Bridging skills gaps in higher education through industrial attachment to academic staff in Tanzania

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ABSTRACT

Academic staff is the instrument for students' competence development; therefore, their lack of industrial experience, either because they have not had opportunities to practice what they teach or because significant changes in knowledge, skills, and technology have occurred since they last worked in the field, negatively impacts their students' employability and contributions to the national, regional, and global development agenda. Therefore, this study aimed to address the practical skill gap by examining industrial attachment for academic staff. Guided by Kolb's experiential learning theory, the study used an exploratory sequential mixed-methods design. Data were collected through semi-structured questionnaires from 145 (57%) of 255 academic staff sampled via cluster sampling across eight campuses of the Tanzania Institute of Accountancy. Key informant interviews were conducted with 10 senior staff members purposively sampled from each department. The analysis involved descriptive statistics and thematic analysis techniques. Results revealed a lack of a broad range of practical skills among academic staff. Although they were aware of potential organisations for enhancing their practical skills, the programme requires institutional, financial, and policy strategies to facilitate effective and successful industrial attachment. The study concludes that since academic staff are aware of the practical skills they lack and the organisations suitable for acquiring such skills, it is now imperative for higher education institutions to develop effective strategies for successful industrial attachment programmes for their academic staff. Equipping academic staff with relevant practical skills through industrial attachment will enable them to better plan, teach, assess, and review curricula to enhance the practical skills required in the labour market. Future research will focus on developing a measurement scale for assessing practical skills in post-industrial attachment.

Keywords: Academic Staff, Higher Education, Industrial Attachment, Practical Skills, Skill Gaps, Tanzania Institute of Accountancy

I. INTRODUCTION

Globally, the industry is suffering from an imbalance between the demand and supply of a skilled workforce, creating a need for reskilling and upskilling (Kennedy & Sundberg, 2025; European Labour Authority, 2024). Skill gaps are affecting both employed individuals and job seekers due to technological changes. As a result, skill development has become a global research and development priority (Mhaske et al., 2025). European countries have been working to address these skill gaps caused by various economic, social, and environmental disruptions over the past 25 years (European Labour Authority, 2024; Braun, 2023). In the United States, the government has allocated funds to promote apprenticeship programmes as a way to address the skill mismatch between supply and demand in the workforce (Hodes & Kelley, 2017). Similarly, the Asian Development Bank has identified the skill gaps needed to support industrial transformation and has developed strategies to mitigate the issue (Ra et al., 2020). Developing countries, including those in the Caribbean and Latin America, also face skill imbalances that impact employability and economic growth (Vargas, 2023). In Africa, the same gap exists across the continent, affecting poverty reduction efforts and economic development initiatives, highlighting the need for targeted intervention (AUC/OEC, 2024; Arias et al., 2019).

In Tanzania, the World Bank, in collaboration with the Ministry of Education, Science and Technology, through the Higher Education for Economic Transformation (HEET) project, has identified skill gaps among higher education graduates that hinder both employability and productivity. This underscores the importance of industrial attachments for students and academic staff to bridge these gaps (Ministry of Education, Science & Technology [MoEST], 2021; World Bank, 2021). If these skill gaps are not addressed, most graduates may remain

unemployed, unable to find or create jobs, which threatens the country's progress toward achieving sustainable development goals, specifically goals 1 and 8—poverty alleviation and decent work. Therefore, training institutions need to implement deliberate intervention measures to meet the evolving skill needs (United Nations, 2025; Munishi, 2022).

The Tanzania Institute of Accountancy, a public institution tasked with providing training, research, and consultancy services in business-related fields, responds to national, regional, and global skill development initiatives. Its efforts support and advance the National Development Vision 2050, the East African Community Development Agenda 2050, SADC Development Vision 2050, African Development Agenda 2063, and the global Sustainable Development Agenda 2030 (Shahanga & Kasambala, 2023; Kasambala, 2025). Since its establishment in 1973 with a single campus in Dar es Salaam, the institute has expanded to eight campuses in Mbeya, Singida, Mtwara, Mwanza, Kigoma, Zanzibar, and Tanga, separate from the main site in Dar es Salaam. This growth has established it as a strategic training center capable of supplying a diverse range of employers with skilled, competitive graduates (Tanzania Institute of Accountancy, 2024b).

