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(IJEPC)**<https://gaexcellence.com/ijepe>**CASE STUDY OF UITM KEDAH ON THEMATIC ANALYSIS
OF INDUSTRIAL TRAINING REPORTS FROM LIBRARY
MANAGEMENT STUDENTS**

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Abstract:

Industrial training in Library and Information Science (LIS) education is an important feature, which serves to integrate theory learnt in the classroom, into practice and the construction of one's identity as an information professional. Ten industrial training reports submitted by Bachelor of Information Management (Library Management) students to Universiti Teknologi MARA (UiTM) Kedah Branch were analyzed using the Braun and Clarke (2006) thematic analysis approach to explore how the students reflected on the variety of learning they gained during industrial training. A total of seven themes were identified: experience in multiple departments of the library; technical and digital skills acquisition; user and information literacy development; outreach and promotional involvement; employability skills and soft skills enhancement; professionalism and workplace adaptation and issues related to cataloguing and technical duties. Together, the findings illustrated how industrial training acts as a technical practicum as well as a socialisation process for students. Through industrial training, they gained necessary skills, adapted to workplace expectations and began to envisage themselves as upcoming information professionals. Additionally, students described Cataloguing as a 'productive struggle' that developed patience, tenacity and critical thinking ability. In addition, students' personal reflections during industrial training

revealed an in-depth understanding of their development, though self-reported outcomes might represent limitations due to subjectivity and would benefit from being supplemented with external data from supervisors, users and long-term follow up with careers.

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Keywords:

Cataloguing Challenges; Employability Skills; Experiential Learning; Industrial Training; Library and Information Science (LIS) Education; Professional Identity Formation; Reflective Practice.



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Introduction

Introduction Industrial training programmes, typically structured as internships, offer a crucial transition from classroom theory to professional application in Library and Information Science (LIS) programmes. Practical experience in the LIS field facilitates direct engagement with the library environment, information management functions, and client-centric service delivery, while simultaneously developing transferable abilities such as interpersonal communication, collaboration, flexibility, and professional behaviour (Yesmin, 2024; Alam & Yesmin, 2024). In Malaysia, industrial training has been systematically incorporated as a credit-earning component in LIS programmes, including the Bachelor of Information Management (Library Management) route, with the explicit intention of enabling students to bridge theoretical knowledge with practical skills and cultivating a sense of professional identity (Razak et al., 2024; Selamat et al., 2023; Osman et al., 2025).

Reflecting global trends, comparable LIS programmes in neighbouring Southeast Asian countries also identify the internship as the paramount experiential learning mechanism for information professionals (Cabfilan et al., 2025).

In the context of UiTM Library Management programme, students engage in internships in libraries and information organisations and submit reports which reflect their personal experiences, difficulties and learnings from their industrial training. The LIS internship goes beyond the acquisition of technical skills. Internships serve to increase employability by blending professional skills with a set of more general capacities like problem-solving, teamwork and customer service-oriented interaction, boost confidence levels and provide a broad perspective on the roles librarians play in the knowledge economy (Ramsgaard &

østergaard, 2018; Selamat et al., 2023; Cabfilan et al., 2025). Evidence indicates an improvement in cataloguing and metadata, in familiarity with library software systems and in the development of information literacy instructions and a general improvement in the interpersonal and organisations skills of students (Alam & Yesmin, 2024; Selamat et al., 2023).

Additionally, a recently published study on policy in Iran recommends restructuring internship curriculum so as to reflect emerging market demands, the rapid pace of technological change, and the importance of training for various workplace types ranging from research institutes to information management units (Gavani & Mahami-Oskouei, 2025).

Furthermore, the internship experience is central in fostering professional identity and in encouraging the ability to adapt to the new demands faced by the libraries such as community engagement and outreaching programmes and align with larger societal and cultural missions of the libraries (Tinajero-Vázquez & Carr, 2024; Popov, 2020). Several systematic reviews of the LIS internship have revealed a consistent need to adapt internships so as to equip students with new competencies, improved supervision and industry alignment (Noor Azizi & Kaur, 2024). While the significance and merits of the internship have been acknowledged broadly, research explicitly analysing students' reflective documentation as the main data source to investigate comprehensive learning outcomes remains relatively limited.

In most studies, graduate employment surveys, evaluations by employers or reviews of internship curriculum are used to determine the internship outcomes; and the students' interpretations of the translation of theory to practice, the evolution of professional identity and of workplace adaptation are often overlooked. In many disciplines, reflection processes are typically investigated through content or qualitative analyses of reflective accounts such as student diaries or papers to construct and build knowledge, to improve pedagogical interventions and to guide curriculum development (Ribeiro et al., 2016; Nkadameng et al., 2016; Li, 2025; Teng et al., 2024). The results from numerous systematic reviews in this regard indicate that student reflection is instrumental in higher education to promote self-awareness, professional socialization, and critical thinking skills in various academic disciplines (Sudirman et al., 2024), and there is also recent interdisciplinary evidence suggesting that students find reflection more meaningful if its objectives and relation to their future professional practice are clearly illustrated through carefully structured curriculum design (Rook et al., 2025).

