American Academic Scientific Research Journal for Engineering, Technology, and Sciences
ISSN (Print) 2313-4410, ISSN (Online) 2313-4402
https://asrjetsjournal.org/index.php/American_Scientific_Journal/index

Knowledge Gain and Mindset Shift as Mediators in Transnational Education: A Structural Equation Modeling Study

Abubaker Kashada[a*], Abubaker Sasi[b], Osama Kashadah[c], Mohamed Ramadan[d]

[a]*Surman College for Science and Technology, Surman, Libya*
[b]*Az Zawiya College of Computer Technologies, Zawia, Libya*
[c,d]*faculty of economics, Zawia University, Zawia, Libya*
[a]*Email:kashada@scst.edu.ly*, [b]*Email:sasi@zcct.edu.ly*, [c]*Email:osama.kashadah@zu.edu.ly* ,
[d]*Email:m.ramadan@zu.edu.ly*

Abstract

The study investigates a ten-day technology enhanced learning camp that the British University in Egypt (BUE) hosted for forty Libyan students. Pre- and post-camp questionnaires assessed domain knowledge of robotics, first aid, and creative thinking; international higher education literacy; and academic self-efficacy, while qualitative data (from observations, focus groups, and reflective writing) contextualized the findings.The results showed statistically significant gains in all areas of interest. A structural equation model (SEM) was used to test whether perceived knowledge gain and shifts in academic mindset mediated the relationship between workshop quality and confidence in international academic planning, as indicated by global fit indices showing good model-data fit. For example, CFI = 0.96; TLI = 0.95; RMSEA = 0.06. The qualitative themes corroborate the quantitative trends, including the value of hands-on lab exposure, research-tool training, and structured navigation of admissions and scholarships. Researchers argue that short-format, technology enhanced learning (TEL-rich), trans-national programs can reduce information barriers, strengthen academic self-efficacy, and catalyze regional higher-education cooperation in post-conflict contexts. We conclude with the implementation guidance and a replicable framework for TEL-oriented internationalization initiatives in North Africa.

Keywords: Academic mindset; Internationalization; Self-efficacy; Structural equation modeling; Technology enhanced learning.

Received: 2/1/2026
Accepted: 4/1/2026
Published: 4/8/2026

---

* *Corresponding author.*

1. Introduction

This study describes the Open Science Week Camp (OSWC) which is a trans-national program designed to empower youth in open sciences. The OSWC was designed in response to shared regional challenges facing neighboring countries such as Libya and Egypt, including educational inequality and limited preparation for participation in a competitive global labor market. The education system of Libya has been destabilized due to prolonged conflict [1]. The OSWC can be used as a model regarding collaboration between institutions on a regional basis. The OSWC conducts socially relevant science that aligns with the vision of the host university. Furthermore, it stresses the importance of interacting with the society [2]. There is a project initiated by a collective group which aims at regional development through education by solving the socio-economic problems. The British University in Egypt hosted the 10-day OSWC, in cooperation with the Faculty of Energy and Environmental Engineering and Faculty of Continuing Education with exclusive sponsorship by Aljaied Foundation. This was an immersion into campus life at a modern university for forty Libyan secondary and technical students. It combined three elements: 1) academic learning with introductory classes in most faculties; 2) practical and instrumental training in several domains such as robotics and first aid; and 3) intercultural dialogue within Egypt's international environment. Specific laboratory sessions and tours within faculties were put in place to provide empirical insight into international study pathways and admission procedures.

The Faculty of Energy and Environmental Engineering delivered a presentation covering its vision, mission, organization, and programs of study, followed by a continuation of the visit to work zones, notably Bio Energy, Energy Conversion, and Energy Management. Similarly, the Communication and Media Faculty provided a welcoming educational engagement, and a service was also offered by the Nursing Faculty. The visiting group also attended a general service at the Language and Culture Department of Humanities. The Engineering Faculty provided a tour at the Robotics Technology Engineering Laboratory; the tour provided information on the ability of engineering graduates based on mastering technology and basic engineering science for the industrial world.

