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A Strategic Evaluation of Educational Continuity for Accessibility During Uncertainty in an Educational Practicum

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ABSTRACT

Students from economically disadvantaged nations (EDN) face significant challenges in accessing high-quality education and securing global internships due to inadequate resources, funding, and infrastructure. The COVID-19 pandemic has highlighted the potential of online platforms for providing accessible, remote education and internship opportunities, aligning with UNESCO's sustainability education objectives. Using the SWOT analysis tool within the context of the experiential learning-driven integrated reflective cycle model (IRC), the research compares onsite and online internship types in higher education to identify areas where interventions can be applied to enhance the online internship experience. The study analyzed 42 interns, both on-site (OSIs) and online (ONIs), to evaluate the constructs of 'experience,' 'action,' 'preparation,' and 'theory". The findings suggest that OSIs have weaknesses such as poor goal planning, a lack of awareness of relevance, and low communication confidence, while ONIs include a lack of exposure to teamwork and in-person experiences.

KEYWORDS

Constructs, Curriculum Alignment, Experience, Internship, Preparation, Professionalism, Reflection, SWOT, UNESCO Goal 4

1. INTRODUCTION

Uncertain times require collaborative responses to the challenges that arise. In this respect, the COVID-19 pandemic opened promising avenues for online teaching that involve a completely new outlook for educators and learners (Lapitan et al., 2021; Nasri et al., 2020; Aaradhi & Chakraborty, 2023). The unexpected paradigm shift that took place in the educational sector brought changes in the delivery mode through a shift toward new dynamic digital solutions (Maqsood et al., 2021; Lampadan et al., 2023; Teng et al., 2021). However, little is known regarding the impact of this shift

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on internships (Teng et al., 2021). Educational policymakers, who face uncertainty regarding the optimal solutions for students, have strived to integrate such solutions uniformly into the pedagogical space and maintain educational continuity. A survey of attitudes about online instruction indicated that teachers and students were encountering similar challenges associated with the absence of face-to-face interaction in online instruction (Huang, 2020). The assessment of the specific strengths and weaknesses of purely practical courses in a vocational environment is, accordingly, a critical area for pedagogical research. Although public institutions in developing countries may leverage online internships (ONIs) to achieve policy objectives, challenges remain regarding this approach (Chand & Deshmukh, 2019; Dash et al., 2022). According to the World Bank, vocational education and training in developing countries are seriously flawed; they are being left to individuals, enterprises, and private-sector training institutions while government interventions are kept to a minimum (Bennell & Segerstrom, 1998). Hence, students in developing countries are rarely exposed to practical interactions with international and multinational organizations (Assan & Nalutaaya, 2018). Although research has been conducted on on-site and online modes of education and training separately, the current literature includes no comparison of these modes in both practical and theoretical pedagogy regarding internships. To help fill this gap in the literature, we conducted a study involving 21 on-site and 21 online students (two-dimensional mode) enrolled in a university information systems undergraduate course. We chose the Integrated Reflective Cycle (IRC) model as the framework to analyze both online and on-site internships because its relevance in improving educational experiences has been demonstrated. Our aim was to evaluate differences and propose interventions to bridge the gap between these modes and help educators adopt strategies for universal access to education and training for all students.

The unprecedented shift toward online teaching during the COVID-19 pandemic has not only prompted a reevaluation of traditional education but also raised questions about its impact on internships. Policymakers are grappling with uncertainties as they strive to integrate online solutions seamlessly into pedagogical frameworks (Kidd & Murray, 2020). Kidd and Murray's (2020) study highlight the fact that public institutions in developing countries can leverage online internships for policy objectives, but challenges persist. The effectiveness of online learning is closely tied to technology, instructor attitudes, and various factors. Experiential learning (EL) through internships is crucial in education, and the study introduces the IRC, an approach that draws on various models to analyze the learning experience comprehensively. The practicum, serving as a real-world application of classroom learning, is explored in various disciplines, emphasizing the importance of internships in higher education. This study categorizes internships as a form of education practicum, which is defined as a temporary supervised work program providing students with subject-specific experience. Overall, the importance of investigating the impact of the online shift in internships is underscored along with its vital role in shaping educational experiences. We selected for study an internship program for students that encompassed both the application of theory and practice in an organizational setting. The interventions proposed in this study can be applied to enhance the pedagogical experience of both practical internships and vocational education.

Internships are integral components of most undergraduate and graduate public administration programs, providing students with both practical experience in a workplace setting before graduation and opportunities to apply the knowledge gained in the classroom to the real world (Wheeler & Waite, 2023). However, unexpected situations, such as the COVID-19 pandemic, and similar foreseeable events can complicate on-site internship experiences or make them impossible, especially in combination with the circumstances unique to students in remote locations. Although work-based learning experiences enhance educational value through the integration of theory and practice, the transition from an on-site internship (OSI) to an ONI mode necessitates careful reflection on the pedagogical merits of online and hybrid internships (Paviotti et al., 2023). Furthermore, the acquisition of knowledge and skills through the practical education that takes place in the context of internships varies between the two modes (Nicho et al., 2023). In this regard, because the adoption

of online internships has expanded to become an inevitable trend in vocational development, it has been accompanied by inherent challenges (Zhan, 2022). The development and continuation of virtual internships over the long term can be a useful strategy for expanding the range of current internship options and, perhaps, advancing diversity, equity, and inclusion in the fields of ecology and STEM generally (Hruska et al., 2022). Cumulatively, the adaptations and innovations in virtual technologies adopted during and after the pandemic have the potential to do the following:

- Improve the efficiency and effectiveness of pedagogical delivery.
- Broaden access to students.
- Facilitate interactions among physically distant (including international) participants.
- Enhance accessibility in remote areas and across geographically dispersed occupations.
- Widen the scope of the audience (Lester & Crawford-Lee, 2023).

1.1 Aim of the Research

The research we describe in this section helps to fill a gap in the literature regarding the impact of this shift from an on-site mode to a virtual mode in internships (Teng et al., 2021) through a comparison of these modes to clarify the differences between them and the challenges involved with each. An additional aim is to propose interventions that combine features of the two modes to provide for universal accessibility. We also propose viable interventions to address the challenges encountered in the ONI. Throughout this paper, the term "ONI mode" refers to the official online audio-visual platform adopted by the university for remote internships consistent with countrywide pandemic regulations. This term does not include technologies related to virtual reality. Furthermore, in this study, the terms "online" and "virtual" are used interchangeably.

We had three main research objectives for this qualitative exploratory comparative study:

O1: Evaluate OSIs and ONIs based on EL.
O2: Compare OSIs and ONIs with respect to their strengths, weaknesses, associated opportunities, and potential threats.
O3: Evaluate and suggest measures to address the weaknesses of and threats associated with the four IRC constructs for OSIs and ONIs.

1.2 Research Contributions

1.2.1 Practical Implications

During our research for this paper, we focused on the following practical implications:

- Making an impact on sustainable development goals: By investigating the contribution of internships to the achievement of Sustainable Development Goal 4, which emphasizes equitable and high-quality education, we help to realize UNESCO's vision (Bayena et al., 2022). The objective of this study is to enhance internship programs and contribute to UNESCO's Sustainable Development Goals.
- Identifying the strengths, weaknesses, opportunities, and threats (SWOT): Such an analysis of each internship mode is crucial (Safanov et al., 2021) to drive improvements and address limitations on internship experiences.
- Examining evolving pedagogical approaches: Given the challenges posed by global health crises and the uncertainties surrounding educational practicums, educational institutions and organizations must adapt their pedagogical approaches to ensure the continued effectiveness of internships in preparing students for the workforce (Guialamon, 2022). The aim of this study

is to shed light on the challenges and opportunities presented by both internship modes and, thereby, contribute to pedagogical development.

1.2.2 Theoretical Implications

During our research for this paper, we also focused on the following theoretical implications:

- Multiple disciplines: Researchers can use the findings to explore how each of these interventions can be applied across multiple disciplines.
- Research framework and extension possibilities: The IRC framework served as a theoretical lens for this study, which could be extended through replication using similar pedagogical models.
- Scaling: The approach we described in this paper can be expanded to include full-time vocational courses to observe the validation of the interventions.

In this paper, we discuss internship challenges and the background of EL from a reflective perspective with a focus on the theoretical model for evaluating internships. We also describe the methodological process and justify our choice of methodology. We then present the analysis, discuss the findings in relation to the research objectives, summarize the results, and suggest avenues for future research. We include a conclusion and acknowledge the limitations of the study.

2. LITERATURE REVIEW

The focus of the research is on three aspects of pedagogy: EL, reflective practice, and training. The research objectives involve comparison on the basis of a common theoretical framework that draws on similar conceptualizations and methods (Esser & Vliegenthart, 2017).

2.1 Challenges Faced by Internships

Although public institutions in developing nations can use on-site internships to accomplish their policy goals, certain problems with this strategy remain (Chand & Deshmukh, 2019). The World Bank has emphasized that governments do little to support vocational education; instead, they make individuals, organizations, and private training facilities responsible for it (Bennell & Segerstrom, 1998). Ogundu (2021) presented the challenges associated with internships in developing countries generally, and Nigeria particularly, including inadequate funding, equipment, manpower, and industrial training, as well as unfavourable employer attitudes. The absence of effective interventions by professional engineering organizations and international bodies, along with inappropriate government policies, further exacerbates these challenges. The underrepresentation or absence of specific industries in developing countries may complicate efforts to align internships with more comprehensive education policies, thereby limiting opportunities for the acquisition of relevant skills and experiences. The limited industrial presence in some developing nations and regions makes it difficult to offer diverse and meaningful internship opportunities and expose interns to a broad range of sectors and industries (Lester & Crawford-Lee, 2023). Structural dysfunction in local labor markets, a lack of demand for vocational skills by the private sector, and salary gaps between the public and private sectors make it difficult for developing nations to establish effective internship programs (Eichhorst et al., 2013). Problems such as inadequate funding and the lack of a strong incentive structure within training institutions further hamper the expansion of high-quality internship opportunities in these developing areas (Assan & Nalutaaya, 2018). In their study on the effect of educational policies on practicum experiences during the COVID-19 pandemic in Turkey, Taner et al. (2023) emphasized the detrimental effects of non-standardized policies on the experiences of pre-service teachers and teacher educators, as well as the necessity of professional flexibility and adaptive expertise in teacher education, though the focus on a single country may limit the applicability of their findings to other

educational systems and regions. Chakraborty and Biswas (2020) investigated the factors that impact teachers' involvement in research and development activities in higher education institutions; they found a positive relationship between high-quality research endeavours and improved teaching quality and determined that infrastructure and the working climate play critical roles in this regard, but, again, their findings may not be generalizable.