Preliminary results of student-generated reports have shown to be informative in identifying not only student competencies, professional dispositions and curriculum alignment but also nuances of students' internship learning experiences in LIS programs (Alam & Yesmin, 2024; Ribeiro et al., 2016).

This study contributes to address this research gap through thematic analysis of ten industrial training reports prepared by UiTM Library Management students. This study examines various aspects of students' reflective accounts focusing on the acquisition of technical competencies, client service delivery, community outreach engagement, enhancement of employability skills, and identified challenges during their internships. This study applies thematic analysis based on Braun and Clarke's (2006) framework in order to analyse and identify prevalent themes from the student reflections. The objectives are:

1. To explore the different types of learning experiences reported by students of the Bachelor of Information Management (Library Management) at UiTM during their industrial training.
2. To investigate and classify the emerging themes reflecting the students' professional and personal development as expressed in their reflections.
3. To discuss the implications of these findings for the field of Library and Information Science Education, especially concerning curriculum development and improving graduate employability in the Malaysian context.

This research employs a student-centric approach that leverages documentation to analyse students' own perspectives of their professional growth, difficulties encountered, and evolving identity during their internship experiences. In doing so, it seeks to contribute to the broader discussions on the future role of libraries, the inclusion of outreach and information literacy in professional practice, and the central role of reflection in LIS education (Tinajero-Vázquez & Carr, 2024; Popov, 2020).

It is hoped that the findings of this study can inform the development of improved curricula, supervisors' practices, and institutional support for industrial training in Malaysia and provide comparative perspectives to other LIS programs within the region and internationally (Razak et al., 2024; Selamat et al., 2023).

Literature Review

In the present study, a literature review will be compiled across four areas, namely, the role of industrial training in LIS education, reflective practice and thematic inquiry in studying internship experience, methodological relevance of thematic analysis and positioning LIS within the higher education system of Malaysia, which together frame the contribution of this research.

Industrial Training in LIS Education

Industrial training is an integral part of LIS professional development that allows learners to practice academic skills in real working settings (Kheng, 2017; Husain & Nazim, 2015). Malaysia increasingly emphasises the importance of such experiential training by formally incorporating it into the outcome-based education (OBE) system as one means of ensuring that the academic and professional programmes align with the country's socio-economic development goals (Hashim et al., 2023). As discussed extensively in prior studies, an LIS industrial internship offers much more than acquisition of technical skills per se; interns learn how to communicate professionally, develop maturity and gain insight into the multi-faceted roles of librarians in the knowledge-based society (Husain & Nazim, 2015).

The technical aspect involves the acquisition of various skills, such as cataloguing and metadata, indexing and abstracting and information literacy, along with interpersonal competencies like teamwork, effective communication, problem solving and flexibility that are generally perceived as prerequisites for professional success in the information age (Husain & Nazim, 2015).

The work experience in terms of interaction with the customers/users and with supervisors, within the organization/team context contributes significantly to students' construction of professional identity and understandings of the modern libraries' mission (Hashim et al., 2023).

Reflective Practice and Thematic

Inquiry in Internship Research The nature of the intern's reflective writing often reveals the interns' process of learning through practice, how they process the experience of change, identity re-Negotiation, and developing a sense of themselves as a professional (Kheng, 2017; Hashim et al., 2023). Reflective reports offer unique insights by providing students' voice on the experience which cannot be collected through the supervisors' evaluations or employer reports, surveys. Unlike any employer evaluation or survey study of internships, reflective reports allow interns to make sense of the learning they had undergone throughout the internship programme.

Students develop dual capabilities: technical skills which are closely related to professional practices and intrapersonal skills necessary for social functioning in the organization and as well as boundary crossing and professional role definition in different professional contexts (Kheng, 2017).

Reflective practice in higher education is also widely acknowledged as playing a crucial role in facilitating 'boundary crossing' and renegotiation of student identities and experiences (Moriarty & Murray, 2019).

Thematic Analysis as a Method for Interpreting Internship Narratives Thematic analysis, perhaps due to its accessibility and versatility, has emerged as the one of the most common method for qualitative analysis of data, particularly for study of reflective internship writings, it is able to provide rich and systematic thematic analysis to a range of qualitative material including interviews, focus group, reflective writing and internship report data without constraining the researcher too closely to a pre-conceived theoretical framework (Kim et al., 2015). As for LIS, thematic and narrative analyses have also been widely used to examine student reflections on the experience and practical elements of the internships that has led to the investigation on student's perception towards professional role, preparedness and curriculum evaluation (Kheng, 2017; Husain & Nazim, 2015). It positions student 'voices' as valid evidence in evaluating programme outcomes and provides a detailed understanding of experience that goes beyond quantitative measure.

LIS In the Malaysian Higher Education Landscape

The higher education system in Malaysia places emphasis on experiential learning as an essential pedagogy where learning is integrated within context and real-life practices of industry and community engagement (Chiang, 2021). It is for LIS programme particularly, through inclusion of compulsory internship components in all curricula, to offer the exposure of the students in real practice while at the same time preparing students to meet national expectations of their role in national force needs (Hashim et al., 2023). Recently, many universities and institutes across Malaysia focus on developing new measurement tools to assess and improve the quality of the student's experiential learning based on OBE requirements and its intended outcome. Therefore, for UiTM's Library Management programme, internship report will serve not only as one of the formal assessment components

but more importantly as one of the key data sources for understanding the learning outcome and overall quality of the programme.