Workshops on Critical Thinking and Creativity were provided, in addition to the National First Aid and Basic Life Support Training Certificate. The research body workshop introduced a range of research tools and data organization. Information literacy training for Faculty members was available to the BUE Community. Faculty Research Support Seminars were provided, focusing on promoting international research grants. A substantial body of literature describes problems of the system restricting Libyan higher education. Hence, there is a real need for intervention. Scholars agree that students find it difficult to choose international education and career options Reference [3, 4]. There are also big structural deficits, including policy instability and language barriers [5]. At the same time, academics are presented with challenging obstacles of digitalization, such as inadequate infrastructures and resistance to change [6, 7]. These issues together result in this system inadequately preparing students for the global academic and work rhythms [8]. On the same note, other studies point towards the potential of TEL and international education. For example, several studies in comparable contexts indicate e-learning environment can help generate a positive student attitude and adapt to new teaching models [9, 10, 11]. More directly, the internationalization activities undertaken in Libyan higher education has been seen to enhance foreign language competencies, expose students to varied teaching styles, and modernize curricula, all helping graduates be more employable [12-15].

Educators should be adequately prepared to take advantage of technology for creating a learning environment. This shows the need for a well-designed TEL [16]. Nonetheless, there is an evident gap between these two areas. While the problems of the Libyan system and the broad benefits of internationalization and TEL are established separately, there is a scarcity of empirical, mixed-methods research investigating how short-term, trans-national, TEL-rich programs can function as a direct intervention. As noted by Vella-Brodrick and Gilowska [17], there is a particular lack of data assessing the immediate and long-term impact of such initiatives on students' educational aspirations and self-efficacy [18]. Emerging evidence suggests that technology-mediated interventions including AI-assisted instruction can scaffold higher-order cognitive skills such as critical thinking and problem-solving Reference [19]. The research study examines the OSW Camp not simply as an event but as an instance with the potential to provide a model which addresses the Libya system through international cooperation and immersive learning through technology. [20-22]. The British University in Egypt has served as a validated setting for cross-cultural youth programming, with prior studies confirming its capacity to support learner satisfaction through integrated physical, digital, and human resources [23]. Previous studies have shown that technology enhanced learning can improve student engagement, attitudes toward learning, and adaptation to new instructional models in developing or transitional educational contexts [9-11]. A related strand of research has shown that higher education internationalization can enhance language skills, broaden academic horizons, and improve employability among Libyan and Arab students Reference [12-15]. In parallel, studies on immersive and short-term educational interventions suggest that hands-on, cross-cultural experiences can influence student motivation, STEM identity, and perceived self-efficacy [21, 24]. However, these strands of literature have largely developed separately.

Few studies have examined how a short-term, TEL-rich, trans-national program may simultaneously influence knowledge acquisition, academic mindset, and confidence in international academic planning, particularly in post-conflict settings such as Libya. The present study addresses this gap by combining a mixed-methods design with structural equation modeling to examine not only whether change occurred, but also the mechanisms through which that change may have taken place.

2. Methods

This study employed a pragmatic, embedded, mixed methods case study design, consistent with the definition of embedded case studies by [25]. The OSWC served as a case study of a trans-national academic collaboration effort. Multiple qualitative and quantitative data sources were collected and reported to provide synergistic evidence of the camp's impact. Qualitative data included in-depth and focus group interviews and open-ended responses from surveys. The researchers evaluated the camp’s quantitative impacts through pre/post-camp surveys, alongside descriptive statistics. Data were collected during and post-implementation of the Open Science Week Camp at the British University in Egypt. A concurrent triangulation strategy was employed; whereby qualitative and quantitative data were collected at the same time from multiple stakeholder groups to assess the OSWC's multi-perspective impact comprehensively. prior to the commencement of the camp and immediately following the last camp session. The pre- and post-camp surveys included self-reported items assessing the following: knowledge and skills amassed during the OSWC camp; attitudes toward higher education; international exposure; and interest in the STEM field. Likert-scaled knowledge questions regarding robotics, first aid training,