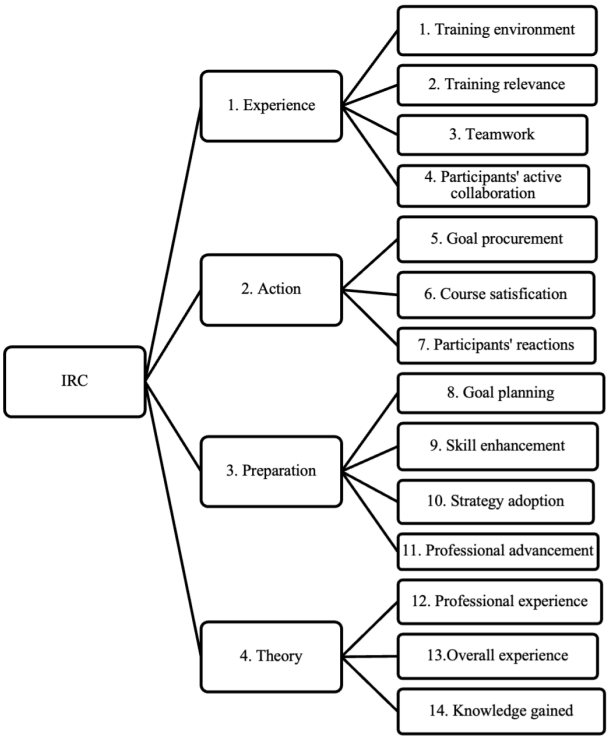
Volery and Lord (2000) explored the major influences on the efficacy of online learning, including technological advances and instructor-related factors, such as accessibility, user interface design, technical proficiency, teachers' attitudes, and classroom engagement, but they did not identify the SWOT with respect to ONIs and OSIs. Jeske and Axtell (2018) offered valuable perspectives on the characteristics and extent of the challenges involved but did not offer a thorough analysis of the short- and long-term impacts of virtual internships on professional development. According to Bawadi et al. (2023), the need remains for research that goes beyond identifying difficulties to ascertain and quantify methodically the influence of online and on-site internships on the overall professional development of those entering the workforce. The existing literature highlights serious flaws in the training systems in developing countries—in particular, weak institutional and policy environments, poor outcomes, disparities in access, and inadequate financing (Agrawal, 2013). It is in this way, by examining the effects of switching from on-site internships to virtual ones, that our research addresses a significant gap in the literature (Teng et al., 2021). The challenges that we discuss in this paper underscore the urgency of exploring alternative approaches, such as online internships, to increase the effectiveness of and address the geographical and economic disparities in vocational education.

The research problem lies in the limited availability of diverse and industry-relevant on-site internship opportunities in developing nations—a problem to which online internships represent a potential solution in terms of enhancing access to varied and meaningful learning experiences. In this study, as mentioned, we discuss valuable interventions to prepare students for the workforce in keeping with UNESCO's Sustainable Development Goals, particularly Goal 4, which emphasizes the provision of high-quality education to all regardless of location. Because the transition from an OSI mode to an ONI mode presents technological and pedagogical challenges, a comprehensive analysis of these modes is necessary to guide pedagogical improvements and innovations and ensure universal access to high-quality internships for all interns. The existing research focuses on individual modes of internship, with limited attention to comprehensive comparisons of OSIs and ONIs. We address this neglected issue with an in-depth SWOT analysis of both modes, systematically evaluating their respective strengths, weaknesses, opportunities, and threats. In light of this analysis, we propose targeted interventions.

2.2 EL Models for Reflection

The EL that occurs during internships can be a critical component of education (McCormick, 1993), so EL pedagogies, including internships and service-learning experiences, are becoming increasingly popular in higher education. One such approach, the IRC, draws on other models, including Gibbs's (1988) reflective cycle, with which it thus has some similarities. We chose the IRC framework for this research over other EL models because it is a holistic approach. Thus, it addresses the limitations of traditional frameworks identified by Eyler (2022) by providing a comprehensive evaluation of both OSIs and ONIs across multiple essential constructs. Because the IRC model consists of fewer stages than Gibbs's model, it may be easier to follow while delivering the same insights and knowledge (Allen & Wright, 2014). The IRC (Bassot, 2023) provides a simplified approach for making sense of and learning from an experience through the four constructs of experience, action, preparation, and theory. The four-stage learning cycle, which resembles Kolb's model, facilitates the making and understanding of observations. Figure 1 depicts the various constructs and themes in the IRC. The following discussion details each of the stages in turn. Hence, our evaluation of Gibbs's model, Kolb's model, and the IRC model indicates that the latter aligns best with the topic, the problem, and our objectives.

Figure 1. IRC constructs and themes



2.2.1 Experience

The first stage in Kolb's EL model concerns the concrete experience of learners encountering new situations or re-evaluating familiar ones (Kolb & Kolb, 2018). However, students may feel that online learning does not provide sufficient experience and efficiency in terms of mastering competencies in vocational training (Syauqi et al., 2020). This stage is part of the IRC, in which context it involves a detailed description of the experience, including the training environment, its relevance, the participants, and contributing factors (Kolb, 2014). Collaboration and teamwork are important components of the experience, for active participation and interdependence among the members of teams enhance the exchange of ideas and provision of support (Louis & Kruse, 1995).

The training environment, including the culture of the training organization, co-workers, career growth, and learning outcomes, also impacts interns' satisfaction with their experiences (Ahmad, 2020). When comparing OSIs and ONIs, we learned that determining the levels of "concrete experience," "collaboration," and "teamwork" provided in each mode is important.

2.2.2 Reflection on Action

In the second stage of Kolb's EL model, learners (in this case, interns) reflect on the "new experience" (practice) considering their "prior knowledge" (theoretical knowledge) in a process referred to as reflective observation. As Mauroux et al. (2014) discussed, the reflection on workplace experiences required as part of vocational education and training can be done either "in action" (i.e., during practice) or "on action" (i.e., after or before action). Discrepancies between experiences and the comprehension of them demand special consideration (Kolb & Kolb, 2009) for the proper alignment of "prior knowledge" with "new experience," which can differ between OSIs and ONIs. Similarly, the second step in the IRC, reflection on action, involves analyzing the experience to determine

what has worked well and what can be improved. The ultimate goal of incorporating internships into higher vocational education is to help students achieve their academic potential and improve their employment prospects and competitiveness after graduation (Wan et al., 2013). The purpose of goal procurement by interns is to facilitate their comprehension of the theories, concepts, and practices of their disciplines or majors through "hands-on" practical learning (Doniņa, 2015).

2.2.3 Preparation

Active experimentation, the third stage in Kolb's model, involves putting newly produced or modified concepts to the test. Thus, students apply the theories that they have learned to real-world settings and observe the outcomes (Kolb & Kolb, 2009). Similarly, the third stage of the IRC involves preparation, with students using their reflections to plan for future events (Steyn et al., 2004). However, few studies have explored specifically the impact of adopting strategies in this way on the success of internships. Through work in organizational settings, interns can increase their awareness of the importance of soft skills, such as effective communication, teamwork, and problem-solving (Maelah et al., 2014). Ryan and Cassidy (1996) suggested that internship programs require students to create a goal plan that outlines their learning objectives and methods for assessment and keep a self-reflective journal to promote critical thinking during the internship.

2.2.4 Theory

Abstract conceptualization, the fourth step in Kolb's model, occurs when reflection leads to the creation of a new idea or the revision of an existing abstract concept. However, the perceived lack of interaction in some e-learning offerings (Reynolds et al., 2014) may diminish the effectiveness of this conceptualization. In any case, it corresponds to the fourth step of the IRC, the theory phase, in which learners reflect on their experiences in relation to professional literature, classroom instruction, and their prior experiences, relying on both their insights and theoretical knowledge to make sense of their internships. The main outcomes of this stage are the knowledge and professional experience gained during the internship and the overall training experience (Bassot, 2023), which includes all their tasks, responsibilities, and social interactions.

The evaluation of the strengths and weaknesses of the internship program presented in this paper is based on a SWOT analysis (described in the following section), which serves to assess the perspectives of both the interns and the organizations regarding ONIs and OSIs and to identify the factors that make internship programs desirable for students. Previous researchers have used SWOT analyses to evaluate the impact of quality management on higher education institutions (Leiber et al., 2018). Likewise, a SWOT analysis of the knowledge assessment system has served to evaluate the effectiveness of online higher education during the COVID-19 pandemic (Safonov et al., 2021).

2.3 SWOT Analysis

As described by Steyn et al. (2004), reflection involves a thorough analysis of an experience by assessing the associated SWOT. Table 1 shows the mapping of the IRC constructs with previous research on these four components.

3. METHODOLOGY

Kolb's EL theory emphasizes the need for a qualitative approach to research because of the importance of incorporating experience into the theorization of learning (Galliers & Huang, 2012). Because qualitative research can enhance understanding in an area and provide various sorts of evidence and insights into a problem, it plays a central role in evidence-based practice and systematic reviews of effectiveness (Long & Godfrey, 2004) as a valuable tool for answering complex, real-world questions (Tetnowski, 2015).

Table 1. SWOT analyses in previous research on IRC constructs and themes

Constructs	Authors	Themes	S	W	O	T
Experience	Katz and Earl (2010)	Collaborative interactions during internships that promote the sharing of ideas and practices depend heavily on active participation.	✓		✓	
	O'Connor et al. (2016)	The most-cited causes of poor teamwork that need to be addressed during internships are inadequate leadership, lack of coordination, insufficient communication, and poor teamwork.		✓		
	Adebakin (2015)	Students' chances of finding academic and job success are significantly impacted by the relevance of their training, so they must understand how their internship training can improve their skills and prepare them for future careers.	✓			
	Ahmad (2020)	Students looking for internships are more satisfied with their experiences when they are in a well-equipped training environment with versatile and talented employees.			✓	
Reflection on Action	Cormier (2022)	Interns are occasionally overlooked by their supervisors or team leaders (participants' reaction), potentially leaving them unsure of their accomplishments and areas for development in their work.		✓		✓
	Seyitoğlu and Yirik (2015)	Interns' course satisfaction can be increased by offering a suitable learning environment, precise goal setting, appropriate communication, and constructive feedback.	✓			
	Doniņa (2015)	Goal achievement by interns includes the integration of theoretical knowledge with practical implementation, which results in real-world professional experience and interpersonal skills for interacting with individuals from diverse backgrounds.	✓			
Preparation	Kyndt et al. (2013)	Adopting a strategy after an internship assists students in choosing their future employment based on the knowledge and abilities acquired during the internship.	✓			
	Marshall (2012)	Internships are the best way for students to acquire work experience, improve their marketability, and strengthen their professional advancement and career-preparation skills.	✓			
	Weber et al. (2009)	Internships can enhance skills, especially in verbal and written communication, collaboration, and problem-solving.	✓			
	Ryan and Cassidy (1996)	Making a goal plan enables interns to assess whether their internships have satisfied their requirements and expectations and prepared them for future employment.	✓			
Theory	Ozerbas and Ucar (2014)	Through EL, an internship transitions students into using their academic knowledge gained in real-world situations.	✓			
	O'Neill (2010)	Internships enable students to apply their knowledge in real-world situations and, thus, acquire substantial professional experience and pursue the jobs that best suit their interests.	✓			
	Renganathan et al. (2012)	Overall, internships help students develop work readiness through experience, making them attractive prospects for employers after graduation and enhancing their technical and social abilities.	✓			

The aim of this study is to compare the ONI and OSI modes in higher education using a SWOT analysis based on the experiential learning-driven integrated reflective model. The students were evaluated using both summative and formative methods at the end of an 8-week internship program. We employed the inductive reasoning method to focus on predefined constructs as we moved from specific observations to generalizations.