Gaps and the Present Study's Contribution

Though a large number of research have focused on the study of LIS internships and many reported their findings based on the perceptions of supervisors and employers or a general employability survey approach (Husain & Nazim, 2015; Kheng, 2017), few have focused on analysing student internship reflection as the primary source of data, which is the central issue of this study. Student-generated reflective reports present invaluable sources of data to understand the complex interplay of theory, practice, challenge and professional identity development. However, the thematic and narrative methods, though popular and broadly used in many fields, are not widely utilized and investigated as the primary analysis strategy for LIS student's internship reflective accounts (Kim et al., 2015).

In this research, a systematic application of the thematic analysis method to analyze 10 UiTM Library Management students' industrial training reports, is proposed. The contribution would lie in the student-centered approach, utilizing the reports as a main data source in accordance with Malaysia OBE model and also, in supporting the role of reflective practice in enhancing LIS education through an in-depth examination of students' experience and understandings.

Methodology

The current study employed a qualitative methodology that centers on students' own perspectives from their respective internship reports. Industrial training reports represent a narrative of the student's journey of learning how to adjust to real working environments, how to translate the theoretical knowledge and concepts gained in classrooms into actual practices, and how to cope with the reality of operating in a professional setting like the library. The research design, data source, sampling methods, analysis technique, trustworthiness, and ethical considerations are explained in the following subsections.

Research Design

This study was conducted with a qualitative research design that utilized the analysis of documents as a principal means of inquiry.

The document analysis technique allows for a systematic analysis and interpretation of text, whereby researchers search to uncover meanings in the records of participant's experiences and thoughts (Patton, 2015; Rijnsoever, 2017). The reports of the industrial internship undertaken by students were treated as reflective artefacts revealing their perception of working with and in the real workplace and learning how the actual practice applies theoretical concepts in information environments, which made them appropriate for LIS research.

Data Source

The data in this study consist of 10 industrial training reports written by final year students of Bachelor of Information Management (Library Management) UiTM Kedah for IMC690 Industrial Training. There are twelve students in the IM260-equivalent cohort but only ten industrial training reports were received to the date of analysis.

The format of the reports followed a guideline where it covers organizational background, department's placement, the list of duties, challenges encountered and students' reflections of the outcome of their industrial training.

The choice of these documents was because these reports represent direct and personal experiences of students' internship with the real world workplace, which includes both practical skills and Soft skills.

Sampling

In this study, purposive sampling was used by including all the reports available from the cohort of twelve students (n=10) in UiTM Kedah. The number of sample was small, but this was consistent for the population of this study and appropriate for a qualitative research which favors the in-depth understanding of a phenomenon rather than quantity (Rijnsoever, 2017).

At tenth report, it seemed thematic saturation was achieved. This was consistent with established practices in qualitative research design to include information-rich cases that will produce a deeper understanding of the phenomena of interest (Patton, 2015; Fasific et al., 2023).

Data Analysis

The reports were analyzed using thematic analysis, based on the six-phase framework by Braun and Clarke (2006).

This method provides an organised yet flexible approach to identify, analyse, and report patterns (themes) within the data.

Thematic analysis is a suitable methodology to use in analysis of the reflective documents such as industrial internship report. Table 1 shows how the six phases were adopted and operationalized for this study with some examples from students' industrial reports. Figure 1 displays an overall picture of the data analysis process in which shows the iteration through the phases.

Table 1: Data Analysis Process Using Braun and Clarke's (2006) Framework

Phase	Description of Step	Application in This Study	Example from Reports
Familiarisation	Read and re-read reports; note recurring issues and reflections.	All 10 reports read in full twice.	Daily circulation routines and initial system navigation difficulties.
Generating Initial Codes	Label meaningful data segments without interpretation.	Segments on technical skills, user interaction, and workplace challenges were coded.	"Difficulty with MARC fields" → <i>Cataloguing challenge</i> .

Searching for Themes	Cluster related codes into potential themes.	Codes grouped into technical, soft-skill, outreach, and supervision categories.	“Teamwork” and “communication with patrons” → <i>Employability and soft skills</i> .
Reviewing Themes	Check themes against the data; refine and merge overlaps.	Themes compared across reports; some codes reassigned.	“Information literacy workshops” merged into <i>User services and information literacy</i> .
Defining and Naming Themes	Refine scope and write clear theme definitions.	Seven final themes defined with concise labels.	<i>Professionalism and workplace adaptability</i> : adjusting to workplace culture and demonstrating maturity.
Producing the Report	Integrate analysis with literature; present themes logically.	Framework built to show links between technical learning, user engagement, and identity.	“I learned patience when assisting elderly patrons” → evidence under <i>User services</i> .