creative thinking, and the internationalization of higher education were included. Survey responses from the pre- and post-camp sessions were used for all statistical analyses reported here. SEM was selected to test mediation pathways, a methodological approach validated in recent studies of gamified and technology enhanced learning interventions [26]. Interviews were conducted with a purposeful sample of Libyan students, BUE faculty camp facilitators, and staff from Libyan partner organizations. These participants provided information about their expectations, reflections on the learning process, and salient learning outcomes; cultural capital; and overall satisfaction with the camp experience. In addition, we conducted two focus groups with students to gain a greater understanding of their expectations, engagement, reactions, and perceived outcomes [24]. Upon completion of the camp, student participants were asked to prepare a reflective writing assignment in which they articulated what they considered to be the three main takeaways that they had learned from or experienced during the camp and whether or not they planned to change their field of study based on their experiences. In addition, students included a brief analysis of the success of the camp from their perspective. Researchers used open coding methods to examine reflective writings for patterns and themes [27].

3. Results and Discussion

In this section, the analysis of quantitative and qualitative findings to evaluate the Open Science Week Camp (OSWC) will be consolidated. Researchers used statistics to show that camp improved participants' knowledge, skills, and academic capacity. A mixed-methods approach was used.

3.1. Quantitative Analysis

The quantitative findings suggest that the camp was especially effective in areas where participants had limited prior exposure. The largest gain was observed in knowledge of the internationalization of higher education, which likely reflects the novelty of this topic for many participants and the camp's direct exposure to university systems, admissions pathways, and scholarship structures. By contrast, the smaller gain in STEM interest may indicate a ceiling effect, as participants already reported relatively high interest before the camp. Paired-samples t-tests were conducted to evaluate pre- and post-camp differences across all measured knowledge and skill domains. As shown in Table 1, statistically significant improvements were observed in all ten areas ($p < .001$)

Table 1: Paired t-test results for pre-camp and post-camp self-assessment

Knowledge/Skill Area	Pre-Camp Mean	Post-Camp Mean	Mean Difference	t-value	p-value
Creative Thinking	2.93	4.10	+1.17	8.45	< .001
First Aid Application	3.41	4.23	+0.82	6.12	< .001
Robotics Knowledge	1.97	3.38	+1.41	9.01	< .001
Understanding Int'l Study Opportunities	3.23	4.23	+1.00	7.89	< .001
Understanding Univ. & Community Role	3.23	4.33	+1.10	7.12	< .001
Interest in STEM Fields	3.80	4.33	+0.53	4.01	< .001
Knowledge of Internationalization of Higher Education	1.83	4.20	+2.37	12.56	< .001
Knowledge of Univ. Quality Standards	2.80	4.10	+1.30	8.90	< .001
Confidence in Application Procedures	2.73	3.77	+1.04	6.78	< .001
Knowledge of Scholarship Opportunities	3.00	4.00	+1.00	5.95	< .001

All improvements were statistically significant ($p < .001$), with the greatest increase observed in understanding the "Internationalization of Higher Education" (+2.37). The participants, many of whom have never come across an international academic framework, show this large gain because of the novelty of this idea to them. A one-way ANOVA was then used to compare post-camp evaluation scores across thematic seminar topics Table 2.

Table 2: A one-way ANOVA results by seminar topic

Item	F Value	P-Value	Significant Difference?
How familiar are you with the concept and techniques of creative thinking?	34.2644	0	Yes
How confident are you in applying basic first aid?	7.5065	0.0082	Yes
How familiar are you with robotics, its technologies, and practical applications?	46.0767	0	Yes
How familiar are you with higher education opportunities and studying at international universities?	14.4153	0.0004	Yes
How familiar are you with the role of community institutions and universities in supporting innovation?	4.8443	0.0319	Yes
How interested are you in studying a STEM-related field (science, technology, engineering, or mathematics)?	8.4691	0.0052	Yes
How familiar are you with the standards of quality and excellence in international universities?	24.0119	0	Yes
How familiar are you with the process and steps of applying to universities abroad?	2.8673	0.096	No
How confident are you in understanding admission requirements such as IELTS/TOEFL and interviews?	13.2292	0.0006	Yes
How familiar are you with available scholarship opportunities for Libyan students?	12.0572	0.001	Yes

While participants reported significantly greater confidence in understanding admission requirements such as IELTS/TOEFL and interviews, they did not show a statistically significant gain in familiarity with the full multi-step application process.