The data collection included the final internship reports of undergraduate students (N = 41) from the College of Information Technology at a QS-ranked university in the Middle East (ranked between 601 and 700). Of the 42 interns, 21 had OSIs, and 21 had ONIs during the fall semester of 2021. The selection of the timing of the internships ensured continuity in the transition from ONIs to OSIs. The internship course spanned 8 weeks following the completion of the undergraduate program. Traditionally, this instruction is delivered at the organizational site under the supervision of an on-site supervisor, but, in coordination with the internship academic supervisor at the university, it was delivered virtually during the pandemic. Over the 8 weeks, in the on-site mode, the academic supervisor visits the interns personally on-site and meets with the internship supervisor in their presence. In the online mode, the tripartite meeting takes place through the university-approved online platform.

The final internship report, submitted at the end of the 8 weeks, includes seven mandatory sections: a title page, introduction, background information on the organization, the intern's experiences at the site, the impact of the internship on the intern, the challenges faced, a report on each of the 8 weeks, and a conclusion. The interns are also required to document and demonstrate the application of the theoretical concepts that they have learned during the course at the targeted organization. Validation occurs twice, first during a meeting conducted by the academic supervisor at the internship organization with the internship supervisor and the student and again when the student delivers a presentation at the university to the college's internship coordinator and the academic supervisor. The written report, oral presentation, and subsequent question-and-answer session provide ample opportunities for students to discuss the four constructs of the IRC—experience, reflection on action, preparation, and theory—from both on-site and online perspectives.

The research involved deductive content analysis (DCA), with predetermined codes derived from the conceptual framework serving to analyze the data (Vears & Gillam, 2022). DCA served to take into account prior knowledge or theory about the phenomena of interest, for existing theoretical frameworks can aid in identifying key concepts within the data (Davies et al., 2024). In this regard, we followed Krippendorff (1980) in including written documents in the content analysis.

4. DATA ANALYSIS

We uploaded the data collected from the final internship reports of the 42 interns and analyzed it using the qualitative data analysis software NVivo 12. The inductive nodes and sub-nodes served to identify and categorize the declarative statements in the interns' reports and thus identify 14 themes, as Figure 1 shows. We performed the categorization of nodes and sub-nodes following the recommendation of Miles and Huberman (1984) based on originality, word count, and frequency in the analysis of the qualitative data.

4.1 Measuring the Four IRC Constructs in OSI

Table 2 shows the extended coverage of the four themes under the constructs of experience, action, preparation, and theory. The latter had the most extensive coverage among these constructs because the theoretical knowledge gained in the classroom can provide a solid foundation for understanding the practical aspects of the internship training. The experience construct had the next most extensive coverage because a positive training environment and active collaboration among the participants can be a fundamental part of a supportive and productive learning environment for interns. The fact that the preparation construct had the least extensive coverage is not surprising because inadequate goal planning and strategizing can impede the successful completion of an internship.

Table 2. Extent of coverage of the themes in each construct based on the integrated Gibbs reflective cycle

	Experience					Action				Preparation					Theory			
	1. Training Environment	2. Training Relevance	3. Teamwork	4. Active Participants collaboration	Experience	5. Goal Procurement	6. Course satisfaction	7. Participants reaction	Action	8. Goal Planning	9. Skill Enhancement	10. Strategy adoption	11. Professional Advancement	Preparation	12. Professional Experience	13. Overall Experience	14. Knowledge gained	Theory
1: Report_01	5.92%	3.34%	8.61%	9.48%	27.35%	7.56%	3.73%	2.97%	14.26%	3.2%	1.29%	0.00%	0.86%	5.35%	19.4%	9.12%	22.52%	51.00%
2: Report_02	0.0%	1.52%	6.84%	3.94%	12.30%	9.1%	2.89%	3.3%	15.29%	1.74%	4.80%	0.00%	8.90%	15.44%	32.5%	0.0%	0.00%	32.50%
3: Report_03	0.00%	0.0%	5.96%	5.56%	11.52%	3.48%	2.54%	0.00%	6.02%	1.58%	8.9%	0.0%	1.98%	12.46%	7.34%	3.88%	14.68%	25.90%
4: Report_04	5.65%	7.04%	4.62%	4.62%	21.93%	5.78%	12.06%	2.84%	20.68%	1.96%	4.82%	0.0%	2.60%	9.37%	10.29%	1.57%	17.21%	29.07%
5: Report_05	4.56%	4.56%	0.0%	2.13%	11.25%	1.63%	3.13%	3.13%	7.89%	2.12%	6.9%	0.0%	8.95%	17.97%	5.93%	0.63%	3.74%	10.30%
6: Report_06	0.0%	0.0%	3.08%	3.08%	6.16%	0.91%	0.0%	0.00%	0.91%	1.14%	3.7%	2.45%	1.17%	8.46%	1.22%	1.09%	1.22%	3.53%
7: Report_07	0.0%	0.0%	3.29%	3.29%	6.58%	10.41%	5.91%	5.37%	21.69%	0.83%	4.19%	0.0%	4.19%	9.21%	10.88%	3.68%	24.82%	39.38%
8: Report_08	13.82%	15.0%	13.04%	13.04%	54.90%	15.26%	20.70%	2.88%	38.84%	1.26%	9.8%	0.0%	0.00%	11.06%	3.92%	0.0%	5.97%	9.89%
9: Report_09	7.78%	0.0%	12.32%	7.78%	27.88%	7.8%	10.13%	0.00%	17.93%	0.16%	2.9%	0.00%	7.70%	10.76%	15.89%	11.73%	19.09%	46.71%
10: Report_10	18.66%	15.59%	5.09%	8.16%	47.50%	6.51%	4.13%	6.51%	17.15%	0.05%	13.89%	0.00%	5.98%	19.92%	12.84%	0.0%	12.84%	25.68%
11: Report_11	0.0%	3.84%	8.19%	8.19%	20.22%	4.57%	8.89%	0.00%	13.46%	0.68%	4.90%	1.34%	0.00%	6.92%	6.05%	2.97%	6.05%	15.07%
12: Report_12	4.77%	3.53%	1.55%	1.55%	11.40%	7.99%	5.25%	0.0%	13.24%	0.94%	2.85%	0.00%	2.50%	6.29%	4.54%	4.54%	26.91%	35.99%
13: Report_13	4.59%	0.0%	11.12%	13.72%	29.43%	4.12%	8.45%	0.00%	12.57%	1.30%	7.9%	2.47%	2.6%	14.27%	10.86%	13.65%	17.13%	41.64%
14: Report_14	3.86%	3.86%	2.41%	2.41%	12.54%	11.0%	11.0%	0.0%	22.0%	5.62%	14.90%	0.0%	2.75%	23.27%	21.11%	14.24%	13.54%	48.89%
15: Report_15	3.94%	3.94%	12.49%	12.49%	32.86%	18.41%	12.48%	0.00%	30.89%	1.64%	3.98%	0.00%	7.34%	12.96%	5.64%	14.46%	15.63%	35.73%
16: Report_16	17.48%	0.0%	2.66%	15.01%	35.15%	22.59%	10.24%	0.00%	32.83%	4.7%	1.98%	0.0%	0.0%	6.68%	7.42%	13.52%	7.42%	28.36%
17: Report_17	6.62%	0.0%	0.00%	0.0%	6.62%	0.0%	14.14%	18.05%	32.19%	7.38%	12.87%	0.0%	8.9%	29.15%	6.02%	0.0%	0.00%	6.02%
18: Report_18	4.22%	9.42%	28.13%	28.13%	69.90%	0.0%	8.73%	4.52%	13.25%	0.85%	3.9%	2.3%	9.6%	16.65%	24.6%	0.0%	24.60%	49.20%
19: Report_19	7.81%	7.81%	12.13%	12.13%	39.88%	2.91%	20.66%	11.98%	35.55%	3.42%	4.5%	0.00%	9.84%	17.76%	11.34%	11.34%	13.05%	35.73%
20: Report_20	2.62%	2.62%	2.85%	2.85%	10.94%	2.69%	10.00%	1.66%	14.35%	0.0%	6.8%	0.0%	6.8%	13.60%	17.14%	11.53%	17.14%	45.81%
21: Report_21	29.09%	37.34%	22.13%	22.13%	110.69%	14.69%	14.69%	0.0%	29.38%	0.0%	9.8%	0.0%	8.9%	18.70%	49.06%	49.06%	49.06%	147.18%
Total	141.39%	119.41%	166.51%	179.69%	607.0%	157.41%	189.75%	63.21%	410.37%	40.56%	135.57%	8.56%	101.56%	286.25%	283.96%	167.01%	312.62%	763.58%
Total (out of 100)	23.29%	19.67%	27.43%	29.11%	100.0%	38.36%	46.24%	15.40%	100.00%	14.17%	47.36%	3.03%	35.48%	100.0%	37.19%	21.87%	40.94%	100.0%
Overall Total (out of 100)	6.84%	5.78%	8.05%	8.69%	100.0%	7.61%	9.18%	3.06%	100.00%	1.96%	6.56%	0.41%	4.91%	100.0%	13.74%	8.08%	15.12%	100.0%

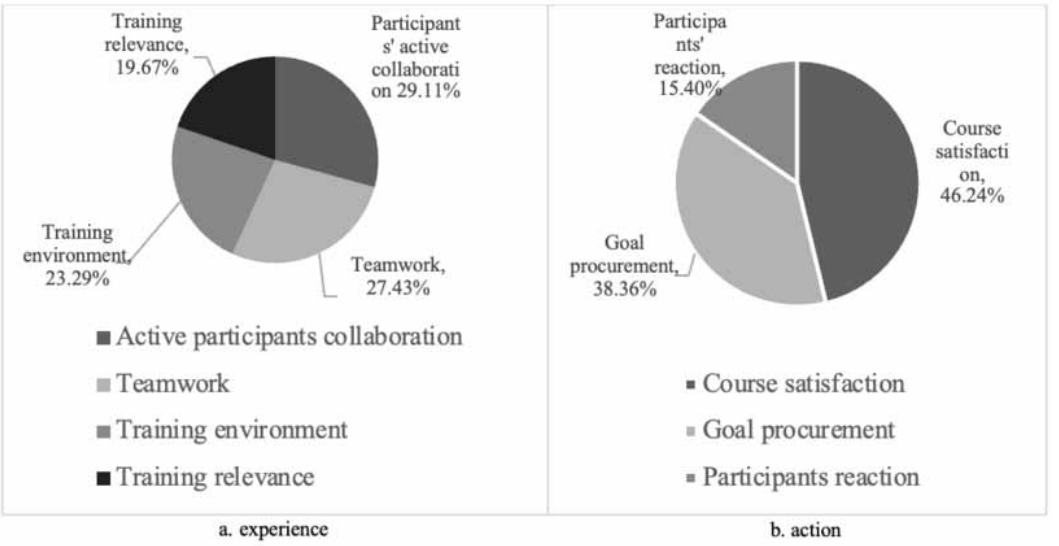
4.1.1 Experience

Of the four themes, participants' active collaboration received the highest coverage (29.11%). For example, student A stated, "I managed to learn to listen and value different background ideas and the opinions of a variety of people with different experiences because the people around me are from different cultures and language values, which made me learn and value people from different backgrounds." Next was teamwork, with 27.43% coverage, a theme about which student B commented: "One of the things that was very common when it comes to skills was to always work on tasks as a team and make sure to communicate well and help those who have inquiries regarding any issue to help and assist them in any task." Training environment was third, with 23.29% coverage. Regarding this theme, student C said, "I thought that the work environment was very difficult, but I had started working in the Ministry of Education, [and] my view has changed so much because of the people who work there." Training relevance had the lowest coverage (19.67%). Regarding this theme, student D stated, "The internship influenced me in terms of learning, analyzing, and conducting research on a variety of programs and applications that I had never worked with before as well as investing in things that would benefit the internship and incorporate and add to my major skills." Figure 2a shows the extent of the coverage of the themes under the experience construct.

