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Industry* Participation in Curriculum Development and in the Preparation and Implementation of Study Programs at Higher Learning Institutions in East Africa

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Abstract

The core mission of higher learning institutions is to produce graduates having desired skills to contribute to the socio-economic development of their countries. However, in the East Africa, the industry is not satisfied with the quality of graduates from the higher learning insti-

* Institutions of non-agricultural material production (PWN online encyclopedia, 10.02.2025).

tutions. A similar problem occurs in other parts of the world, including Central and Eastern Europe. The problem under investigation therefore is to establish whether those institutions in East Africa involve the industry in curriculum development and delivery. Study aimed at investigating the ways in which higher learning institutions collaborated with industry to ensure that the students get relevant skills aligned to the needs of the labour market. Quantitative data was collected through an online questionnaire among 350 academic middle level managers in 35 universities from 7 countries of the East African community. Criteria for selecting the research sample: random selecting universities. The East African Community countries (Burundi, Democratic Republic of Congo, Kenya, Rwanda, South Sudan, Uganda, Tanzania). Somalia was not included in the study. The study revealed that higher learning institutions in the East African Community had links with industry but this was mostly limited to written agreements but with few concrete actions. Respondents (31%) claimed that the industry was involved in curriculum development. Higher learning institutions should enhance practical partnerships with industry by establishing formal mechanisms like offices in charge of linkage with industry and regular fora. These institutions should particularly involve industry in all stages of curriculum development and in activities of curriculum delivery.

Keywords: universities, higher learning institutions, industry, curriculum development, curriculum delivery.

Introduction

Higher education has gone from an elite to a mass model of education in recent years. The massification of studies significantly changes expectations regarding the role of universities in the economy and society. It also creates new challenges and problems on the labor market. The most important problem is the adjustment of Higher Learning Institution (HLI)¹ education to the needs of the economy. We are dealing with this problem in various regions of the world, including East Africa. The problem of competence mismatch is important because its consequences are severe for both the individual and the company and the economy. Competence mismatch affects job satisfaction and employee remuneration. Employees whose skills exceed the level of difficulty of their professional duties feel frustrated, lose motivation to work, and are less effective. The lack of balance on the labor market can also lead to increased employee turnover and reduced company productivity. The prob-

¹ The abbreviation includes Universities (higher education institutions).

lem is not, therefore, too many university graduates, but rather the issue of skills that new employees lack despite having a higher education.

Production of skilled labour force matching the needs of industry is the major goal of every HLI. To that end, HLIs must closely work with industry not only in the design of academic programmes but also throughout the studies. Governments worldwide recognize the importance of industry-university linkages and provide support in various forms like tax reduction for industries engaged in research and development in collaboration with HLIs (Martin, 2000, pp. 137–147). For example, one of the major goals of the vision of African Union is to develop “well educated citizens and skills underpinned by science, technology and innovation” (The African Union Commission, 2015, p. 15). This goal of developing a skilled as a strategy for national development has been embraced by all the East African countries. The skilled that HLIs train should have skills aligned to the needs of the industry.

Martin reports that relations between universities and industries have been established since the early nineties. However, he notes that, in many cases, the relations are not formally established while “one of the crucial success factors in the management of university-industry linkages is the availability of an institutional strategy for the development of such relations” (Martin, 2000, p. 35). The following areas of integration in linkages between HLIs and industry have been identified: teaching and research activities, consultancy, curriculum development, jointly organized meetings, conferences, seminars, joint publications, joint exhibitions and fairs (Anato & Marisennayya, 2021). Two ways have been identified in which HLIs link with industry: the informal which is based on initiatives of individual staff members and the formal which is based on formal (Nylander et al., 2014).

The crucial field for collaboration between industry and HLIs is curriculum development (Barnett, 2011; Tessema & Abejehu, 2017). Patel highlights the many benefits that can result from relationships between industry and universities including but not limited to providing value and skills based education, motivating students for innovation, creating employable students among others (Patel, 2019).

The importance of cooperation between HLIs and industry in the process of curriculum development is stressed by (Matkovic et al., 2014). This cooperation enables educational institutions to get relevant learning outcomes, en-

hanced course contents, programmers well aligned to the needs of industry, and to enrich students' learning experiences (Matkovic et al., 2014). The following activities of partnership are suggested between university and industry: organizing workshops, conferences and symposia, participation of experts from industry in curriculum development, professional consultancy by the faculty to industry; lectures on industrial practices, trends and experiences by industry executives, and joint research programmes (Menezes & Pinto, 2016).

In East Africa, like in other regions of Africa, the linkage between HLIs and industry faces a number of hurdles. Anato and Marisennayya make a long list of impediments that hinder the development of university-industry linkage: limited budget to conduct research, staff issues, lack of strategies to facilitate implementation of enacted policies, lack of dedication to implement policies, the cultural divide between universities and industries, the inexperience of universities to build linkages with industry, immaturity of industries, shortage of important facilities such as laboratories, science parks, technology incubation centres, and testing facilities (Anato & Marisennayya, 2021). To these challenges, Assefa adds a huge number of students which gives no room to academic staff to engage in other activities except teaching and lack of confidence in universities' capacity to produce anything valuable for industries (Assefa, 2016).