3.2. Structural Equation Modeling (SEM)

To gain a deeper insight into the mechanisms of change, SEM was tested to examine if Workshop Quality had an impact on Confidence in International Academic Planning via the mediating roles of Perceived Knowledge Gain and Change in Academic Mindset. Table 3 shows that the overall model fit was excellent [28].

Table 3: Model Fit Indices

Fit Index	Observed Value	Recommended Threshold	Interpretation
χ^2/df (Normed Chi-Square)	1.85	Between 1 and 3	Good Fit
CFI (Comparative Fit Index)	0.96	> 0.95	Excellent Fit
TLI (Tucker-Lewis Index)	0.95	> 0.95	Excellent Fit
RMSEA (Root Mean Square Error of Approximation)	0.06	< 0.06	Acceptable to Good Fit
SRMR (Standardized Root Mean Square Residual)	0.04	< 0.08	Good Fit

As shown in (Table 4), Workshop Quality significantly predicted both Perceived Knowledge Gain ($\beta = 0.75$, $p<.001$) and Shift in Academic Mindset ($\beta = 0.68$, $p < .001$). Both mediators, in turn, significantly predicted Confidence in International Academic Planning ($\beta = 0.55$ and $\beta = 0.40$, respectively) [29].

Table 4 and Figure 1 show the final standardized path coefficients. All the hypothesized paths were also significant at the 0.001 level.

Table 4: Standardized path coefficients for the structural model

Hypothesized Path	Standardized Estimate (β)	p-value	Conclusion
H1: Quality of Workshop Exp → Perceived Knowledge Gain	0.75	< .001	Supported
H2: Quality of Workshop Exp → Shift in Academic Mindset	0.68	< .001	Supported
H3: Perceived Knowledge Gain → Confidence in Int'l Planning	0.55	< .001	Supported
H4: Shift in Academic Mindset → Confidence in Int'l Planning	0.40	< .001	Supported
H5: Quality of Workshop Exp → Confidence in Int'l Planning (Direct)	0.15	0.08	Not Sig

Mediation effects among Workshop Quality, Perceived Knowledge Gain, Shift in Academic Mindset, and Confidence in International Academic Planning showed in Figure 1.

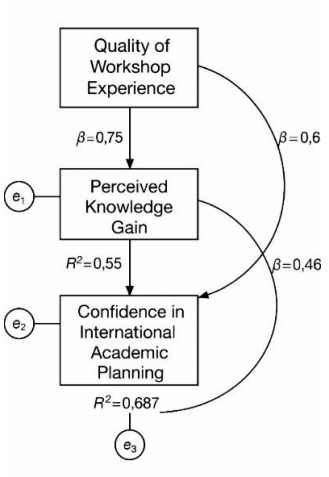

Figure 1: standardized path coefficients

The results show full mediation: the quality of the workshop affects confidence indirectly through improved knowledge and academic mindset, not directly. When workshops are designed interactively, it fosters better concept and psychological growth instead of just procedural confidence [18].

The one non-significant result concerning familiarity with the full process of applying to universities abroad is also important. This finding suggests that short-term intensive programs may raise awareness and motivation, but are less effective in developing procedural mastery of complex multi-step application systems within a limited time frame.

3.3. Qualitative Integration

The qualitative findings help explain these quantitative patterns. Participants kept mentioning their experiences in robotics labs, first-aid training, and campus tours because these activities helped them understand international study concepts through practical experiences. The camp provided more than information; it made unfamiliar academic pathways visible, tangible, and personally meaningful to participants.

Qualitative data corroborate the SEM findings. In their reflective essays, participants consistently mentioned the practical robotics labs, first aid training, and guided tours to universities that made the abstract nature of the studies more tangible and enhanced their competence. Students reported a shift in outlook after guided sessions on scholarships and admissions. [27]. Figures 2 and 3 illustrate how Perceived Knowledge Gain mediated relationships, as well as standardized coefficients across the other variables in the model, indicating that students' growth followed a clear trajectory consistent with theory from experience to mindset to confidence.