4.1.2 Action

In the action construct (Table 2 and Figure 2b), the score for course satisfaction was high, with a coverage of 46.24%. Student E emphasized this aspect of the course, stating, "This was a wonderful experience in which I learned a lot, and I will learn more in the future, and I will avoid the mistakes that I was making so I am able to rely on myself and to work by myself." The score for goal procurement was the next highest, with a coverage of 38.36%. As student F observed, "I have realized my internship objectives that I set for myself in the beginning and worked towards completing these objectives, which led to a successful experience that made me learn a lot from the outcomes." The score for participants' reaction was low, with a coverage of only 15.40%. Regarding this theme, student G stated, "I tried to

Figure 2. Coverage of the themes associated with constructs for OSIs



open my heart and mind and told my supervisor about the things I was extremely fearful of actually occurring and my thoughts about any task, and she assured me support." The results demonstrate the practical aspects of the internship program. Figure 2b shows the coverage percentages of these three themes from an action perspective.

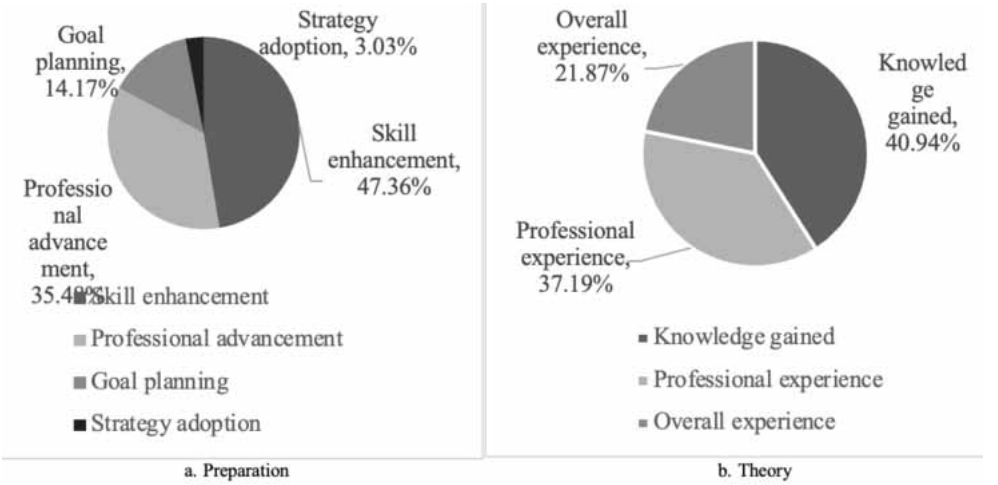
4.1.3 Preparation

Of the four themes, skill enhancement had the highest coverage, 47.36%. Regarding this theme, student H stated that the internship "enhanced my skills in the field of information technology and kept me aligned with the current tools and software used by developers and networking experts to get the job done." Next was professional advancement, with a coverage of 35.48%. Regarding this theme, student I stated, "As I progress, there's still a lot to learn and figure out by aligning the theory with the practical world through more understanding of process tools, but this [internship] gave me an overview and also the opportunity to call it a steppingstone to my future career." Third was goal planning, with a coverage of 14.17%, about which student J stated, "At the beginning of the journey, I had goals and learning objectives of my own, but, after meeting with my site supervisor, I not only changed some of my goals and objectives [but also] added relevant objectives and goals." The coverage of strategy adoption was only 3.03%. Regarding this theme, student K stated, "I sat down with my site supervisor, my manager, and the head of the IT department, and we created a work plan together that suited the goals we had in mind." The integration of theory and practice during internships thus facilitated the students' acquisition of technical and critical-thinking skills. Figure 3a shows the coverage of the four themes from the perspective of preparation.

4.1.4 Theory

The highest coverage for theory was knowledge gained, with 40.94%. Regarding this theme, student L stated, "Throughout the duration of this internship, I had the opportunity to work with various IT departments in the organization that added to my knowledge and understanding of the importance of my field." Next was professional experience, with 37.19% coverage. Student M made this comment about this theme: "This opportunity has helped me develop my skills as a professional, and I hope to carry my learning forward to help improve IT security in UAE industry and thus contribute to the UAE's

Figure 3. Coverage of the themes under constructs for OSIs



economy." The theme with the lowest coverage was overall experience, with 21.87%. Regarding this theme, student M stated, "Overall, I ironically enjoyed developing my communication and technology skills in the Ministry of Interior." The extensive knowledge and professional experience acquired in the technical field demonstrate the efficacy and viability of the internship program. Initiatives relating to the work culture, positive and negative experiences, critical-thinking abilities, and real-world scenarios reinforce theoretical knowledge. Figure 3b shows the percentage of the coverage for the three themes related to theory.

Figure 4 shows the overall coverage of the 14 themes under the four constructs in the IRC. As the chart indicates, the theory, experience, and action constructs most influenced the success of the internships. These results indicate that efforts to improve the quality and success rate of internship programs should direct attention to the preparation stage and that increased focus on goal planning and strategy adoption is necessary to expand learning and increase overall success. For interns to contribute effectively, organizations must invest significant time and effort in communication and training to ensure that the job goals and expectations are clear.

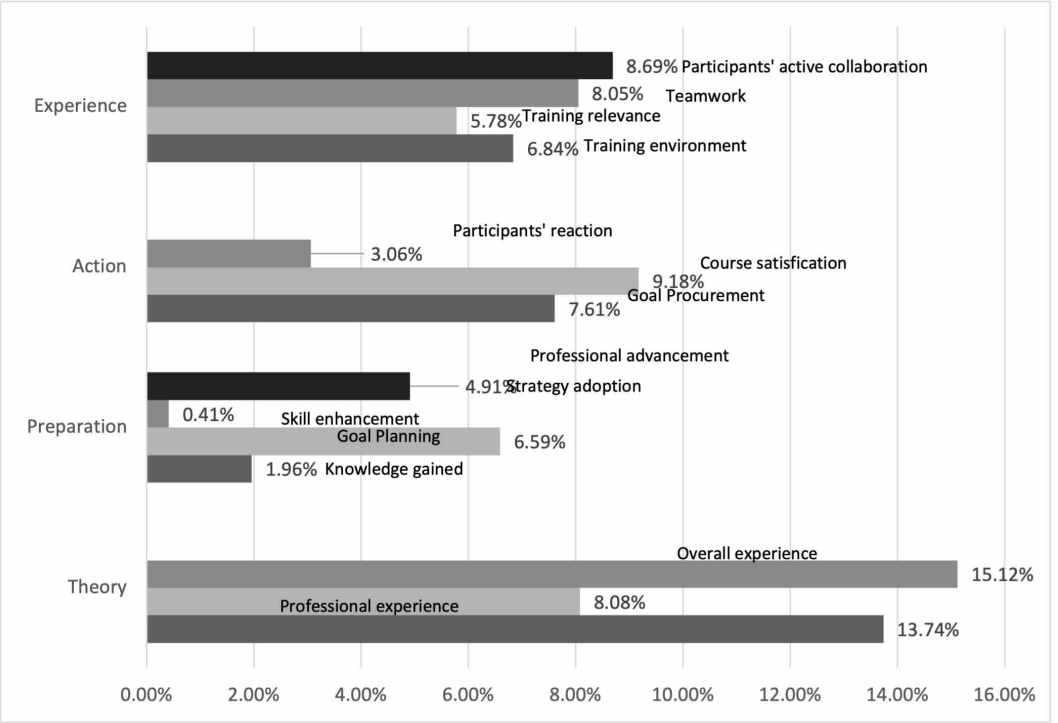
4.2 Measuring the Four IRC Constructs Relating to ONIs

Table 3 lists the themes covered under the constructs of, again, experience, action, preparation, and theory. The latter had the most extensive coverage because theoretical knowledge facilitates the comprehension of the practical aspects of internships. Experience followed closely in terms of coverage because a positive training environment integrated into the participants' active collaborative efforts can create a supportive and productive learning environment for interns, resulting in improved performance. Conversely, action had the least coverage owing to a lack of the theme practical experience, and the participants' reactions could significantly impact whether they completed an internship program successfully.