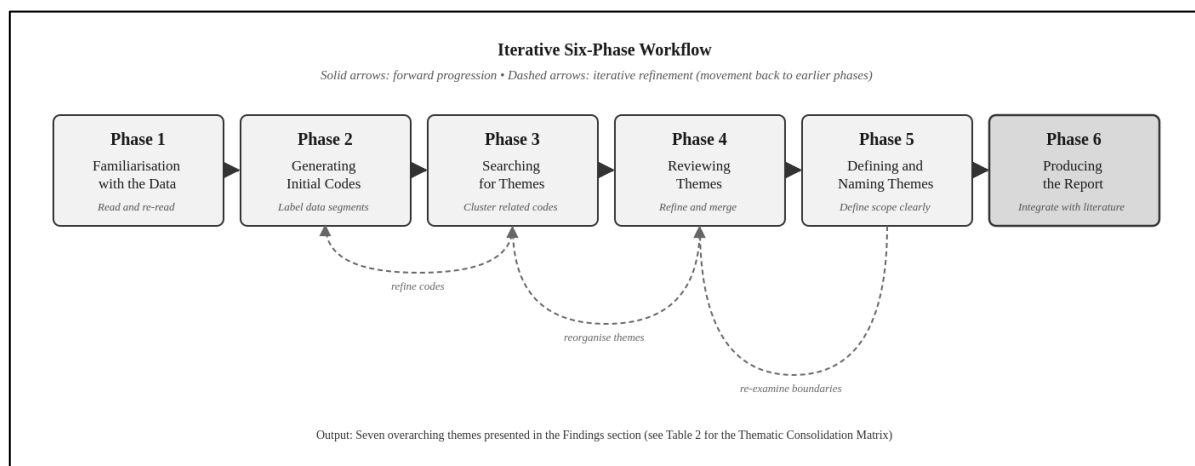


Figure 1: Iterative Six-Phase Workflow of Thematic Analysis Applied in This Study

The iterative analysis generated a total of seven main themes, as detailed below, which collectively summarised students’ experiences in the library internship; department operations and services exposure; acquisition of technical skills; development of user services and information literacy; participation in library outreach and publicity activities; gain of employability and life skills; professionalism and adjustment to workplace realities; and issues encountered in cataloguing and technical activities. The data analysis framework of these themes formed the basis of analysis of the reports and they are discussed in detail in Findings. This is appropriate as thematic analysis has become a common and recognized method for investigating stories of intern experiences (Fine et al. 2022, Rijnsoever 2017), especially for the understanding of professional development, learning curriculum, identity and development (e.g., in Fine et al. 2022, Rijnsoever 2017). Table 3 shows themes emerged from the analyzed data.

Credibility & Dependability

As per the criteria, trustworthiness was assured in three respects. Firstly, all the collected library internship reports were included in the analysis for the sake of avoiding any type of selection bias.

Secondly, consistency was checked by comparing reports from different internship sources with themes produced.

Lastly, the research process underwent peer-debriefing sessions with the researcher's academic supervisors to confirm the interpretations and analysis were appropriate.

Ethical Considerations

The library internship reports that were analysed are the formal reports submitted to UiTM and kept under wraps by the respective individuals. Any identifiable student name, the name of the internship organizations, and supervisors' names were removed.

This study complies with the educational research ethics principles which imply that data must be kept for scholarly and educational purposes only.

Findings

Analysis of the ten student industrial reports revealed seven broad themes that provide an overview of the breadth and depth of the students' learning and skill development, as well as the nature of their occupational identity, within their placements. Table 2 summarises the emergence of each theme, the meanings they convey and how much the theme is cross-case corroborated. The individual theme is then further explained, providing exemplar phrases from each student's report.

Table 2: Thematic Consolidation Matrix

Theme	Description	Evidence from Reports	Cross-case Confirmation
Exposure to Library Departments	Students rotated through multiple divisions (circulation, cataloguing, reference, serials, multimedia, acquisitions), gaining a holistic view of library functions.	Reports 1–10: All describe structured rotation across units, observing daily operations.	Universally confirmed; consistent in every report.
Technical and Digital Competencies	Mastery of KOHA ILS, MARC and DDC cataloguing, barcoding, spine labelling, database searching, OPAC navigation, and digital archiving.	Reports 1–10: Cataloguing and KOHA were repeatedly emphasised as core technical tasks.	Confirmed across all reports; cataloguing consistently highlighted as most challenging.

User Services and Reader Advisory	Hands-on experience in circulation, shelving, assisting users with OPAC, answering reference queries, and customer service.	Reports 1–10: All stress frontline service duties as the first point of contact with patrons.	Strong recurrence; central theme in every report.
Event and Outreach Participation	Students participated in library exhibitions, literacy campaigns, awareness programmes, and reading promotion activities.	Reports 3, 5, 7, 8, 9, 10: Described outreach roles such as reading campaigns, exhibitions, and book fairs.	Confirmed in most reports; shows library's evolving community engagement role.
Employability and Soft Skills	Growth in communication, teamwork, problem-solving, adaptability, customer service confidence, and leadership.	Reports 2, 4, 6, 8, 9, 10: Explicitly discussed communication and teamwork; some noted problem-solving and adaptability.	Recurring theme; noted as a major benefit of training.
Professionalism and Workplace Discipline	Emphasis on punctuality, ethics, responsibility, time management, and respect for workplace culture.	Reports 1, 2, 4, 6, 9, 10: Stressed discipline and workplace behaviour as part of professional identity.	Consistent across majority; professional conduct was a key reflection.
Challenges and Reflections	Main challenges: mastering cataloguing (MARC/DDC), learning KOHA, handling workloads, adapting to new environments. Students overcame these through supervisor guidance and peer support.	Reports 1, 3, 6, 8, 9, 10: Cataloguing cited as most difficult; workload and system errors also mentioned.	Strong recurrence; challenges were consistent but framed as learning opportunities.