Furthermore, the number of students graduating from TIA has increased by 90%, from 6,131 in 2014 to 11,625 in 2024. This increase aims to meet labor market demands across various levels, from technicians to managerial roles (Tanzania Institute of Accountancy, 2024b). The academic staff has also grown from 82 in 2014 to 252 in 2024, representing a 207% increase, with qualifications ranging from bachelors to doctoral degrees. The institute has expanded its program offerings from short courses to certificates, ordinary diplomas, postgraduate diplomas, and master's degree programs (Tanzania Institute of Accountancy, 2024b). These developments have made TIA a distinctive institution for workforce training. Possessing practical skills among graduates of TIA is vital for improving production, service delivery, and ultimately driving economic growth and sustainable development (Shahanga & Kasambala, 2024).

Nevertheless, there is increasing concern worldwide over the rising unemployment among higher education graduates, driven by limited practical experience due to geoeconomic shifts, technological disruptions, economic uncertainties, and demographic changes, which have transformed the nature of work (Ministry of Education, Science & Technology, 2021; World Bank, 2021). As a river cannot flow higher than its source, the skill gaps must be addressed first by academic staff before being passed on to students. This highlights the importance of exposing academic staff to industry experience to develop the practical skills needed in the labor market (Shahanga et al., 2023; World Bank, 2021).

1.1 Statement of the Problem

The Tanzania Development Vision 2050 focuses on skills development to foster a prosperous, just, inclusive, and self-reliant economy (United Republic of Tanzania, 2025). This vision serves as a tool for promoting just, sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all by 2030, aligned with Sustainable Development Goal 8 (United Nations, 2025). However, the World Economic Forum predicts a growing practical gap in the labour market, estimating that by 2030, about 59% of the global workforce will require retraining to meet job skill demands (Mhaske et al., 2025). In Tanzania, most of the higher education graduates are jobless due to a lack of employability skills (Ndyali, 2016; National Council for Technical Education, 2021). To address the skill gaps, partnership and collaboration between higher education institutions and industry are essential through industrial attachment (World Bank, 2021). Although academic staff play a crucial role in students' skill development—as facilitators, assessors, mentors, coaches, and role models—they often lack vital industrial experience, either because they have not had opportunities to practice what they teach or because significant changes in knowledge, skills, and values have occurred since they last worked in the field (National Council for Technical Education, 2021; University of Dar es Salaam, 2023; Mbeya University of Science and Technology, 2024; World Bank, 2021; Ministry of Education, Science and Technology, 2021). This lack or limited hands-on skill among academicians risks producing unemployable graduates, highlighting the need for industrial attachment programmes for academic staff to bridge the practical experience gap.

1.2 Research questions

i. What are the practical skills needed by academic staff in Tanzania's higher education institutions?
ii. Which organizations are seen as crucial for developing practical skills for academic staff in Tanzania's higher education institutions?
iii. What are the implementation strategies for the industrial attachment programme to academic staff in Tanzania's higher education institutions?

II. LITERATURE REVIEW

2.1 Theoretical Review

The study was guided by experiential learning theory, proposed by David Kolb (1984), to highlight the important role of experience in the learning process (Kolb, 1984). The theory was selected because of its strength in addressing the need to combine learning with the work environment to develop essential practical skills; therefore, it underscores the importance of industrial attachment for academic staff to gain experience of labor market needs (Villarroel et al., 2020). The theory emphasizes that learning should be adaptable to the real world; such adaptation requires interaction within actual working environments, hence the need for industrial attachment for academic staff (Kolb & Kolb, 2012; Kolb et al., 1999). Through experiential learning, learners gain opportunities to solve problems, communicate, and think critically, thereby developing soft and technical skills. The theory highlights the critical role of practice in moving from cognitive understanding to psychomotor skills through repeated practice and exposure, evolving from explicit to implicit knowledge. This process facilitates a gradual transition from deliberate and effortful use of a cognitive skill to more automatic and fluent application of the same (Kachinske, 2021). Therefore, experiential learning theory was chosen as a relevant framework for this study to explore the practical skills required by academic staff in Tanzanian training institutions, assess potential organizations for industrial attachment to develop such skills, and examine strategies for implementing the industrial attachment program. When they gain practical experience in these skills, they will be better equipped to teach, assess, mentor, and coach their students.