4.2.1 Experience

The theme participants' active collaboration had the highest coverage, 30.23%. Regarding this theme, student N stated, "I learned how to engage with new people fast and how to leave my shyness away and be professional." Next in terms of coverage was training environment, with 28.38%, about which student O made this comment: "From the internship program with ADNOC Offshore, I learned the real environment of IT and how it functions in a company and many things that are interesting about

Figure 4. Overall coverage of the 14 themes in IRC for OSIs



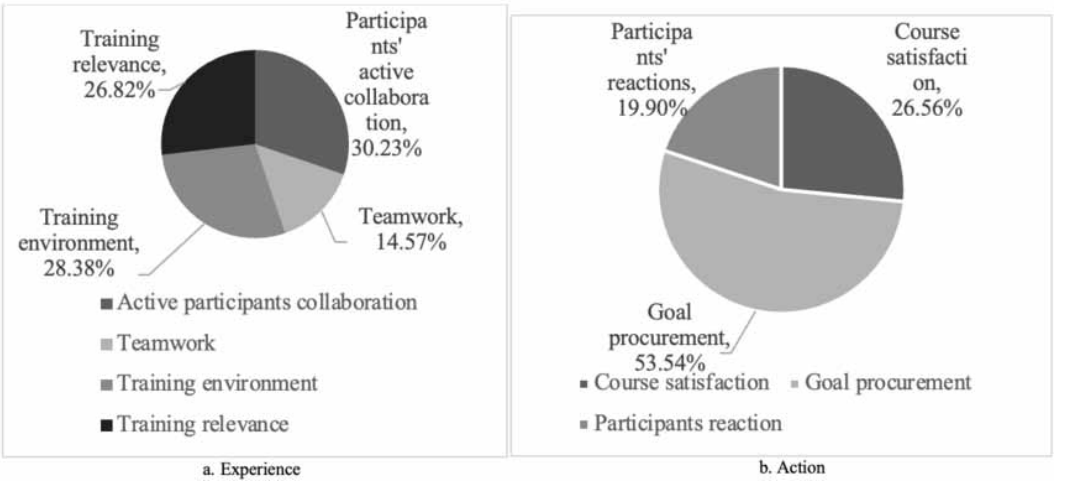
the daily routine working." The coverage of training relevance was 26.82% coverage. Regarding this theme, student P stated, "I was very excited to start my internship. I wanted to learn new [skills] where I can effectively utilize my expertise in computer security." Teamwork had the lowest coverage, 14.57%, and regarding this theme, student Q stated, "I improved my skill at teamwork. I learned how to be a

Table 3. Extent of coverage based on the integrated Gibbs reflective Cycle for ONIs

Coverage

	Experience					Action				Preparation					Theory			
	1. Training Environment	2. Training Relevance	3. Teamwork	4. Active Participants collaboration	Experience	5. Goal Procurement	6. Course satisfication	7. Participants reaction	Action	8. Goal Planning	9. Skill Enhancement	10. Strategy adoption	11. Professional Advancement	Preparation	12. Professional Experience	13. Overall Experience	14. Knowledge gained	Theory
1: Report_01	2.88%	3.68%	0.00%	0.0%	6.56%	2.88%	1.07%	3.8%	7.75%	0.0%	0.0%	0.00%	0.00%	0.00%	8.4%	6.11%	8.39%	22.89%
2: Report_02	5.72%	3.15%	1.60%	3.82%	14.29%	10.92%	8.31%	5.41%	24.64%	0.0%	0.00%	0.00%	0.00%	0.00%	3.79%	5.5%	1.18%	10.47%
3: Report_03	3.59%	2.2%	6.56%	12.52%	24.87%	3.45%	1.32%	0.00%	4.77%	5.37%	1.08%	0.0%	1.08%	7.53%	2.95%	2.2%	2.20%	7.35%
4: Report_04	0.00%	1.84%	0.0%	5.69%	7.53%	0.79%	2.0%	2.27%	5.06%	0.00%	1.66%	0.0%	1.66%	3.32%	10.29%	6.55%	7.67%	24.51%
5: Report_05	5.95%	2.47%	0.0%	0.0%	8.42%	4.69%	0.0%	1.35%	6.04%	0.00%	2.99%	0.0%	2.99%	5.98%	0.00%	6.56%	6.56%	13.12%
6: Report_06	3.55%	2.31%	0.0%	0.0%	5.86%	6.59%	3.17%	0.00%	9.76%	9.02%	15.01%	12.14%	2.69%	39.46%	0.00%	6.96%	9.81%	16.77%
7: Report_07	3.32%	0.0%	5.94%	5.94%	15.20%	0.0%	0.0%	0.0%	0.0%	2.01%	2.01%	0.0%	2.01%	6.03%	3.41%	8.37%	7.57%	19.35%
8: Report_08	1.50%	0.0%	3.41%	3.41%	8.32%	2.35%	1.88%	0.00%	4.23%	0.00%	0.0%	0.0%	3.41%	3.41%	4.58%	2.7%	2.70%	9.98%
9: Report_09	0.00%	1.87%	4.50%	3.18%	9.55%	5.08%	1.68%	3.11%	9.87%	1.88%	0.6%	2.13%	1.98%	6.59%	2.45%	3.87%	5.14%	11.46%
10: Report_10	3.05%	8.92%	0.00%	0.00%	11.97%	3.48%	0.92%	0.00%	4.4%	0.00%	4.11%	0.00%	0.00%	4.11%	0.00%	9.25%	9.62%	18.87%
11: Report_11	2.46%	0.00%	0.0%	0.0%	2.46%	3.99%	0.0%	0.00%	3.99%	0.0%	9.78%	0.0%	0.00%	9.78%	9.75%	24.27%	24.27%	58.29%
12: Report_12	0.0%	5.53%	2.28%	9.88%	17.69%	13.38%	0.0%	3.43%	16.81%	0.0%	0.0%	0.00%	0.00%	0.00%	0.0%	23.75%	23.75%	47.50%
13: Report_13	3.28%	0.0%	3.26%	6.52%	13.06%	4.06%	4.58%	4.63%	13.27%	1.33%	1.33%	1.33%	1.33%	5.32%	0.0%	3.28%	3.28%	6.56%
14: Report_14	3.36%	12.25%	0.00%	1.77%	17.38%	2.52%	0.0%	0.0%	2.52%	2.55%	2.55%	2.55%	12.4%	20.05%	9.84%	12.57%	12.57%	34.98%
15: Report_15	3.94%	9.13%	0.00%	0.0%	13.07%	2.65%	2.65%	0.00%	5.3%	0.0%	0.00%	0.00%	2.65%	2.65%	5.98%	14.87%	14.87%	35.72%
16: Report_16	2.85%	2.5%	0.00%	1.6%	6.95%	4.26%	4.26%	1.60%	10.12%	4.26%	4.26%	4.26%	4.26%	17.04%	8.77%	31.02%	31.02%	70.81%
17: Report_17	1.0%	0.0%	2.74%	2.74%	6.48%	2.68%	2.68%	0.0%	5.36%	1.16%	0.0%	0.0%	1.16%	2.32%	10.71%	10.71%	10.71%	32.13%
18: Report_18	18.24%	10.28%	5.64%	10.72%	44.88%	10.28%	0.0%	5.64%	15.92%	4.74%	4.31%	4.74%	4.31%	18.10%	11.34%	37.54%	37.54%	86.42%
19: Report_19	5.29%	0.0%	0.00%	1.43%	6.72%	0.0%	3.84%	0.0%	3.84%	0.0%	3.84%	3.84%	5.76%	13.44%	14.24%	18.85%	11.94%	45.03%
20: Report_20	0.0%	0.0%	0.00%	5.31%	5.31%	0.0%	3.33%	0.0%	3.33%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	38.91%	38.91%	77.82%
Total	69.98%	66.13%	35.93%	74.53%	246.57%	84.05%	41.69%	31.24%	156.98%	32.32%	54.13%	30.99%	47.69%	165.13%	106.49%	273.84%	269.7%	650.03%
Total (out of 100)	28.38%	26.82%	14.57%	30.23%	100.0%	53.54%	26.56%	19.90%	100.00%	19.57%	32.78%	18.77%	28.88%	100.0%	16.38%	42.13%	41.42%	100.0%
Overall Total (out of 100)	5.74%	5.43%	2.95%	6.12%	100.0%	6.9%	3.42%	2.56%	100.00%	2.65%	4.44%	2.54%	3.91%	100.0%	8.74%	22.47%	22.13%	100.0%

Figure 5. Coverage of themes in constructs for ONIs



responsible person and how to care about my teammates." This response highlights the importance of active collaboration among the participants in internships for motivating them. Figure 5a shows the percentage of coverage of the four themes from the perspective of experience.

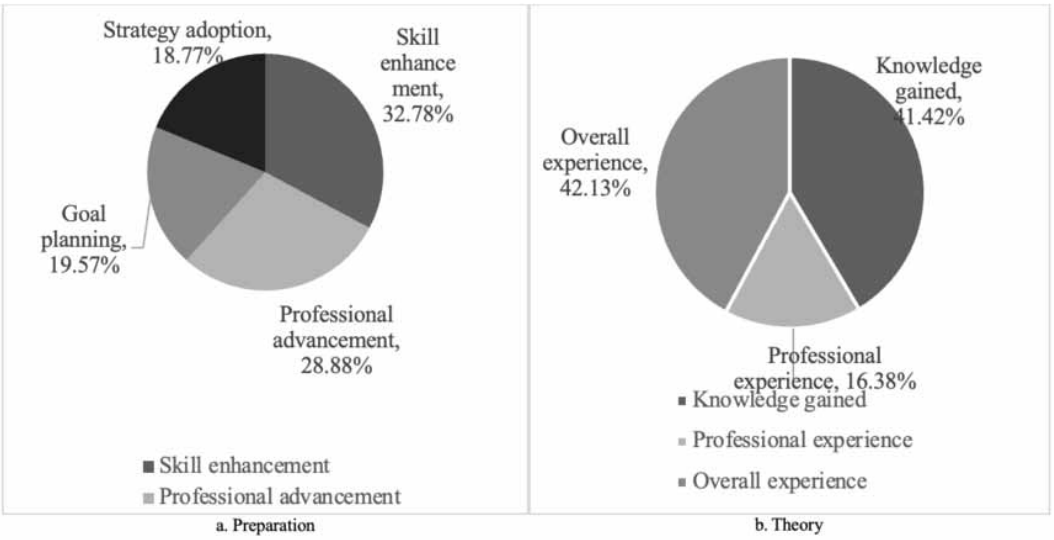
4.2.2 Action

The theme of goal procurement under the action construct had a coverage of 53.54%. Regarding this theme, student R stated, "I was able to fulfil the duties that were assigned to me, and, anytime I had a problem, the manager and supervisor were always on hand to assist me in resolving the situation." The theme of course satisfaction had 26.56% coverage, and student S commented about this theme: "Overall, the internship was a positive experience since it helped me to develop new skills and gain greater confidence in my abilities." The theme of participants' reaction had 19.90% coverage. Regarding this theme, student T stated, "I spent a time full of information and gained experience with the coach. He understood me and helped me anytime I wanted help from him. He always communicated with me to provide instructions." This response is evidence of the practical application of technical skills to enhance knowledge. However, the inclusion of activities that involve real-world problem-solving is necessary to increase course satisfaction for the participants in ONIs. Figure 5b shows the coverage of the three themes from the action perspective.