Exposure to Library Departments and Operations

Each student invariably described performing formal rotation across several departments within the library. These divisions included Circulation, Cataloging, Reference, Serials, Acquisitions, and Multimedia Services. Such comprehensive engagement with each unit provided both hands-on training and an overview of how each library division functioned within an integrated ecosystem. Students frequently mentioned that their work within one department provided clarity and insight into activities in another; the experience of working with acquisitions, for example, provided awareness of the economic factors and selection decisions inherent in acquiring resources, whereas working in circulation demonstrated the

actual delivery of services and access to resources. One student shared, "Working from cataloging to circulation made me see that metadata is more than data entry, and that it does indeed effect the searchability of a book on the shelves."

This observation is supported by the scholarship on experiential learning in LIS, which states that placement within several library units allows students to witness how principles of bibliographic control and knowledge organization play out in authentic library contexts (Huggins, 2017). Internship literature further adds that structured exploration of varied workflows facilitates professional socialization and enables the preparation of students for a more flexible profession that requires cross-functional work (Sauder et al., 2019). Several students stated that the rotations boosted their confidence in performing new tasks, adapting to new environments and learning quickly new procedures, providing additional evidence for the necessity of this approach in LIS education.

Development of Technical and Digital Competencies

Technical and digital skills were identified by students as one of the most challenging and transformative areas of their internship. Consistently, students mentioned direct application and learning associated with KOHA (Integrated Library System), MARC21 (cataloging standards), and the Dewey Decimal Classification system. Cataloging, in particular, was identified by many as the most demanding task of the internship and as the area in which many gained their first professional experience. Students indicated the mental demands involved in accurately identifying, describing, and encoding MARC21 fields, and their precision in assigning Dewey Classification numbers, reinforcing the complex intellectual nature of this aspect of library work (Han et al., 2016; Guay, 2017).

Concurrently, students began to familiarize themselves with digital workflows such as creating metadata for digital archives and repositories and searching specialized databases. These are increasingly viewed as core skills in LIS and, as evidenced by student narratives, are often the subject of new, evolving librarianship paradigms (Freire et al., 2021; Harvey et al., 2015). Students often commented that technical and digital skills are complementary and interconnected, noting that the efficiency and accuracy of a digital workflow is contingent upon well-formed metadata, and effective searching skills support direct end-user access to information. These findings strongly support the notion that digital and technical expertise are indispensable skills in modern librarianship.

Enhancement of User Services and Information Literacy

User services and information literacy gained a strong theme in the students' narratives. Many students described spending significant time at circulation desks, assisting users with the OPAC, and fielding various reference questions. Through this daily contact, students became integral members of the library team by helping users to connect with library resources. An integral part of these interactions was the ability to communicate clearly, which students noted developed through instructing others during workshops and on how to utilize tools like citation management software. Duffus (2017) confirms this by emphasizing the value of internships in reference and instructional settings as providing opportunities for LIS students to gain pedagogical communication experience in a way that highlights the library's importance in support of academic success.

The interpersonal aspect of service was a key focus of many of the student narratives. Each student reported a greater understanding of the need for empathy and adaptability in serving diverse patrons of varying abilities and technical skills; for example, a student explained they needed to adapt the way they taught patrons to search the OPAC depending on whether they were helping first-year undergraduates or senior faculty. This transformation from a general awareness of user diversity to an in-depth, real-time ability to serve patrons reinforces the need for well-developed interpersonal skills (Bunnett et al., 2016). The position of being the initial point of contact allowed students to help patrons and provided practice in interacting with users on levels beyond informational needs, enabling them to strengthen interpersonal communication and hone user-centered professional skills.

Engagement in Outreach and Promotional Activities

Another overarching theme observed was student participation in various library-related outreach and promotion activities which served to enhance the internship beyond internal operations. Students described taking part in literacy campaigns, reading awareness events, book fairs, and displays/exhibitions at the library. These experiences contributed to a more holistic view of the library, which now operates in many ways as a community resource for citizens and the community (Simms & Johnson, 2019; Abdullah et al., 2015). The development of team skills, the application of creative skills, the implementation of management techniques, and the honing of public speaking and audience-interaction abilities were noted by students as crucial competencies needed for the development and implementation of outreach and promotion efforts (German & LeMire, 2018).

Dual learning outcomes resulted from these activities. On one hand, the students acquired practical, job-specific skills like project management and communications that have great transferability and appeal in the workforce. The students also noted that they gained a broader understanding of the advocating position of the library and the library profession in promoting information access and literacy.