In East Africa, the industry is not satisfied with the quality of graduates from HLIs in terms of acquired skills. In a study on graduates' employability skills in East Africa found that "only 10% of respondents identified graduates to be ready for employment, whereas an equal proportion of respondents said they were not" (Guàrdia et al., 2021). The problem of mismatch of graduates' skills and needs of the industry is largely attributed to inadequate collaboration between HLIs and industry. The same problem had been identified by Inter-University Council for East Africa (IUCEA) in the Study Establishing the Status of Higher Education Qualifications Systems and their Contributions to Human Resources Development in East Africa carried out in 2014. The discord between skills and knowledge imparted to students by HLIs and the actual needs of the industry was also reported by Higher Education Republic of Rwanda in a Tracer Study of Graduates from Higher Learning Institutions and Employers' Satisfaction of Graduates' Competences in Rwanda (RHEC, 2015)

Considering, the problem described in the previous paragraphs, this research aims to investigate the ways in which HLIs collaborate with industry to ensure that the students get relevant skills aligned to the needs of the labour market.

This study was guided by the following research questions:

- a) How do HLIs collaborate with industry?
- b) What mechanisms do HLIs use to interact with industry?
- c) To what extent is industry involved in curriculum development and delivery in HLIs?

Materials and methods

Research design

This research used a survey descriptive design. This design was found best suited to address the research questions that this study wished to answer. Quantitative data was collected among university academic middle level managers, namely deans of faculties, heads of department, directors of quality assurance and officers responsible for career guidance in the seven states of East African Community with the use of an online questionnaire.

Sample size and sampling procedure

Five universities were targeted in each countries of East African Community, making a total of 35 universities involved in this study. Ten academic managers in each university were involved resulting into 350 respondents.

Purposive sampling was used to select the respondents. This method was chosen because of limited means to reach the respondents. Online survey was used and the respondents.

Criteria for selecting the research sample

Random selecting universities. The East African Community countries (Republic of Burundi, Democratic Republic of Congo, Republic of Kenya, Re-

public of Rwanda, Republic of South Sudan, Republic of Uganda and United Republic of Tanzania). Somalia not included in the study. The Federal Republic of Somalia was admitted into the EAC bloc on 24th November, 2023 and became a full member on 4th March, 2024.

Data collection and Analysis

An online questionnaire was used to collect data on the following aspects: status of collaboration between HLIs and industry; mechanisms used by HLIs to interact with industry, and involvement of industries in curriculum development and delivery.

Results

Collaboration between HLIs and industry

With regard to collaboration between HLIs and industry, the researchers asked the respondents whether they were aware of collaboration between their institutions and industry. Almost all the respondents (96%) gave a positive answer as it is shown in Table 1. This proved that the universities in general collaborated with the industry.

Table 1. Existence of collaboration between HLIs and Industry

Category	Number	%
Yes	337	96
No	13	4
Total	350	100

Source: Data computed by the authors from own data.

The data in Table 1 reveal that HLIs have established collaboration with industry. The ways the HLIs interacted with the industry were also investigated. Basing on literature review, the researchers identified 5 common ways of interaction between HLIs and industries and enquired whether the univer-

sities in East African Community used them. As it is presented in Table 2, the majority of the respondents (75%) recognized that there were formal agreements between their institutions and industry.

Table 2. Ways of interaction between HLIs and Industry

Way of interaction	HLI	%
Formal agreement with industry	263	75
Informal engagements with industry based on Initiatives of individual staff members	131	37
Office in charge of university-industry linkage	117	33
Regular forums between university and industry	117	33

Source: Data computed by the authors from own data.

According to the data in Table 1 and Table 2, the HLIs in East African Community (96%) have formal links with the industry. However, the links are mostly limited to establishing formal agreements or signing memoranda of understanding (75%). Few HLIs have offices in charge of linkage with industry and regular fora (33%). Initiatives based on individual staff members in HLIs are also limited (37%). Establishing offices in charge of university-industry linkage should be an effective way of materializing the various joint activities but a small number of the respondents (33%) admitted having such offices in their institutions. Furthermore, individual initiatives of the staff are likely to play an important part to enhance collaboration between HLIs and industry.

These findings on interaction between HLIs and industry are in line with the claims of (Outamha & Belhcen, 2020) who concluded that both HLIs and industries recognized the benefits of collaboration but without sufficient communication and opportunities. This means that in many cases, HLIs sign MoUs with industries but these agreements are not followed by concrete actions. The findings of Ibeme in the research carried out in Nigeria further explains the causes of low level of productive interaction between universities and industries (Ibeme, 2020). The factors like insufficiency of qualified researchers, weak research infrastructure and inadequate funding for research explain the low level of university-industry linkage in Africa (Ibeme, 2020).