2.2 Empirical Review

Globally, improving productive skills has become a policy priority to boost not only graduates' employability but also their contribution to economic growth and sustainable development. For example, Kennedy and Sundberg (2025) highlighted the importance of practical involvement in skill development. In developed countries, especially in European nations, the literature points to industrial engagement in practical skill development to address the skill imbalance in the workforce caused by disruptive economic, social, and environmental challenges (European Labour Authority, 2024; Braun, 2023). In the United States, the skills gap is tackled through apprenticeship programs for students and industry placements for academic staff (Hodes & Kelley, 2017). Asian countries have also adopted similar measures to reskill and upskill workers to meet the demands of industrial digital transformation (Ra et al., 2020; OECD, 2021). In developing countries, Southeast Asia launched skill development initiatives as part of post-COVID recovery efforts to address digital technology needs, climate change, globalization, aging populations, and migration, all of which have transformed production and service delivery across the region and globally (OECD, 2021). In the Caribbean and Latin America, vertical and horizontal skill gaps have impacted productivity and economic growth. About 29% of the workforce needs retraining due to a lack of essential skills, prompting increased industry attachment for practical skills development (Vargas, 2023). In parts of Africa, including East Africa, skill gaps threaten not only graduate employability but also economic growth, underscoring the importance of partnerships with employers to meet the demands of the digital and green economies (AUC/OEC, 2024). In Sub-Saharan Africa, practical skills deficiencies among the workforce are linked to poverty and hindered economic growth, calling for collaborative efforts involving the private sector to address these gaps through systemic change (Arias et al., 2019). Such skill mismatches contribute to graduate unemployment, reducing their productivity and ability to contribute to the economy (Biraori & Ouko, 2023).

Therefore, most Higher learning institutions in different countries have embarked on industrial attachment programmes for students as an intervention to bridge such skill gaps. The industrial attachment is meant to enable training institutions to align their academic programmes with industrial needs in terms of knowledge and skills (Khumalo & Dewah, 2018). Studies indicate that: The University of Colombo in Sri Lanka, the Institute of Technology and Management Hamirpur in India; Murang'a University of Technology and the Aga Khan University in Kenya; the National University of Science and Technology, the Gweru Polytechnic College and Chinhoyi University of Technology in Zimbabwe; The University of Namibia in Namibia and Mbeya University of Science and Technology in Tanzania attach their students in the industries or institutions related to their study programmes to develop essential skills required by employers in the labour market which can hardly be imparted in higher learning institutions (Bhardwaj, 2016; Khumalo & Dewah, 2018; Mwaura et al, 2022; Lakicha, 2024; Mabhanda, 2016; Shaanika et al, 2021). The literature indicates that most of the scholars have emphasized the need and importance of industrial attachment for students to bridge the skill gap between graduate students and the labour market needs, giving little attention to their instructors who teach and assess hands-on skills to their students (Bhardwaj, 2016; Biraori & Ouko, 2023; Khumalo & Dewah, 2018; Mwaura *et al*, 2022; Lakicha, 2024; Mabhanda, 2016). However, the success of the industrial attachment for students relies mainly on the academic

staff's skills and support for the effective securing, placement, management, and assessment of students in the industrial attachment (Shaanika *et al*, 2021). Although higher education institutions have developed guidelines for industrial attachment for their academic staff, little is known about the practical skills needed by academic staff in Tanzania business training institutions, the potential organizations for equipping academic staff with business related industrial experiences, as well as the implementation strategies for effective and successful industrial attachment for academic staff in Tanzania, hence a reason for this study (National Council for Technical Education, 2021; University of Dar es salaam, 2023; Mbeya University of Science and Technology, 2024).