Displays and book fairs, as two examples of library outreach efforts, helped to highlight the importance of libraries as resources.

Many students reported boosted confidence, perseverance and enhanced sense of professional self after organizing and managing events under time and resource constraints. Through such involvement, students learn to look beyond merely housing and organizing information and begin to embrace the librarians' roles in active community engagement.

Acquisition of Employability and Soft Skills

One recurring thread that appeared in almost all reports was the development of employability and soft skills. Students frequently highlighted how the training gave them opportunities to improve their communication, teamwork, flexibility and resilience, competencies that are increasingly identified as crucial for employability in librarianship (Yesmin, 2024; Alam & Yesmin, 2024). In contrast to a technical or routine task which would normally have a defined workflow, soft skills were developed through dealing with various situations where students interacted with colleagues, navigated different ways of getting tasks done, and had to respond to the ever-changing workplace conditions.

Time management was a very popular competency; several reports suggested that managing one's time was closely related to the juggling act of managing all departmental tasks along with documenting everything properly.

Teamwork and collaboration were highlighted across numerous reports with students mentioning how they had to compromise, discuss and coordinate in order to complete tasks together in circulation or for events (Lee & Ahn, 2021; Stapleton, 2018). Flexibility and adaptability also featured highly particularly when dealing with people senior to them. Many reports mentioned initial hesitancy to approach supervisors, but students said that they got to learn how to adjust their speaking style and approach to match the workplace norms. Adjusting to and embracing critique was equally important, and students typically described it as constructive and positive, rather than negative and critical (Stapleton, 2018).

Perhaps most significantly many students discussed the shift from seeing their task as a "student assignment" where they just had to "complete their assigned task," to developing a sense that they are "contributing meaningfully to workplace outcomes."

This captures a developmental trajectory for their professional identity, where they are beginning to understand themselves as a more developed individual embedded in the profession, rather than simply a student completing work for assessment purposes (Ribeiro et al., 2016; Popov, 2020).

Professionalism and Workplace Adaptability

Another prevalent theme in the reports was professionalism and workplace adaptability. Professionalism, as opposed to technical or user service, was described as an 'invisibility skills' that interns learned.

This included professionalism at an individual level, such as punctuality, dressing appropriately for work, and respectful behaviour towards staff and workplace culture, and professionalism from a systems-perspective where interns gained ethical awareness about information, its management, and access. Students were constantly interacting with and navigating the internal systems of the library (Bird et al., 2015; Barretto et al., 2017). This type of professional competence can be considered part of the internship as a space where the student's behavior has to adapt to the professional norm and the internal culture of the organization.

A particularly interesting part was interacting with senior members of staff. Students noted initial apprehension communicating with librarians or higher-ups in terms of seeking help, offering ideas or clarifying. With time students observed the professional approach, adapted it to their style and grew comfortable communicating in such a manner. What also appeared important was how students were guided when they made mistakes. Students said that they were not just being chastised but guided on what to do next in terms of correcting their errors, for example mis-entering MARC fields. Being taught how to re-enter the correct data and the logic behind it helps in turning a mistake into an educational experience, allowing students to correct the data and also learn to identify these types of errors in the future (Bird et al., 2015). This confirms previous studies that have stressed the importance of constructive feedback in ensuring that errors lead to learning and adaptation within a workplace environment. The

industrial training program could therefore be considered a liminal zone between university and workplace; an 'industrial space' for 'on-the-job training'.

This transition means that a certain level of professionalism is required and that interns gradually adjust to the standards of the workplace.

Challenges in Cataloguing and Technical Tasks

All of the reports identified cataloguing and technical tasks as the most difficult parts of the traineeship. Students faced difficulties when applying cataloguing rules such as AACR2 and RDA, understanding and allocating the correct MARC fields, and encountering problems with the Integrated Library System.

Technical and cataloguing tasks are different from routine activities in that they require prolonged, detailed attention to detail and an acceptance of the ambiguities involved.

The impact of small errors made by student cataloguers in relation to assigning subject headings or indexing a record may lead to large implications in information retrieval. It is not necessarily the failure or difficulty, but more about the “productive struggles” where students developed a higher attention to details (Yesmin, 2024; Selamat et al., 2023). The struggles that these students experience may bring their appreciation of a cataloguing or technical task that can initially be considered purely procedural. These tasks require a “critical literacy of classifying knowledge and cataloguing information” which forms the knowledge backbone of the system (Ribeiro et al., 2016; Barlow & O’Rielly, 2023).

Furthermore, students were confronted with cataloguing systems and standards which although might seem legacy for example MARC, the system has transformed and has changed.

With a move to the Linked Data and BIBFRAME in the future this is the landscape for information professionals today (Tinajero-Vazquez & Carr, 2024; Razak et al., 2024). Automated cataloguing software and metadata extraction tools may help with many tasks, but human judgment remains central in defining subject access points and ensuring data accuracy (Tinajero-Vazquez & Carr, 2024; Ramsgaard & Østergaard, 2018). Students pointed out the tension between machine-assisted processing and manual cataloguing.