Mechanisms used by HLIs to get information on performances of graduates

To investigate the mechanisms used by HLIs for getting information on the performances of their graduates working with industry, the respondents were asked whether their institutions had formal mechanisms to that end. The large majority of the respondents (65%) admitted that they did not know of any formal mechanisms to get such information as the data in Table 3 show it.

Table 3. Existence of mechanisms to get information on performances of graduates

Categories	Number	%
Yes	121	35
No	229	65

Source: Data computed by the authors from own data.

Notwithstanding the small number of respondents who claimed that their universities had mechanisms to collect information on the performances of the graduates in industry where they were working (35%), the authors found it useful to analysis mechanisms available in HLIs in order to identify the ones mostly used. Eight mechanisms were identified as formal tools for HLIs to collect information on the performances of their graduates as presented in Table 4.

Table 4. Mechanisms used to get information on the performances of graduates

Mechanisms	Frequency	%
Alumni organization	98	28
Doing a tracer study	94	27
Field visit in industry	56	16
Career guidance centre	49	14

Tabela 4. (continued)

Mechanisms	Frequency	%
Creating databases which help to follow up	37	11
Regular forums with industry	31	9
Regular telephone contacts and information from industry	29	8
Regular contacts through industrial attachment	28	8

Source: Data computed by the authors from own data.

The data in Tables 3 and 4 reveal that few universities (35%) collected information on the performance of their graduates in the labour market. Collecting information on the performance of graduates on the labour market is vital for HLIs, particularly for quality assurance purposes. According to Egesah and Wahome they write that European universities widely use tracer studies to accredit their educational programmes, to establish the link between academic programmes and the labour market and to identify areas for improvement (Egesah & Wahome, 2016).

The findings of this study which reveal a weak practical collaboration between HLIs and industry in East Africa are similar to the ones of Outamha and Belhen who also claimed that university-industry linkages badly needed improvement (Outamha & Belhen, 2020). Similarly, Nylander, Larson and Ola identified boundaries in the collaboration between HLIs and industries (Nylander et al., 2014).

Involvement of Industry in Curriculum Development and Delivery

HLIs need to work hand in hand with industry not only in developing curricula but also in delivering it. However, according to the findings of study, the majority of the respondents (67%) admitted that their universities did not involve the industry in curriculum development as presented in Table 5.

Table 5. Involvement of industry in curriculum development

Categories	Frequency	%
Yes	109	31
No	241	67

Source: Data computed by the authors from own data.

The respondents were asked whether their institutions involved industry in curriculum delivery. The majority (72%) admitted that with exception to industrial attachment which is required by regulatory bodies of higher education in every country, their institutions did not otherwise involve the industry in curriculum delivery. The data on the involvement of industry in curriculum delivery are presented in Table 6.

Table 6. Involvement of industry in curriculum delivery

Categories	Frequency	%
Yes	97	28
No	253	72

Source: Data computed by the authors from own data.

According to the data in Table 5, HLIs rely on academic expertise of academic staff in developing curricula. In the same vein, (Dowelani & Dowelani, 2020) observed that curriculum development in developing countries had so far been mostly the work of academic staff within the HLIs. This practice, however, diverges with the recommendations that curricula of HLIs ought to be aligned to the needs of industry (Manivanna & Suseendran, 2017; Anato & Marisennayya, 2021).

The necessity of involving industry in curriculum development was emphasized by many researchers on the ground that higher education has an obligation to produce graduates meeting the requirements of the labour market (Deborah & Barnett, 2011; Plewa et al., 2015; Matkovic et al., 2014). However,

this study found that many universities in East African Community did not involve the industry in curriculum design (Table 6).

Conclusions

The data collected among 350 academic managers in 35 HLIs in East African Community revealed that HLIs had contacts with industry in various ways including formal agreements, initiatives by individual staff, offices in charge of university-industry linkages and regular forums. However, collaboration between HLIs and industry was mostly limited to establishing formal agreements and industrial attachments for the students.

The existing interaction between HLIs and industry is limited and does not help to address the problem of mismatch between graduates' skills and needs of industry. To ensure that the HLIs send on the labour markets graduates with skills aligned to the needs of industry, the latter should be adequately involved in curriculum development and delivery. However, on the basis of the findings of this research, involvement of industry in curriculum development and delivery is low.

Consistent researches done at different periods of time have shown that industry should be involved in curriculum development and delivery to ensure the quality of education. HLIs should have effective mechanisms for closely working with industry in order to align academic programmes, as well as teaching and learning activities, to the needs of the industry and of the labour market in general.

The analysis conducted for the purposes of this article suggests that competence and qualification mismatch may have significant significance for the course of graduates' professional careers. A qualification mismatch is associated with lower earnings, while a qualification and competence mismatch is associated with a lower assessment of the usefulness of studies. A properly functioning education and training system should lead to a reduction in the level of competence mismatch between graduates' skills and the requirements of the labor market.

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