III. METHODOLOGY

The study was conducted at the Tanzania Institute of Accountancy, a public training institution mandated to conduct training, research, and consultancy services in business-related disciplines. The institute has eight campuses strategically located in economic zones: Dar es Salaam, Mbeya, Mtwara, Kigoma, Singida, Mwanza, Zanzibar, and Tanga. The choice of the study area was influenced by its geographical coverage, programme diversity, enrollment capacity, and staff profile; hence, a potential public business training institute was selected as a case study for industrial attachment to academic staff to address practical skill gaps (Shahanga & Kasambala, 2024). It adopted a pragmatist philosophical paradigm, a mixed approach, and an exploratory mixed methods design (Creswell & Cresswell, 2022). The nature of the study required this design to address its counterpart weaknesses, as the study required numbers, views, discussions, and opinions across the academic staff. The quantitative data were collected and analyzed first from academic staff and then triangulated with qualitative data from the key informants for validation purposes (Creswell & Cresswell, 2022). The study population involved 155 (61%) out of 255 academic staff of the Tanzania Institute of Accountancy sampled through a clustering technique from each programme and each campus of the institute, among them 10 key informant interviewees were purposely sampled from 10 senior staff to validate and consolidate the information which were collected through questionnaires from 145 academic staff. The quantitative data were analyzed descriptively through the Statistical Package for Social Science (SPSS) to generate frequency, percentage, mean, and standard deviation. The qualitative data were subjected to thematic analysis techniques and presented through thematic paraphrases and verbatim quotes (Bacon-Shone, 2020; Ghanad, 2023).

IV. FINDINGS & DISCUSSION

4.1 The Respondents' Demographic Information

The study sought the profile of the respondents' demographic information, which included their age, sex, education level, and the academic programmes they teach. The results are presented in Table 1.

Table 1
Respondents' Profile

Category		Frequency	Percentage
Age	30-35	11	7.1
	36-40	35	22.6
	41-45	49	31.6
	46-50	35	22.6
	51-55	20	12.9
	Above 55	05	3.2
Sex	Male	112	72.3
	Female	43	27.7
Education	Bachelor Degree	13	8.3
	Masters	133	86.0
	PhD	8	5.1
	Professors	1	0.6
Taught programmes	Accounts and Finance	35	22.6
	Procurement and Logistics	30	19.3
	Marketing and Public Relations	25	16.1
	Human Resource Management	30	19.3
	Law	10	6.5
	ICT	10	6.5
	Education	15	9.7
Total		**155**	**100**

The results in Table 1 indicate that most of the academic staff of TIA 95 (61%) are young adults, aged between 30 to 45 years, hence they still have several years to prepare the employable workforce. This means, if they are attached to the industry, they are capable of acquiring relevant practical skills, which they will impart to their students and produce competent and employable graduates for over fifteen working years before their 60-year retirement age. Similarly, the institute has a gender consideration of male and female of 1:3, which is reasonable. In terms of education level, most of the employees have a master's degree. Which means, exposing them to the labour market will open up their mind on what to pursue for a doctorate, because the academic ladder requires professional development beyond a master's degree. Moreover, these academic staff they have a diverse range of skills in different business-related fields; hence, they have a wide choice of employers for industrial attachment, in both public and private sectors. The composition of the respondents brings hope to bridge the practical skills gaps by exposing them to the working environment, as stressed by experiential learning theory, where learning as a process is extended beyond the classroom setting to the working environment. In this juncture, the development of the employability skills entails the collaboration between men and women, adults and youth, academic institutions and employing organizations, as well as different expertise (Kolb, 1984; Munishi, 2022).

4.2 The Practical Skills Needed by Academic Staff in Tanzanian Business Training Institutions

The study sought the views of the academic staff on the practical skills they need in relation to their area of specialization. The results from the open-ended questions in semi-structured questionnaires are presented in Table 2.