Therefore, even when automated, the metadata needs to be checked, amended, or re-keyed, which could sometimes lead to frustration.

Discussion

The descriptive reports offer multiple lenses on the operation of industrial training as a formative element of LIS education. They illustrate not merely task execution within various library departments but also student perceptions of evolving selves as burgeoning professionals. A task-based practical experience in which students learned the nuts and bolts of the catalogue, operations in the integrated library system, and reference service support quickly transforms into an exercise in professional socialization through which they become more flexible, ethical, and tough workers.

The practicum functions, then, both as a looking glass in which students gauge the extent to which their education supports and expands their capacity for performance and as a crucible in which the combination of limitations, support, and difficulties fosters new insights.

A summary of this conceptualization of industrial training appears in Figure 2 below in which the seven descriptive themes fall under the two converging domains of the technical practicum and the process of professional socialisation. This conceptualisation uses cataloguing as the site of a productive struggle between these two components with the overall process resulting in professional identity formation.

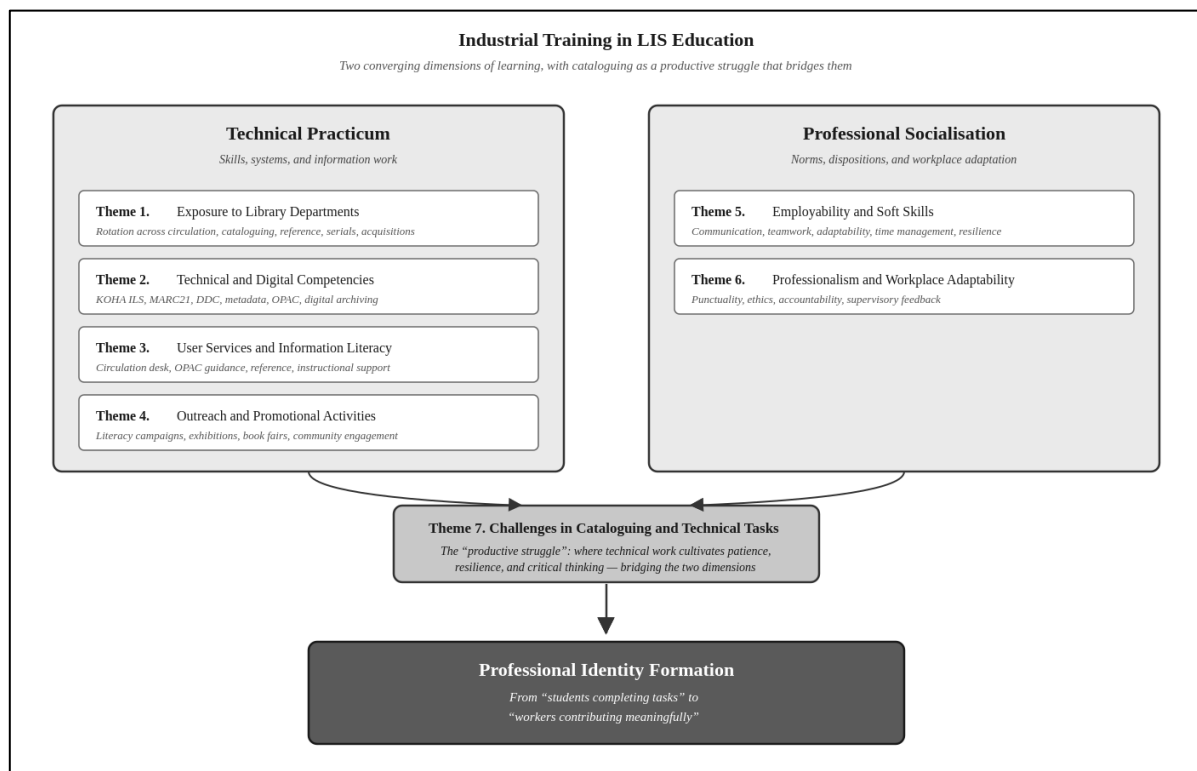


Figure 2: Conceptual Framework of Learning Outcomes from Industrial Training

Industrial Training as a Crucible for Professional Learning

Industrial training as a Crucible for Professional Learning Systematically rotates through each department (circulation, cataloguing, reference, acquisitions, digital resources), students became exposed to the holistic environment of the library. Abstract concepts taught in class like ‘bibliographic control’ and ‘information access suddenly became tangible reality. This confirms long-established arguments that LIS education should value experiential learning and must bridge the gap between academic knowledge and practical skills (Huggins, 2017; Sauder et al., 2019).

Internships were seen as more than a merely ancillary exercise but rather a structural requirement for developing a librarian who can reconcile technical, service-oriented and civic roles into a coherent professional practice.

The Dual Foundation of Technical and Soft Competencies

The most fundamental revelation of this experience was a two-pronged aspect of learning. First, students developed practical technical and digital literacy (cataloguing, metadata generation, KOHA ILS, databases, etc) skills which are vital to the library environment in the age of digital technology (Han et al., 2016; Freire et al., 2021). At the same time, the importance of employability and soft skills like communication, teamwork, resilience and flexibility are consistently stressed as equally essential. This is consistent with contemporary Employability framework which highlighted that technical knowledge per se is not enough unless complemented by social skills and personal qualities (Lee & Ahn, 2021; Stapleton, 2018).