4.2.3 Preparation

The theme of skill enhancement had the highest coverage, 32.78%, and student Q emphasized the benefits of this theme: "I lent the organization my skills and, in return, I was able to enhance my prowess as well as obtain new ones, such as cloud computing and communication skills." Next was professional advancement, with 28.88% coverage, about which student R made this comment: "My internship with Cyber Gate Defense was a lot of fun. I believe I have a suitable level of professional expertise." Regarding goal planning, which had 19.57% coverage, student S stated, "I had a goal before beginning this internship, which was to get more knowledge about my major and increase my practice level because the most important thing to learn is to practice." Regarding strategy adoption, which had 18.77% coverage, student T stated, "I learned that we need to search for something that we had no idea what it is and not just wait for the answer, and it's fine if we ask many questions to learn about something we don't know, [and] it is okay if we answer questions incorrectly and learn from them." This response indicates that although internships improve interns' technical and critical thinking

Figure 6. Coverage of themes associated with various constructs for ONIs



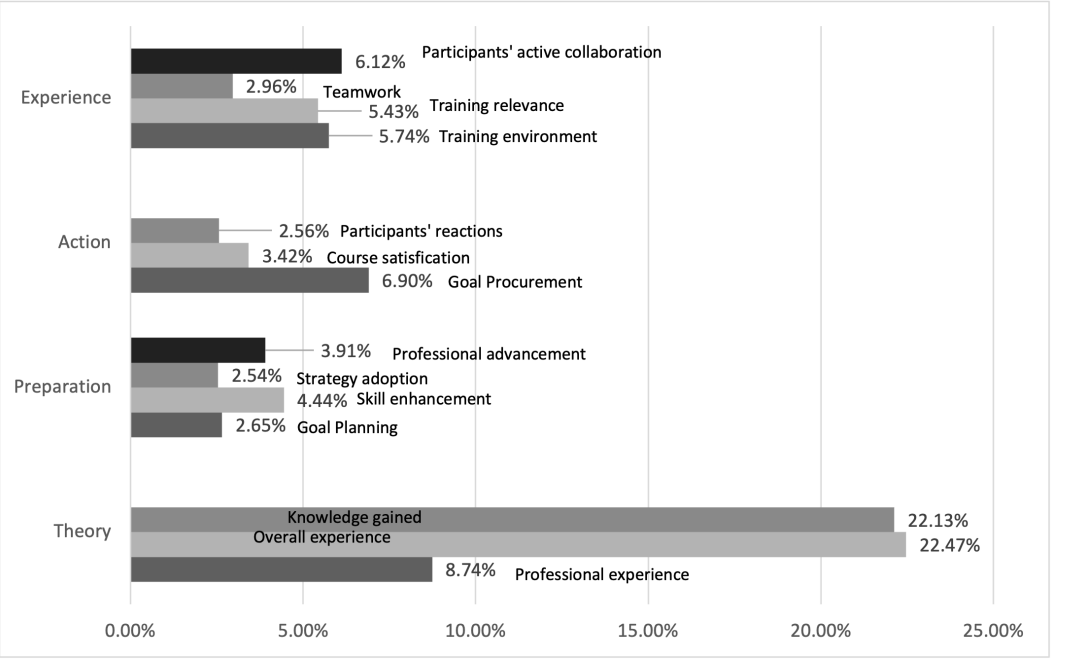
skills, again, a lack of goal planning and strategy adoption may limit their employment opportunities. Figure 6a shows the percentage of the coverage of the four themes from the preparation perspective.

4.2.4 Theory

The theme with the highest coverage was overall experience, with 42.13%, and student U commented on this theme: "I must say that all of the objectives, while in collaboration with people and the environment, were completed, as every subsequent session of the internship created the best experience in my professional life." Next was knowledge gained, with 41.42%. Regarding this theme, student V stated, "All these programs and systems that I learned during my training period will greatly assist me in developing my knowledge skills." The theme with the least coverage was professional experience, with only 16.38%, and student X commented on this theme: "It was a delight to be able to experience what it feels to be in a professional working environment with many highly skilled peers." The high coverage of online experience and knowledge gained overall is evidence of the effectiveness and viability of ONIs. However, the lack of real-world professional experience can limit the learning opportunities for these interns. Thus, OSIs may provide students with practical experience in the workplace that ONIs do not. Figure 6b shows the coverage of the three themes from the theory perspective.

Figure 7 shows the overall coverage of the 14 themes that the four IRC constructs comprise. The two major factors determining the success of an internship program were theory and experience. Devoting equal attention to the preparation and action stages enhances the quality and success rate of internships. A major challenge that organizations encounter in ensuring that internships are productive is the provision of adequate guidance, support, training, and feedback at every stage, the lack of which may negatively impact the success of ONI programs. Likewise, the lack of direct work experience in a professional setting may limit interns' opportunities to explore new industries, find suitable career opportunities, and determine the best work environment for them. Therefore, interns must set achievable goals and objectives throughout the training phase that enhance their development of skills and acquisition of professional work experience. An internship strategy that is based on work experience can also facilitate the identification of professional goals and future career decisions.

Figure 7. Overall coverage of 14 themes of IRC for ONIs



5. DISCUSSION

In addressing the main research objectives, we begin with an examination of the scope of the learning resources used in both OSIs and ONIs.

5.1 Evaluation of OSIs and ONIs Based on EL

Students who participate in OSIs gain knowledge and skills through exposure to hands-on activities in real-world practical environments. Those who participate in ONIs often receive less guidance, support, training, and feedback than those who participate in OSIs. Additionally, as just discussed, ONI programs may be unsuccessful because they do not offer access to real-world work environments, including teamwork and team-building opportunities. The lack of direct work experience in a professional setting may limit these interns' opportunities to, again, explore new industries, find suitable career options, and determine the best work environment.

Consistent with these considerations, the comparison of the 14 themes within the four constructs of the IRC clearly indicates that the participants in our study were more satisfied with OSIs than ONIs. Table 4 shows the values of the four constructs in the IRC in terms of the overall coverage for the two forms of internship. The largest reduction in terms of positive feedback was in the action construct, with a difference of -61.74, and the smallest difference was in the theory construct, with a difference of -14.87.

5.1.1 Experience

Further exploration of the three themes associated with experience reveals that the training environment increased the coverage in facilities with an OSI by 71.43% (from 69.96% to 141.39%) and training relevance increased the coverage by 53.28% (from 66.13% to 119.41%). On the other hand, as Figure 8 shows, the coverage of teamwork decreased substantially, by 129.58% (from 165.51% to 35.93%), and the coverage of participants' active collaboration for the ONIs decreased by 105.16% (from

Table 4. Comparison of OSIs and ONIs across four IRC constructs in terms of overall coverage

	On-site	Online	% Difference (reduction in %)
Experience	607	246.57	59.37
Action	410.37	156.98	61.74
Preparation	286.25	165.13	42.31
Theory	763.58	650.03	14.87

179.69% to 74.53%). These results suggest that the participants in the OSI programs scored teamwork and participants' active collaboration marginally higher and, thus, should be of interest to academic decision-makers seeking to increase the relevance of ONI programs and the participants' satisfaction with them in the context of policy and regulatory needs.

5.1.2 Action

As Figure 9 shows, we observed low satisfaction with all three themes—goal procurement, course satisfaction, and participants' reactions—regarding the action construct. Thus, goal procurement decreased by 73.36% (from 157.41% to 84.05%), and course satisfaction and participants' reaction decreased by 147.88% (from 189.57% to 41.69%) and 31.97% (from 63.21% to 31.24%), respectively. These results indicate that in the ONI programs, the lack of continuous feedback from the participants and the reduced participation in real-world problem-solving activities negatively impacted the success of the internships.

5.1.3 Preparation

Although strategy adoption received strong positive feedback for the ONIs, with an increase in coverage of 22.43% (from 8.56% to 30.99%), the coverage for skill enhancement decreased substantially, by 81.44% (from 135.57% to 54.13%). Similarly, the coverage of professional advancement decreased by 53.87% (from 101.56% to 47.69%), whereas that of goal planning increased marginally, by 8.24% (from 40.56% to 32.32%), as Figure 10 shows. The increasing trend for strategy adoption is explicable in terms of the need for the participants in ONIs to use remote working tools and technologies and to demonstrate time-management and planning skills. These results regarding the positive impact of

Figure 8. Comparison of overall coverage for ONI and OSI programs in terms of experience

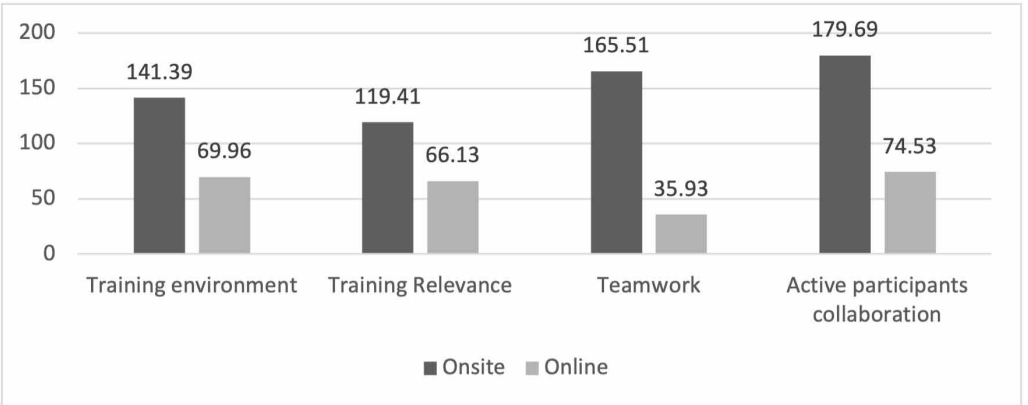


Figure 9. Comparison of coverage of ONIs and OSIs (Overall) in terms of action construct

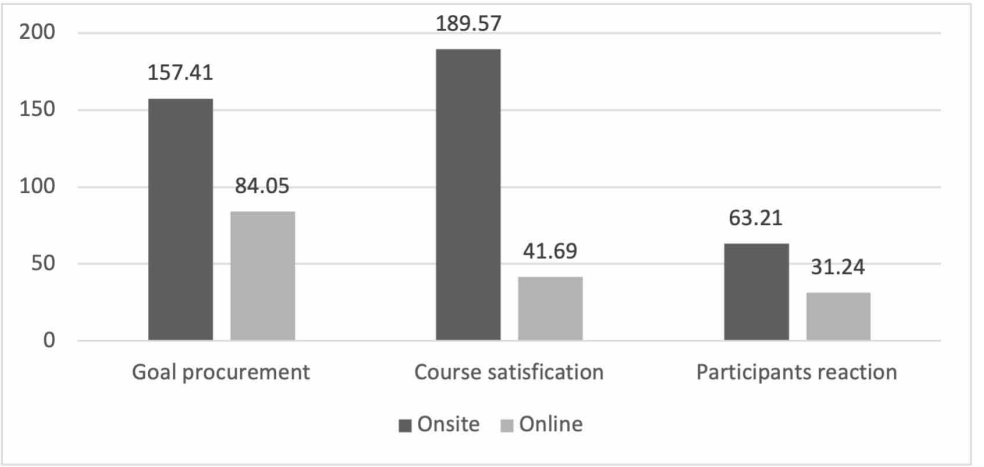
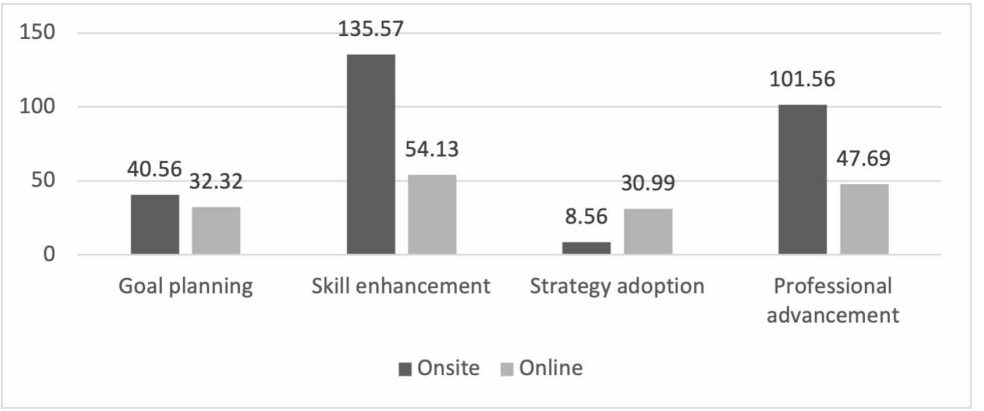