Table 2

Practical Skills Needed by Academic Staff in Tanzania Based on Their Academic Sections

Academic Sections	**Specific practical skills needed by academic staff**
Accounting and Finance	The use of computerized accounting and payment systems (GePG; MUSE) The use of advanced Microsoft Excel in accounting activities Tax laws and tax assessment systems Financial auditing standards and practices
Procurement and Logistics Management	Interpretation of Public Procurement ACT (2023) and its regulations (2024) The use of Public Electronic Procurement Systems (NeST) Interpreting procurement guidelines, policies, procedural forms, and circulars World Bank standards and guidelines for international procurement
Marketing and Public Relations	Practical business advertisement, promotion, and branding The use of social media platforms in marketing and building public relations Writing professional press releases, captions, and news articles Preparation, management, addressing, and responding to the press conference
Human Resource Management	The use of digital systems in staff recruitment and performance management Employees' dispute resolution principles and practice Management of employees' remuneration, compensation, and benefits Interpreting employment and labour relations (ACT and its regulations)
Law	Drafting and executing legal proceedings for criminal and civil cases Statute and contract preparation procedures and practice The interpretation and application of Tax laws and regulations The interpretation and application of the Cybercrimes ACT and its regulations
Information and Communication Technology (ICT)	System analysis, development, and management Cyber-attacks detection, prevention, and control Development and Management of Artificial Intelligence Data science
Teacher Education	Competence-based Curriculum design and development Curriculum standards, validation, and approval procedures Competence-based innovative pedagogies and assessment Teaching and assessment materials design, development, and use

The results from open-ended questions with academic staff from different sections indicated different aspects of practical skills that they require for effectively cascading the same to their students. The skills fall into seven categories of skills, namely: Accounting and finance; Procurement and logistics management, marketing and public relations, human resource management, teacher education, and management studies (ICT and business

law). Validating this information, key informant interviews were conducted with senior academic staff about the key practical skills they need in their area of specialization, and how to develop them. The response was:

> *We need to update ourselves with the computerized accounting systems to keep pace with the changing world and the nature of accounting for effectively teaching and assessing our students for the same. We need exposure to the industry where we can access accounting and tax assessment systems"* (Senior Staff Accounting and Finance, August 2025).

Paraphrasing the responses from a senior staff member from procurement and logistics management, she argued that there is a new Public Procurement Act of 2024, which operates, and all the procurement issues are guided by that ACT and its 2024 regulations. Most of the academic staff are less aware of the ACT and its regulations because when they were in college, they were taught the previous ACT and regulations, which are not in use currently. Therefore, they need an opportunity in the institution where they can practically apply that law and its regulations. Other respondents added that:

> *"I theoretically teach and insist to my students on the need for effective use of social media platforms in business branding and promotion, or even the use for press releases and press conferences in building public relations. But I have never practiced it myself because I lack such practical skills. My exposure to the labour market may equip me with such skills, which will improve teaching and mentoring my students"* (Senior staff marketing and public relations, August 2025).

Paraphrasing the response from a senior staff member from the ICT department, he said that the advancement in science and technology has brought artificial intelligence and online business platforms such as eBay, Alibaba, and Kikuu. He added that there are reported students being robbed of their money through irresponsible online purchasing. Therefore, he thought that the academic staff from the ICT department requires digital experiences to enable them to practically teach students in the development of secure digital business platforms, detection and control of cyber attach, and ethical AI use in academics.

The senior staff views concur with those of academic staff that they need practical skills, which they lack. The lack of practical skills among academic staff deviates from previous reports from the World Bank and the Ministry of Education, Science and Technology (MoEST), which established the practical skill gaps among graduates but not among their instructors (MoEST, 2021; World Bank, 2021). Similarly, the results differ from previous studies, which established a lack of practical skills among Tanzanian graduates and not the academician who teaches, assesses, supervises, mentors, and coaches them (Munishi, 2022; Mashenene et al., 2024; Mayenga, 2024). Based on experiential learning theory, it can be argued that if academic staff require practical skills related to their area of specialization to be able to cascade the same to their students, they should undertake an industrial attachment to the relevant organizations to develop such skills and inculcate the same in their students through curriculum review, teaching, assessment, and field administration.

4.3 Organizations Perceived as having Potential for Practical Skills Development to Academic Staff

The study sought the perception of the academic staff on the potential organizations where they can develop practical skills through industrial attachment. The results are presented in Table 3.

Table 3

The Organizations Perceived as Having Potential for Practical Skills Development.