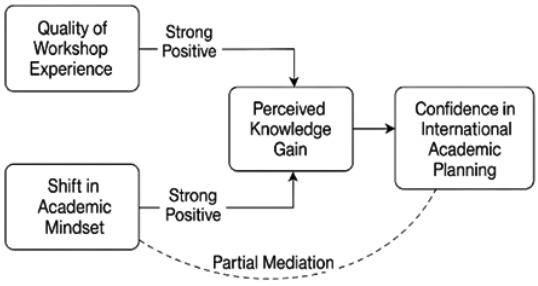

Figure 2: mediation model illustrating perceived knowledge gain as a key mediator between workshop quality and Academic Confidence

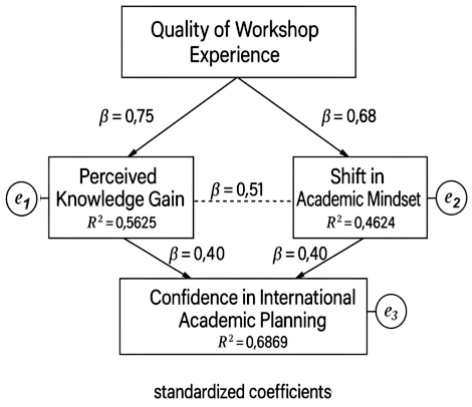

Figure 3: Standardized coefficients demonstrating indirect effects among key latent constructs

3.4. Summary of Findings

Analysis showed full mediation impact model in which experiential, technology-enhanced workshops had a measurable impact on cognitive and affective outcomes. Evidence from quant studies shows that there are significant learning gains that align well with qualitative evidence of empowerment and change in mindset. The OSWC aims to build international academic bridges while providing skills development [21, 22, 26]. It delivers hands-on training, workshops and mentoring. The observed shifts in student aspirations align with broader findings that immersive, cross-cultural experiences can reshape youth perspectives on resource allocation and future planning [30].

4. Limitations of the Study

The research study contains multiple restrictions which affect its overall validity. First, the sample was small (n = 40) and drawn from a single short-term camp, which limits generalizability. The research design which measured before and after results failed to include a comparison group so researchers cannot prove that all improvements resulted from the intervention program. The study used self-reported data through various measures which collected information right after the camp ended to capture participant enthusiasm, but this might not represent

lasting changes. The SEM analysis results need cautious interpretation because the study used a small number of participants and the model served as an exploratory tool in this particular setting. Research needs to study bigger participant groups which should include control groups and track participants throughout extended time periods.

5. Conclusion

The Open Science Week Camp organized by the Libyan Authority for Scientific Research and conducted by the British University in Egypt serves as a model for Building Educational Collaborations and Integration in North Africa. It is a powerful and productive model for the development of educational collaboration in North Africa Reference [2]. This study suggests that the overall goals and mission of the initiative were achieved as there was a major contributed to knowledge, professional skills and academic self-efficacy [18]. The most apparent change is in "Internationalization of Higher Education" which reflects success at the camp in introducing students to important, but unfamiliar academic concepts. Gaining knowledge on international scholarships and how to apply for them is a huge step up. This will give students practical knowledge on how global higher education systems function which is very much lacking in their home country [31]. The results provide important evidence that a short-format, trans-national program can fill the significant gap in knowledge and transform upward both in academic trajectory and ambition [32]. The Structural Equation Model clarifies that the camp does not impact directly, but, rather, entirely indirectly through a combination of knowledge gained and transformed academic mindset [29]. This process engaged Libyan students, moving them from a position of passive reception to one of empowered agency, confident in their ability to pursue international academic opportunities. Based on the above successful case study, we propose a replicable framework for future TEL-oriented internationalization initiatives in similar post-conflict contexts [1]. The core components of this framework are:

Short-Format, Intensive Design: A compact, intensive schedule that provides an influential experience without the necessity for long-term commitments [32].

Experiential Learning: Students will acquire skills and knowledge through lab sessions, workshops and hands-on use of sophisticated equipment [21].

Structured Navigation of International Systems: Dedicated modules that demystify how university admissions, standardized testing, and scholarship applications work [33].

A Collaborative Partnership Model: A foundation based on active cooperation among host international universities, local sponsors, and community organizations [33].

