own calculations, 2025

Note 1: Means on a 0–10 scale with consistent anchors.

Note 2: Values represent students' self-perceived competence in key areas of media and information literacy (MIL), measured on a 0–10 scale. Lower scores in categories like detecting fake news and active participation indicate areas that require further educational efforts.

These findings suggest that although students demonstrate a general awareness of media, their critical literacy remains underdeveloped, particularly when resisting algorithmic persuasion and misinformation in digital environments. The low participation in structured MIL initiatives indicates a gap in curricular integration and institutional commitment.

4. Discussion: Towards a Synergistic Educational Strategy

In all three studies, systematic, self-reflective, and work-integrated activities assist learners in applying disciplinary knowledge and in deepening evaluative judgement, ethical practice, and digital resilience. The integration of information literacy and media literacy (IL and MIL) into project-based and applied curricula is more useful than that offered in standalone workshops. In turn, this demands professional development on teaching critical thinking and digital judgement, as well as systemic institutional frameworks that allow for cumulative interaction with genuine information challenges.

4.1. Integrated Synthesis of Findings

Combined, these findings support the importance of literacy and experiential learning interventions. When the results of these three lines of research are combined, there is much promise in integrating IL development with experiential learning. When integrated with structured and reflective educational learning, internships allow students to apply their disciplinary knowledge in practical contexts. They also help improve technical and cognitive skills, ethical judgement, and digital resilience.

Institutions should incorporate IL and MIL into project-based and applied learning frameworks rather than treating them as stand-alone workshops or additional material.

Teacher development becomes crucial in this effort because educators must be prepared to foster critical thinking and digital judgment and guide student content acquisition. Similarly, institutional infrastructure and digital resources must support iterative engagement with real information challenges.

In short, the data shows that participants who experience both literacy programmes and professional settings feel more confident and secure in handling information, making them more likely to question digital content, spot misinformation, and share their views. This means that disinformation becomes a significant challenge in education, culture, and technology.

For all the above, universities should consider the initiative to promote ethical judgment and intellectual independence as essential components of higher education in a tangible way in their curricula, and a good route would be to improve students' preparation for a world that is becoming more complex and mediated. This means 'building bridges' between theory and practice by incorporating work immersion, applied learning, and personalised digital literacy programmes.

4.2. Curriculum-level Implications

Bringing together information literacy (IL) and media and information literacy (MIL) with hands-on learning methods like internships provides a beneficial way to tackle both digital misinformation and job readiness. The findings of all three applications underscore a consistent theme: students gain the most significant advantage when they can integrate theoretical knowledge with genuine, practice-oriented experiences, especially when supported by analytical and systematic reflection frameworks.

The experiences in the labour field offer a vision of the professional panorama, but without the essential frameworks of IL, this vision may remain superficial. Conversely, IL-independent education may not develop the adaptive skills that employers desire. This work shows that transformation occurs at the intersection of lived experience and critical reflection.

Students who encounter real information problems during internships while learning about ethics, communication, and digital thinking tend to learn more and feel better prepared. This leads institutions to change their strategies, as these skills should be part of hands-on education instead of being treated as separate programmes.

This implies that internship guidelines, final projects, community service, and practical research should incorporate essential digital skills. Recent reviews show applied, reflective curricula outperform stand-alone workshops in durable outcomes (Jackson & Dean, 2023; Tembrevilla et al., 2024).

4.3. Teacher Development and Institutional Support

Additionally, teachers need more training and resources to help combine academic learning with new digital skills, such as understanding algorithms and using AI ethically, to enhance the job readiness of future professionals.

In addition, findings around misinformation point to an urgent need to treat MIL not only as a protective skill set but as a formative educational goal. Students demonstrated a relatively strong awareness of media responsibility but struggled to identify manipulation or misinformation, particularly on fast-moving digital platforms. The data shows that the issue is

not just access to technology or information, but also the ability to interpret, resist, and act on it wisely. Universities must take on this challenge as part of their public mission.

Ultimately, the study reinforces the notion that 21st-century skills are hybrid. They combine technical knowledge with social vision, ethical reasoning, and adaptive communication. To promote these skills, universities in Latin America and elsewhere should opt for educational approaches that cross several disciplines, that are practical, and that focus on teaching how to function in the world of information.

Bridging IL, MIL, and learning by doing makes sense from a teaching perspective and helps students prepare for the challenges they will encounter as workers, citizens, and people who never stop learning.

This study highlights how meaningful learning arises when instruction, practical experience, and critical reflection are thoughtfully combined, providing students with the capacity to adapt, evaluate, and engage responsibly in uncertain environments.