Skills categories	Potential organization for developing potential practical skills
Accountancy and Finance	BOT, TRA, DSE, Treasury Registrar, Ministry of Finance, National Audit Office of Tanzania, Audit Firms, Social Security Funds (PSSSF & NSSF)
Business Administration	Commercial Banks, Water Supply Authorities, TCCIA, TAN trade, Clearing and Forward Companies
ICT	Telecommunication Companies, e-GA, TCRA, UCSAF
Law	High Court, TRAT & TRAB, BRELA, Social Security Organizations
Procurement and Logistics	PPRA, PPAA, MSD, Beverage Industries, TASAC, Tanzania Ports Authority, LATRA, TARURA, REA, EWURA
Human Resource Management	Public Service Recruitment Secretariat, TAESA, ILO, LGAs, PSC.
Marketing and Public Relations	Broadcasting Corporations, Telecommunication Companies, TANESCO, BAKHRESA Group, Sports Clubs (Simba &Young Africans)
Teacher Education	NACTVET, TCU, TIE, NECTA, TEA, UNESCO

The results in Table 3 show that the academic staff identified several employing organizations' potential for the development of practical skills. They included government agencies, parastatal organizations, corporate, private institutions, and international organizations. The abbreviated institutions names' stand for Central Bank of Tanzania (B.OT); Tanzania Revenue Authority (TRA); Dar es salaam stock exchange (DSE); Public Service

Social Security Funds (PSSSF); National Social Security Fund (NSSF); Tanzania Chamber of Commerce, Industry & Agriculture (TCCIA); Tanzania Trade Development Authority (Tan Trade); electronic government agency (e-GA); Tanzania Communication Regulatory Authority (TCRA); Energy & Water Utility Regulatory Authority (EWURA); Tax Revenue Appeals Board (TRAB), Tax Revenue Appeals Tribunal (TRAT); Land Transport Regulatory Authority (LATRA); Public Procurement Regulatory Authority (PPRA); Public Procurement Appeals Authority (PPAA); Tanzania Rural and Urban Roads Agency (TARURA); Medical Store Department (MSD); Rural Energy Agency (REA); Tanzania Employment Service Agency (TAESA); Public Service Commission (PSC); International Labour Organization (ILO); Business Registrations and Licensing Agency (BRELA); Tanzania Electricity Supply Company (TANESCO); National Council for Technical and Vocational Education and Training (NACTVET); Tanzania Commission for Universities (TCU); Tanzania Institute of Education (TIE); National Examination of Tanzania (NECTA); and Tanzania Education Authority (TEA). The follow-up with the key informants on the criteria of their choice received the following responses.

> *My choice of the industrial attachment entity was mainly influenced by the primary function of the organization in relation to the essential skills employed. Because I teach modules related to human resources, my attachment to the Public Service Recruitment Secretariat (TPSRS), intended to equip me with skills related to digital recruitment systems (Senior staff human resource, August 2025).*

The response from senior staff aligns with the responses from academic staff, indicating that developing practical skills requires relevant organizations with primary skills and functions matching those of academic staff. The findings are consistent with the regulatory body's view on partnerships between training organizations and employers to address practical skills gaps (National Council for Technical Education, 2021). They also support experiential learning theory, which states that learning is a process that involves interaction in real environments, allowing individuals to acquire specific practical skills (Kolb, 1984; Villarroel et al., 2020). If academic staff from Tanzanian business training institutions feel they lack the practical skills their students need, and if they are aware of potential organizations where these skills can be developed, and if such organizations are accessible, then it is time to enhance practical training for academic staff through industrial attachments. For effective and successful industrial attachments, academic staff should be allowed to select relevant organizations for their practical skills development. Providing this opportunity will help them feel more comfortable because they will have a clear reason and purpose for their choice. Additionally, they are more likely to achieve their career and professional development goals.

4.4 Implementation Strategies for Industrial Attachment to the Academic Staff of Tanzania Business Training Institutions

The study determined the implementation strategies for the industrial attachment of academic staff of Tanzania business training institutions. The results are presented in mean and standard deviation in Table 4.