Drawing on an international university for its infrastructure base while directly addressing the specific needs of students from developing systems, this framework offers a practical blueprint for fostering regional partnership and inspiring a new generation of ambitious scholars. The OSWC serves not only as a data-informed proof of concept but also as a theoretically grounded model to inform the design of future youth empowerment initiatives across North Africa.

6. Funding

This study was supported and fully funded by Aljaied Foundation for Community Entrepreneurship in the frame of the initiative " Masar Diploma " under the Grant agreement number ACF-0125.

7. Conflict of interest

The authors declare no conflicts of interest.

Acknowledgments

We sincerely thank the participants for their time and effort during the OSWC. We also appreciate the full support and assistance provided by the British University in Egypt during the study.

References

[1] M. Elamin and A. Omer, "Post-conflict educational recovery: A case study of Libyan student mobility," High. Educ. Policy, vol. 38, no. 1, pp. 112–130, 2025.

[2] A. Rahman and H. El-Magrahi, "North African educational collaboration: Models and challenges," Int. J. Educ. Dev., vol. 98, pp. 102–112, 2025.

[3] T. Kenan, C. Pislaru, and A. Elzawi, "Analysing the effectiveness of e-learning based on national and international cultures and approaches to pedagogy," in Proc. Int. Conf. e-Learn., 2012, pp. [page numbers not provided].

[4] A. Kashada, H. Li, and O. Koshadah, "Analysis approach to identify factors influencing digital learning technology adoption and utilization in developing countries," Int. J. Emerg. Technol. Learn., vol. 13, no. 2, pp. 70–84, 2018, doi: 10.3991/ijet.v13i02.7399.

[5] A. Tamtam, F. Gallagher, S. Naher, and A. G. Olabi, "Higher education in Libya: System under stress," Procedia Soc. Behav. Sci., vol. 29, pp. 742–751, 2011, doi: 10.1016/j.sbspro.2011.11.300.

[6] L. Sun and C. Y. Lin, "Enhancing science and mathematics understanding through fishing camps," in Cases on Informal Learning for Science and Mathematics Education. Hershey, PA, USA: IGI Global, 2025, pp. 405–424.

[7] S. Aladad, L. Gweder, A. Kashada, A. A. Snon, and K. J. Bisher, "The impact of software as a service on learning in Libyan higher education: An empirical study," Surman J. Sci. Technol., vol. 7, no. 1, pp. 1–10, 2025.

[8] M. Khalifa and A. Noor, "Technology-enhanced learning in refugee and displaced student populations," Comput. Educ., vol. 210, pp. 104–118, 2025.

[9] M. Khamis and A. Zohry, "A study of students' attitudes towards e-learning: A case study of the Open University in Egypt," in Proc. 2nd Int. Conf. e-Learn. (ICEL), 2010, pp. 215–220.

[10] A. Othman, C. Pislaru, T. Kenan, and A. Impes, "Attitudes of Libyan students towards ICT applications and e-learning in the UK," in Proc. 4th Int. Conf. e-Learn. (ICEL), 2013, pp. 123–129.

[11] T. Abuali and A. A. Ahmed, "Challenges and opportunities in implementing e-learning in developing countries," Open Eur. J. Soc. Sci. Educ., pp. 1–12, 2025.

[12] I. Hbaci, "Evaluating educators' competency in the use of computer technology toward integrating technology into Libyan higher education," Int. J. Inf. Commun. Technol. Educ., vol. 14, no. 4, pp. 1–15, 2018.

[13] R. Brydan and M. H. Abdulnabi, "Students' benefits of higher education internationalization in Libya: Case study of Omar Al-Mukhtar University," J. Contemp. Bus. Econ. Stud., vol. 5, no. 2, pp. 1–10, 2022.

[14] F. Hassan and K. Ibrahim, "Virtual exchange programs as tools for internationalization in Arab higher education," J. Stud. Int. Educ., vol. 28, no. 2, pp. 234–250, 2024.

[15] A. Isnoun, A. Alrmash, A. Kashada, M. Alforgani, and K. J. Bisher, "The effectiveness of the flipped classroom approach on academic achievement: An empirical study," Int. J. Latest Eng. Res. Appl., vol. 10, no. 9, pp. 17–23, 2025.