Figure 10. Comparison of coverage of ONIs and OSIs (Overall) in terms of preparation construct

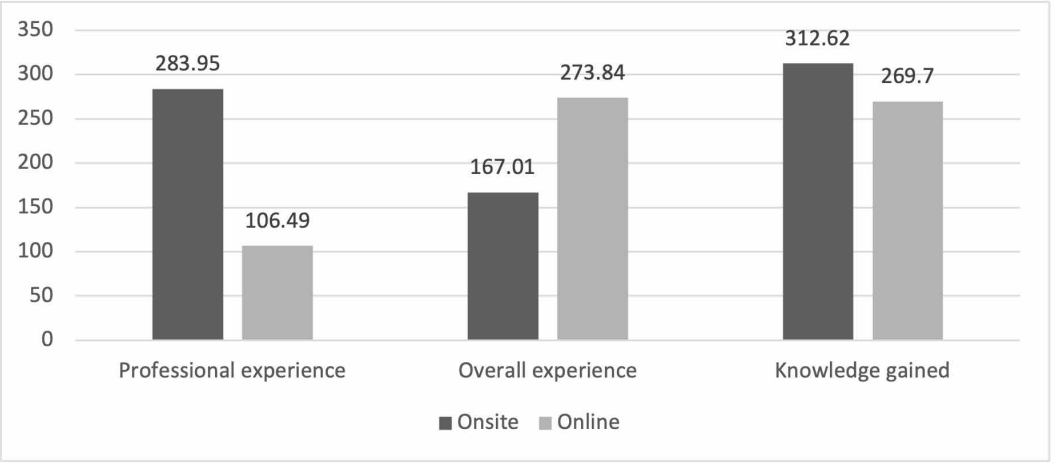


incorporating skill enhancement and professional advancement opportunities can inform efforts by academic decision-makers to increase the relevance of ONI programs.

5.1.4 Theory

Overall experience received more positive feedback for the ONIs, with an increase of 106.83% (from 167.01% to 273.84%), but professional experience decreased substantially, by 177.46% (from 283.95% to 106.49%). Furthermore, knowledge gained increased marginally, by 42.92% (from 312.62% to 269.70%), as Figure 11 shows. The more positive feedback for the online experience overall is attributable to the convenience and flexibility of the training schedule. ONI programs can benefit students greatly in terms of improving soft skills, such as organization, time management, and setting priorities. The less positive feedback for ONI programs regarding professional experience may be attributable to the lack of opportunities for hands-on work in a real-world environment. These results regarding skill enhancement and professional advancement opportunities can be valuable for academic decision-makers seeking to increase the relevance of ONI programs.

Figure 11. Comparison of coverage of ONI and OSI programs overall in terms of theory



5.2 Comparison of the Relative Strengths, Weaknesses, Opportunities, and Threats in Terms of the Four IRC Constructs of OSIs and ONIs (SWOT Analysis)

In this section, we discuss our SWOT analysis of the experiences of the participants in the OSIs and ONIs.

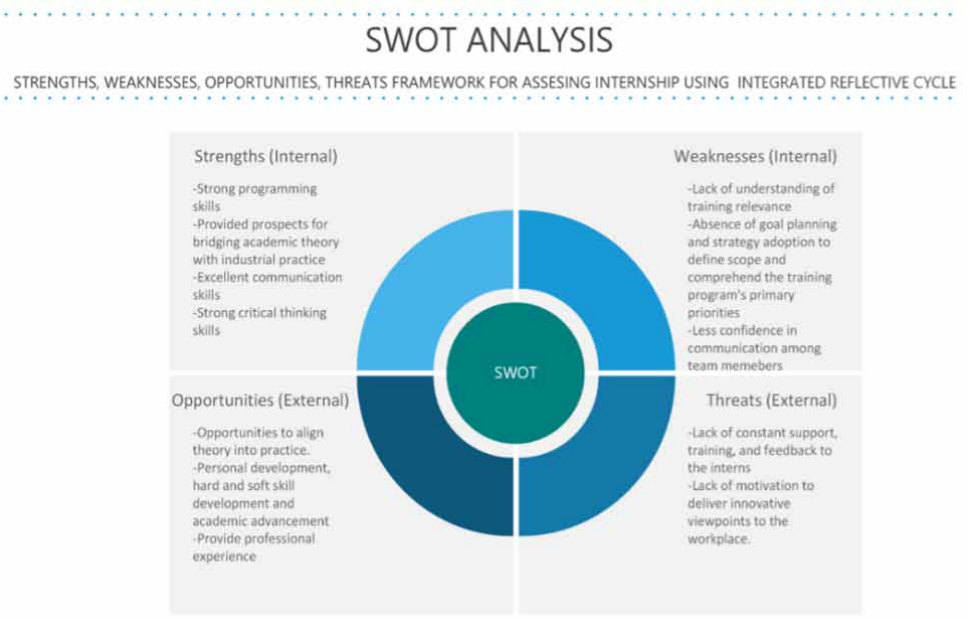
5.2.1 SWOT Analysis of OSIs Using IRC

Figure 12 shows our evaluation of the IRC constructs using the SWOT model based on the internship reports. This evaluation indicates that knowledge and professional experience are the core strengths of an internship, while the organizational perspective remains an area for improvement. The strengths of the preparation construct are skill enhancement and professional advancement, and the weaknesses are strategy adoption and goal planning. The strengths of the action perspective are course satisfaction and goal procurement, and the weakness is regular feedback. The strengths of the experience construct are teamwork and participants' active collaboration, and the threats are related to understanding training relevance from the intern's perspective and the training environment amenities offered by companies.

5.2.2 SWOT Analysis of ONIs Using IRC

ONI experiences can be evaluated in terms of the interns' strengths and weaknesses, as well as the opportunities and threats relating to the organizations that sponsor them using a SWOT analysis. In other words, these individuals' attitudes, experiences, and viewpoints can serve to explain both their strengths and their limitations. The students who complete an ONI benefit greatly from improved soft skills, such as organization, time management, and the capacity to set priorities, because they must keep track of their responsibilities and maintain focus. ONIs are also convenient, offering students flexibility regarding their training schedules because they can work remotely. Interns thus gain experience with remote working tools and technologies as well as time management and communication skills because they use a different set of abilities from those required in an actual office setting. A limitation for ONIs in terms of achieving the goals of internships is a lack of opportunities for teamwork. Other weaknesses related to the absence of hands-on experience in professional settings include the potential development of poor work habits, such as becoming distracted easily and lacking motivation. Although office-based internships provide opportunities to network with individuals in various professions, the lack of community networking that is characteristic of ONIs may hinder these interns' efforts to achieve their full potential.

Figure 12. SWOT framework for assessing OSIs using IRC



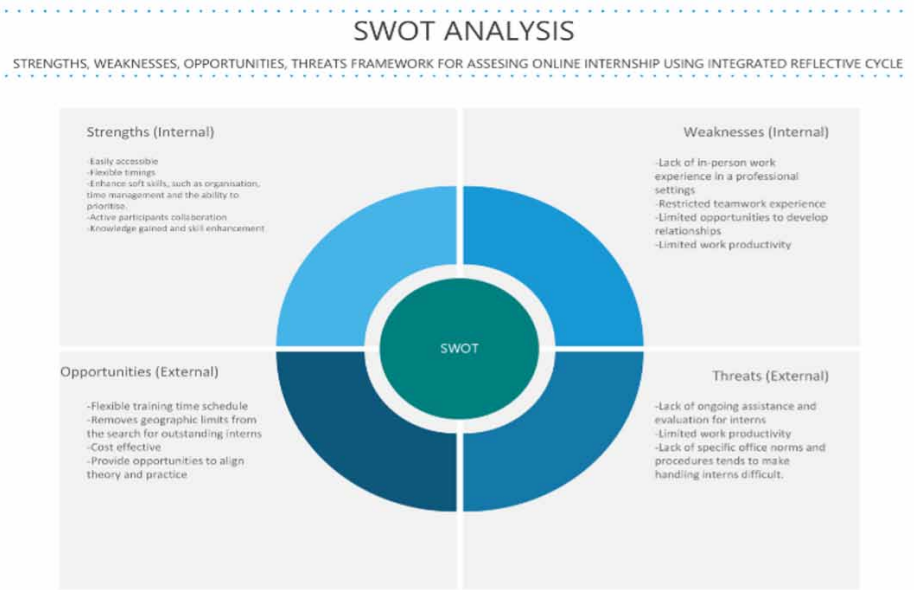
The opportunities for interns may be directly tied to the facilities and services that companies offer to raise the caliber of their internship programs. For ONIs, these facilities and services may include flexible training schedules, the absence of geographic restrictions on the selection of interns, cost-effectiveness, and the alignment of theory with practice. The threats in this context are limitations and obstacles on the organizational side that can impact the success of internships directly, and the weaknesses can include insufficient ongoing support for and evaluation of interns, low work productivity, the inability to establish a professional work environment, and a lack of defined office standards and procedures.

Figure 13 presents the SWOT analysis of an ONI using the IRC. The analysis of the theory construct reveals the primary strengths of the program to be the interns' knowledge and overall experiences. The main area for improvement, especially from an organizational standpoint, remains interns' lack of professional experience in real-world situations. The key benefits of these internships for the preparation construct are the enhancement of skills and professional advancement for the interns. The main weaknesses of internship programs, from the interns' perspective, pertain to the adoption of strategies and the attainment of goals. The main strengths of internships from the action perspective are the attainment of goals and satisfaction with the course, and the greatest threat to the success of internships is a lack of consistent input and guidance for the participants. The analysis of the experience construct indicates that the major strengths of internships are active collaboration, the interns' recognition of the relevance of the training, and the amenities provided by organizations in the training environment. Again, the lack of team building and teamwork during ONIs is the main threat to be addressed. Lastly, the success of the virtual internship experience depends on the effectiveness of the communication within the organizations that offer this type of internship program.

5.3 Evaluate and Suggest Measures for Addressing the Weaknesses and Threats in Terms of the Four IRC Constructs for OSIs and ONIs

Internship programs can be a powerful tool for achieving the 2030 Sustainable Development Goals (SDGs) adopted by the United Nations, in particular SDG 4, which relates to guaranteeing inclusive

Figure 13. SWOT framework for assessing ONIs using IRC



and equitable quality education and advancing opportunities for lifelong learning (Tsalis et al., 2020). The main target is a substantial increase by 2030 in the number of young people and adults who have the skills, including technical and vocational skills, needed for employment and entrepreneurship. Therefore, internship programs can be a useful tool for achieving the SDGs (especially SDG 4) in terms of fostering the development of sustainable technical and vocational skills and generally delivering high-quality education. Internship programs can help guarantee that when students graduate, they have the knowledge and abilities to contribute to a sustainable and equitable future.