Table 4

Implementation Strategies for Industrial Attachment to Academic Staff of Tanzania Business Training Institutions

Implementation Strategies	M	SD
Establishment of Industrial Attachment Office at the Institute	3.84	.915
The establishment of the industrial skill gap inventory	3.99	.876
The development of an industrial attachment plan and schedules	4.39	.893
Memorandum of Understanding with potential employers	4.55	.615
The development of an Assessment plan for Industrial attachment	3.67	.979
The establishment of the sustainable industrial attachment fund	4.86	.535
The development of an incentive scheme for industrial attachment	4.49	.714
The development of the feedback and reporting mechanism	3.71	.963
The establishment of the Monitoring, Evaluation, and Learning Plan	3.80	.873
Training academic staff on the ethics and standards of industrial attachment	3.83	1.962

The results in Table 4 indicate 10 key strategic areas proposed by academic staff to enhance their industrial attachment. All the strategies were positively rated because they had a mean score above the average mean of 3.0, which is the midpoint for a five-point Likert scale questionnaire. The agreement of the respondents indicated by the standard deviation, was higher in the funding mechanisms, signing memorandum of understanding, and the development of incentive schemes as the key issues. Triangulating these results, an interview was conducted with senior staff on what should be done for effective and successful implementation of the industrial attachment to academic staff. Their responses were:

> *It is not easy to secure an industrial attachment chance in some sensitive organizations; therefore, the institute should have a binding agreement with them and an extra funding source to support the academic staff during their industrial attachment because they will be away from their work stations (Senior officer, Human Resource, August 2025).*

The results from senior staff agree with other academic staff that the institute needs to take certain actions to ensure the success and effective implementation of industrial attachments. This view is supported by the Tanzania Council for Technical Education, which advises that industrial attachment requires additional funding, a monitoring and evaluation system, and partnerships with industry for practical skills development (NACTE, 2021). Few studies have focused on implementation strategies for industrial attachment for academic staff, as most existing research concentrates on student attachment. These strategies aim to address the challenges highlighted in the University of Dar es Salaam (UDSM) and Mbeya University of Science and Technology (MUST) guidelines (University of Dar es Salaam [UDSM], 2023; Mbeya University of Science & Technology [MUST], 2024). If industrial attachment involves working away from their usual workplace, implementing such programs requires integrating institutional, policy, and financial strategies. With these strategies, the programs can be successfully carried out. The successful implementation of these guidelines depends on collaboration among academic staff, employers, development partners, policymakers, and the government.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

Academic staff are the key determinants for students' competence development, therefore their lack of industrial experience—either because they have not had opportunities to practice what they teach or because significant changes in knowledge, skills, and technology have occurred since they last worked in the field—negatively impacts their students' employability and contributions to the national, regional, and global development agenda. Therefore, the study examined essential practical skills required by academic staff in Tanzania's higher learning institutions. It identified specific skills related to accounting and finance, procurement and logistics management, human resource management, marketing and public relations, teacher education, ICT, and business laws. The study also highlighted organizations important for developing practical skills aligned with the specialization areas of academic staff. The selection of these organizations was based on the programmes taught and the primary functions of the organizations to be attached. Additionally, the research outlined policy, economic, institutional, and managerial strategies for effective and successful industrial attachments. Based on these results, the study therefore concludes that academic staff as the engine and steering wheel for students' skill development; their lack of practical skills results in primarily theoretical teaching, negatively impacts employability, workforce development, and sustainable growth. Since academic staff are aware of the practical skills they lack and the organizations suitable for attachments, it is now essential to develop effective strategies for successful industrial attachment programs. Equipping academic staff with relevant practical skills will enable them to better plan, teach, assess, and review curricula with practical skills for employability.

5.2 Recommendation

The study has found the need and importance of industrial attachment to academic staff, since the programme has cost implications; a cost-sharing approach between training institutions and employers, given the mutual benefits, is recommended. Securing an industrial attachment organization requires signing memoranda of understanding with employing organizations for industrial attachment programmes. For academic staff to cope with the working environment in the hosting organizations, capacity-building for academic staff is essential. Moreover, ongoing assessment, monitoring, and evaluation are necessary to achieve the intended goals. Since the Higher Education for Economic Transformation (HEET) project is currently implemented in Tanzania to foster graduates' employability and their contribution to economic growth, higher learning institutions should prioritize industrial attachment for academic staff to promote the HEET goals and objectives. Future research should aim to develop a measurement scale for practical skills gained through industrial attachments among academic staff.

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