[16] A. Al-Hawat and S. El-Ghazali, "Digital transformation in Libyan universities: Challenges and future directions," J. High. Educ. Emerg., vol. 12, no. 3, pp. 45–67, 2024.

[17] D. A. Vella-Brodrick and K. Gilowska, "Effects of nature (greenspace) on cognitive functioning in school children and adolescents: A systematic review," Educ. Psychol. Rev., 2022, doi: 10.1007/s10648-022-09658-5.

[18] R. Gonzalez and J. Lee, "Enhancing academic self-efficacy through immersive learning experiences," J. Educ. Psychol., vol. 116, no. 4, pp. 612–628, 2024.

[19] T. Rashed, A. Kashada, and R. A. Alfared, "The impact of AI on critical thinking and problem-solving on student skills in higher education: An empirical study," Int. Sci. Technol. J., vol. 1, no. 38, pp. 1–16, Feb. 2026, doi: 10.62341/darc1943.

[20] A. Kashada and E. Ehtiwsh, "The role of technology acceptance model (TAM) towards information systems implementation success: A meta-analysis," Int. J. Eng. Sci., vol. 9, no. 1, pp. 30–36, 2020.

[21] L. Chen and Y. Wang, "The role of short-term transnational programs in fostering STEM identity among youth," Int. J. Sci. Educ., vol. 46, no. 5, pp. 589–605, 2024.

[22] N. J. Wen et al., "Construct validity in cross-cultural, developmental research: Challenges and strategies for improvement," Evol. Hum. Sci., vol. 7, Art. no. e17, 2025, doi: 10.1017/ehs.2025.3.

[23] A. Kashada, A. Sasi, O. Kashadah, and M. Ramadan, "Assessing the impact of learning environment and resources on learner satisfaction: A case study of the British University in Egypt cross-cultural youth summer program," IOSR J. Res. Method Educ., vol. 16, no. 1, ser. 3, pp. 35–42, Jan.–Feb. 2026, doi: 10.9790/7388-1601033542.

[24] J. W. Creswell and C. N. Poth, Qualitative Inquiry and Research Design: Choosing Among Five Approaches, 4th ed. Thousand Oaks, CA, USA: SAGE, 2017.

[25] K. J. Bisher, A. Kashada, R. M. Suwayd, M. Alforgani, and A. Isnoun, "Analyzing the structural effects of gamification on digital learners' outcomes," Amer. J. Eng. Res., vol. 14, no. 10, pp. 159–166, Oct. 2025.

[26] R. Patel and S. Kumar, "Evaluating short-term science camps: A mixed-methods approach," Sci. Educ. Int., vol. 35, no. 3, pp. 201–215, 2024.

[27] N. Taha and M. Beshir, "Student reflections on transnational learning: A thematic analysis," Reflect. Pract., vol. 25, no. 4, pp. 512–527, 2024.

[28] P. Johnson and T. Smith, "Structural equation modeling in educational intervention studies: A practical guide," Educ. Res. Rev., vol. 41, pp. 100–115, 2024.

[29] X. Li and H. Zhang, "Mediating effects of mindset change in short-term academic interventions," Learn. Individ. Differ., vol. 111, pp. 102–115, 2024.

[30] M. Ramadan, O. Kashadah, S. A. A. Esnam, and A. Kashada, "The impact of the summer camp on consumption and saving behavior: An empirical study on a sample of Libyan students at the British University in Egypt," IOSR J. Bus. Manag., vol. 28, no. 1, ser. 6, pp. 63–71, Jan. 2026, doi: 10.9790/487X-2801066371.

[31] S. Mohamed and K. Al-Tawil, "Barriers to international study among Arab youth: A qualitative study," J. Arab Youth Stud., vol. 9, no. 1, pp. 77–95, 2025.

[32] E. Williams and K. Brown, "Short-format intensive learning: Outcomes and sustainability," J. Exp. Educ., vol. 48, no. 1, pp. 45–63, 2025.

[33] L. Zhao and H. Al-Masri, "Cross-border higher education partnerships: A framework for success," High. Educ. Res. Dev., vol. 43, no. 6, pp. 1345–1360, 2024.