Instead of viewing IL and MIL as isolated courses or separate topics, schools should include them in project-based curricula and learning by doing. For this to happen, teacher development is significant because teachers must be able to help students learn new things and help them develop digital judgement and critical thinking skills. Digital resources and institutional infrastructure should also make it easier to work on real-world information problems.

The data in this work demonstrate that students who have been immersed in professional environments and participated in literacy programmes report feeling more confident and independent. They are more likely to spot false information, question what they see online, and clearly say what they mean. This data would reinforce the notion that disinformation is not only a technical issue but also a pedagogical and cultural dilemma.

Therefore, universities must be more active in teaching students to think for themselves and make moral decisions as essential parts of higher education. Bridging theory and practice through internships, applied learning, and customised digital literacy programmes substantially enhances students' readiness for an increasingly intricate and mediated environment.

4.4. Limitations and Transferability

This discussion reflects evidence from a single large public university in north-eastern Mexico, which may limit transferability across institutions and regions. Self-report IL-HUMASS scores can misestimate competence; we tempered this with qualitative triangulation and pre-/post comparison.

The workshop window captures immediate change rather than durability. Internship contexts varied, so exposure was heterogeneous, and findings are reported descriptively rather than causally. Finally, the integrative synthesis required harmonising scales and codebook labels across sources A–C; decisions were logged to maintain transparency. See Section 2.9 for methodological assumptions.

5. Recommendations for Institutional Action

To make a tangible impact, universities need to adopt a blended approach that integrates the teaching of theoretical concepts with the practical application of digital skills. The following steps can operationalise this approach at the programme level:

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- **Integrate across curricula:** Embed IL and MIL across curricula; they should be integrated across all programmes rather than offered as stand-alone courses.
 - **Personalised vision:** Develop information literacy programmes tailored to each academic discipline. For instance, in communications, students will critique the processes involved in news dissemination as well as the influence of algorithms, whereas nursing students will assess the veracity of medical information.
 - **Social media campaigns:** Develop engaging but straightforward initiatives centred around themes like artificial intelligence utilization, identifying misinformation, and exploring digital literacy. Such themes can be organised into digital challenges or week-long events focusing on a particular topic.
 - **Teacher development:** Enhance educators' competencies in media analysis, information literacy pedagogy, and responsible integration of AI through regular workshops and micro-credentials.
 - **Student agenda:** The objective is to cultivate engagement and ownership while also offering backing for student-initiated ventures such as IL clubs and peer-to-peer or group workshops.

These recommendations are not just about listing specific actions; they are about reshaping instructional approaches in a constantly changing context. This paradigm shift will better equip adopters of this integrated approach—wherein media and information literacy are incorporated into the curriculum rather than treated as supplementary—to nurture socially responsible, adaptable, and purposeful graduates.

The responsibility of fostering the connections between human values and digital technologies, theory and practice, is now a shared obligation. The path ahead consists of building collaborative spaces where instructors and students actively engage in the processes of learning, reflecting, and growing together.

6. Conclusions

Higher education's responsibility in times of uncertainty is not limited to the provision of information since, at the same time, it must also encourage the development of adaptability, accountability, and discernment.

This article provides valuable information for an 'educational paradigm' that combines internships and information literacy, not as separate or simultaneous initiatives, but as processes that work together; student growth is most significant. These findings reaffirm the pedagogical value of combining real-world exposure with reflective literacy frameworks. In addition, the research discussed here shows that this dual approach improves students' transversal skills, boosts their confidence, and encourages them to think about their actions.

It is significant to note that, in addition to the institutional application of this dual strategy, instruments like IL-HUMASS provide a valuable means of evaluating students' self-perceived skills and modifying instructional tactics as necessary. Identifying students' knowledge, comprehension, and material application creates new opportunities for purposeful learning experiences.

These tools motivate educators to consistently reflect and cultivate a deeper understanding of the processing and communication of information in practical scenarios. Finally, universities that combine applied learning with digital literacy are not only preparing their students for work.

They are also improving their citizens, ensuring that they can think, speak, and act honestly. In a world of complexity and misinformation, empowering students with both skills and critical awareness is not optional—it is urgent. In the current information ecosystem, shaped by both truth and opportunity, only education that bridges competence and conscience will empower students for the future.

Ultimately, this model seeks to contribute to the formation of a sustainable, ethical, and critically engaged generation of early-career professionals prepared to thrive in digital and professional ecosystems.

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Declaration Statements

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