Table 5 presents the results of our SWOT analysis of the OSI and ONI programs. OSIs offer strong programming skills, enhance collaboration, align theory with practice, and provide personal development and professional experience; however, they fall short in terms of constant support and feedback and understanding the relevance of the training. ONIs, on the other hand, offer flexibility in terms of scheduling, removing geographical limits to access, and enhancing soft skills, such as time management and prioritization, but may be limited in terms of teamwork experience, work productivity, and familiarizing interns with specific office norms and procedures. Our SWOT analysis identified several weaknesses and threats for both OSI and ONI programs that we address in the following discussion along with measures for responding to them.

5.4 Measures for Addressing Weaknesses and Threats Associated with OSIs

The drawbacks of on-site internships may include a lack of clear goals, insufficient feedback and support, weak communication, and the absence of fresh ideas. To address these drawbacks, companies can provide interns with detailed job descriptions and clear objectives emphasizing the link between their skills and their career aspirations. Internship programs should also provide frequent feedback and support through appraisals, mentoring, and training sessions. Companies can promote communication skills by offering training and mentorship opportunities and providing interns with access to relevant databases and online resources. Regular check-ins and assistance can also help interns feel supported and offer them incentives and recognition for innovative ideas, thereby motivating them to contribute more to the businesses that offer internship programs. Table 6 presents a summary of these findings.

Table 5. SWOT analysis comparing OSI and ONI programs

Strengths		Weaknesses		Opportunities		Threats	
On-site	**Online**	**On-site**	**Online**	**On-site**	**Online**	**On-site**	**Online**
1. Strong program-ming skills 2. Opportuni-ties to align academic theory with industrial practice 3. Excellent communic-ation skills 4. Strong critical-thinking skills	1. Easily accessible 2. Flexible scheduling 3. Enhance-ment of soft skills, such as organiza-tion, time manage-ment, and the ability to set priorities 4. Participants' active collabora-tion 5. Increased knowledge and enhancement of skills	1. Relevance of training not understood 2. Absence of goal planning and strategy adoption 3. Decreased confidence in communi-cation among teammates	1. Lack of in-person work experi-ence in a profes-sional setting 2. Limited team-work experi-ence 3. Limited work product-ivity	1. Opportun-ities to align academic theory with industrial practice 2. Personal develop-ment, develop-ment of hard and soft skills, and academic advance-ment 3. Profes-sional experience.	1. Flexible training time schedule. 2. No geo-graphic limits to access for interns 3. Cost-effective 4. Opportu-nities to align academic theory with industrial practice	1. Insuffi-cient organiz-ational support and feed-back for interns 2. Lack of motiva-tion to bring innova-tive perspec-tives into the work-place.	1. Insuffi-cient organiz-ational support and feed-back for interns 2. Difficult-ies mana-ging interns owing to lack of specific office norms and proce-dures

Table 6. Measures for addressing weaknesses and threats associated with OSIs

Weakness or Threat	Measures
Relevance of training not understood (weakness)	Ensure that the interns are aware of the precise abilities, knowledge, and experience that they should acquire during programs (Tracy & Lakeland, 2019) and reinforce the correlation between these skills and their desired future careers ("Like, to think," 2020).
Absence of goal planning and strategy adoption (weakness)	Provide the interns with training materials, market research reports, and best practices to establish their goals and strategies and enhance their knowledge and skills while deepening their understanding of their fields (Glynn & Silva, 2013; Karunaratne & Perera, 2019; Like, 2020).
Decreased confidence in communication among teammates (weakness)	Provide instruction and assistance for such communication techniques as active listening, constructive criticism, and resolving conflicts to increase interns' self-assurance and communication abilities (Bailey et al., 2017; Reding & O'Bryan, 2013).
Insufficient organizational support and feedback for interns (threat)	Hold frequent meetings with the interns to discuss their progress, offer feedback, and provide assistance, whether in person, by phone, or by videoconference (Fouche, 2018; Hendricks, 2023).
Lack of motivation to bring innovative perspectives into the workplace (threat)	Provide rewards to encourage interns to contribute fresh perspectives by, for instance, recognizing compelling concepts, commending inventiveness, and/or offering opportunities for interns to submit their concepts to top managers (Füller et al., 2012; Veltsos, 2017).

5.5 Measures for Addressing Weaknesses and Threats for ONIs

The weaknesses associated with ONIs may include a lack of on-site job experience, limited teamwork, difficulty remaining organized and focused, insufficient assistance and evaluation, and a lack of exposure to specific office norms and procedures. To overcome these weaknesses, businesses can conduct virtual activities and simulations, create social media and online communities, provide mentorship programs, bring in outside speakers to present their ideas, offer resources for stress management and work-life balance, clarify the instructions and expectations at the beginning of internships, and perform regular check-ins and/or evaluations for feedback and support. Table 7 presents a summary of these findings.

Table 7. Measures for addressing weaknesses and threats associated with ONIs

Weakness or Threat	Measures
Lack of in-person work experience in a professional setting (weakness)	Include virtual simulations and activities through which interns can enhance their abilities and gain experience in a simulated environment (Beckem & Watkins, 2012; Chesler et al., 2015).
Limited teamwork experience (weakness)	Connect interns with industry experts and organizations through social media and online communities (Peterson & Dover, 2014; Rothschild, 2011).
Limited work productivity (weakness)	Interns can remain organized and focused by developing a routine, so it is important to plan when they work on their projects, take breaks, and end their workdays (Long & Godfrey, 2004; Rothman & Sisman, 2016).
Lack of organizational assistance and evaluation for interns (threat)	Encourage and help interns to take the initiative, look for resources, and convey their needs to their supervisors (Bowen, 2020; Francabandera, 2014).
Difficulties managing interns owing to lack of specific office norms and procedures (threat)	Clarify the instructions and expectations for interns at the start of programs and provide an overview of the sponsoring company's culture, rules, and practices so that they can learn how to excel in their roles and what is expected of them (Bowen, 2020; Werner & Jeske, 2021).

5.6 Overall Discussion

By addressing the limitations of current evaluation frameworks for assessing the inadequacies of OSIs and ONIs, our study contributes substantially to the internship literature. As Eyler (2002) observed, traditional frameworks often fall short with regard to providing a comprehensive assessment owing to a narrow focus on specific aspects of the learning process. Rather than earlier models, our study uses the IRC framework to assess thoroughly the experiential learning outcomes of both OSIs and ONIs related to the constructs of experience, action, preparation, and theory. Building on the work of Volery and Lord (2000) and Jeske and Axtell (2018), we identify the key factors impacting online learning and offer a comprehensive analysis of the short- and long-term consequences of ONIs on career advancement. As Bawadi et al. (2023) noted, there has been a significant gap in the literature regarding the systematic measurement of the impact of ONIs and OSIs on the overall professional development of those entering the workforce. By evaluating the SWOT associated with the IRC framework in these respects, we provide a thorough examination of the advantages, disadvantages, possibilities, and risks that are specific to each type of internship. Our study also advances the understanding of the dynamics of ONIs and OSIs and identifies problems beyond those revealed by, for example, Teng et al. (2021) regarding the shortcomings of training programs in developing nations. Similarly, our analysis of the weaknesses of ONIs, especially limited teamwork experience and reduced work productivity, helps address some of the concerns raised by Volery and Lord (2000) regarding the impact of online learning on collaborative skills.

The practical implications of the findings pertain to efforts to increase the efficacy of internship programs and harmonize them with broader educational and developmental objectives. First and foremost, this study contributes directly to the realization of UNESCO's vision for global education by examining the role of internships in achieving its Sustainable Development Goal 4, which emphasizes equitable and high-quality education. Institutions can play a critical role in promoting inclusive education that equips students for the demands of the workforce by better understanding and enhancing the internship experience. The SWOT analysis of each internship mode can inform improvements in both ONI and OSI internships by providing practical insights

for educational institutions and stakeholders seeking to tailor internship programs to meet the needs of students and industry expectations. Implementing the suggested countermeasures, such as enhancing communication channels, providing comprehensive training, and establishing clear ethical guidelines, can enhance the quality of internship experiences and mitigate potential challenges. In addition, the emphasis on changing instructional strategies is especially pertinent in the context of global health concerns. Adapting pedagogical practices becomes critical as educational practicums encounter uncertainty. By leveraging the knowledge gathered in this study, educational institutions and instructors can overcome such challenges and guarantee the effectiveness of internships in preparing students for the workforce.

Future research can build on the insights from our 8-week internship study by expanding the scope to include multiple disciplines and full-time vocational courses. Additionally, the present study could be validated through replication using related models. The theoretical contribution of our study extends beyond analysis to our advocacy for the real-world implementation of interventions based on our findings. By bridging the gap between theory and reality, such applied approaches have the potential to determine the efficacy of interventions intended to enhance the quality of internship experiences. We further contribute to the theoretical framework for assessing experiential learning in vocational education by revealing the nuances involved in effective implementation and the impact of internships on learning analysis.

6. CONCLUSION

In this paper, we described our application of the IRC theoretical framework to assess the four constructs of experience, action, preparation, and theory for both OSIs (21 students) and ONIs (21 students). The findings identify the weaknesses of OSIs as interns' failure to understand the relevance of the training that they receive, the absence of goal planning and strategizing, and a lack of confidence when communicating with teammates. The threats include insufficient organizational support and feedback for interns and insufficient extrinsic motivation to bring innovative viewpoints into the workplace. The weaknesses of ONIs include the absence of in-person work experience in a professional setting, limited teamwork experience, and reduced work productivity. The threats include insufficient organizational assistance and difficulty managing interns owing to inadequate evaluation of them and the absence of clearly defined office norms and procedures.

Countermeasures that can be effective in dealing with these weaknesses and threats include opening lines of communication among students, supervisors, and educational institutions, in-depth training and orientation for students and supervisors, and routine evaluations to track progress and pinpoint problem areas. The establishment of detailed rules and regulations for ethical and professional conduct can also help avert discrimination, harassment, exploitation, and other potential dangers. For ONIs, measures are needed to guarantee access to the tools and resources necessary for assigned tasks, as well as protocols to sustain communication and ensure that the participants receive timely help and feedback. Such steps can improve the efficiency, benefits, and security of both OSIs and ONIs for all of the parties involved.

This study has several limitations that future research can address. First, the small sample size, 42 interns, could be expanded to allow for generalization of the findings. Second, the research setting could be extended beyond the Middle East for comparative evaluation. Third, we used one type of data, so the triangulation of data using feedback from site supervisors and other direct stakeholders could enhance the robustness of the findings. Lastly, because the efficacy of a SWOT analysis depends on the information included, which reflects, in turn, the perceptions and experiences of those conducting it, organizations that offer internships may question the accuracy of the information, thereby complicating efforts to obtain an impartial analysis.

CONFLICT OF INTEREST

We declare there are no competing interests.

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