The learning of these two are never separated, the ability to catalog is the prerequisite for communication with supervisors and library resources.

On the other hand, success of library outreach depended not only on effective communication skills, but also on familiarity with the resources of the library itself

The Pedagogical Value of Challenge and Struggle

The difficulties faced in cataloguing and metadata works were seen not as students' flaws but as learning opportunities. These "productive struggles" enabled students to re-evaluate the meaning and intent of standards like MARC21 and RDA, and at times forced them to learn patience.

Instead of being disheartened, students' self confidence in cataloguing was boosted when guidance was provided for their struggles as in practice-based approach learning experience. Constructive challenge was seen as catalyst for enhancing student's competency, confidence, perseverance and resilience (Selamat et al., 2023; Yesmin, 2024). Thus, in LIS curricula, cataloguing and metadata knowledge should not be viewed as technical remnants, but as important literacies essential for information skills and intellectual rigorousness, which could be applied to the diverse changing needs of the digital infrastructure.

Libraries as Civic and Educational Actors

From the reflections, it is clear that industrial training was not just about getting to know the practical side of librarianship but also about gaining insight into the civic role of libraries. For example, the student reports on various literacy campaigns, exhibitions and book fairs in libraries indicated how librarian profession is social in nature (Abdullah et al., 2015; German & LeMire, 2018; Simms & Johnson, 2019). The library was no longer just perceived as a custodian of information resources but as social-learning, civic-engagement and culture centers, with the librarian acting as facilitator, and advocating with and for library communities (Abdullah et al., 2015; German & LeMire, 2018). These community-engagement activities represent the "aha moments" where students began to see themselves as educators, leaders, advocates, rather than just library clerks.

Implications for LIS Curriculum and Supervision

First, students' rotational system through different sections must be retained as it provides them with a broader view and helps develop flexibility and adaptability.

Second, systematic report writing can be used to encourage critical self-reflections. In-depth discussions with supervisors will further assist in consolidating the students' learning experience and in forming their professional identities.

Third, cataloguing and metadata instruction within LIS curricula may need to evolve to be more scaffolded, hands-on, and incorporate modern approaches such as Linked Data and BIBFRAME alongside the development of relevant soft skills and personal qualities.

Last, internship supervision needs to be seen as a form of pedagogical mentorship, where instructors provide timely and insightful feedback that were reported to be a crucial factor for their learning experience.

Professional Identity Formation in Transition

Perhaps the most salient outcome is the sense of transformation from "a student who completes a given task" to "a workers who contributed something meaningfully" among these students. These finding parallels general theories of professional identity development that explain the role of the practice-based learning environments as liminal spaces that facilitate the adoption of new roles, norms, values and ways of thinking for noviciates (Bird et al., 2015; Popov, 2020). This study, like in other contexts, confirms that industrial training at UiTM has the capacity to nurture not just a skilled but also a thinking librarian.

Conclusion

Moving beyond the "To-Do" list Industrial training at UiTM, was undertaken in this study to critically evaluate its value as a crucial element in the professional and personal growth of library and information science (LIS) students. Analysis through thematic grouping of reflective internship reports suggests that the training process operates on different layers of engagement. Firstly, as a 'technical' practicum; an opportunity for the students to practice their acquired cataloguing, management of digital resources and user-related services in 'real life' situations. Secondly, as a 'soft skills' space; the practice environment that allows students to hone communication, team-working, and adaptability skills. Thirdly, as a 'transitional' space where professional identity is actively being formed and negotiated.

Overall, the training emphasizes the essential balance between technical know-how and a human-centred approach to information provision; ultimately preparing the students for the increasingly multifaceted role of librarians in today's complex information landscape. This study, admittedly, is not without limitations. The sole use of student's reflective reports provides insights from the perspective of the students alone and the evidence contained within is, therefore, subject to the vagaries of subjective reporting and selective recall, with the inevitable inclination to put their 'best foot forward'. Without triangularity through supervisor reports, patron satisfaction or other objective metrics, a broader generalizability of these findings is restricted.

It should be noted that the study was conducted within the context of one university and country and thus may not be entirely applicable in different LIS programs and cultural settings.

Further research is needed that will engage more directly with multiple stakeholders, such as librarians or other professional working in the libraries, and patrons in evaluating the industrial training. Longitudinal study design would be an asset in tracking graduates from the internships and how early experience continues to influence their career trajectories and resilience. It is also important to carry out comparative study that explore the industrial training experience and the influencing factors across various library institutions and country.

Focusing on innovative skills such as on-line cataloguing for shared databases and digital resource management could assist in better preparing students for technology-oriented practices and information resource management in future professional careers. Ultimately, the internship can be seen as more than a course requirement; but rather as a crucial bridge between theoretical knowledge and practical reality-a place where students start to see themselves not as mere doers of tasks, but as professionals, whose role is to actively shape, connect and empower with knowledge through their libraries.

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