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UNIVERSITY-INDUSTRY COLLABORATION ON CURRICULUM INNOVATION IN BUSINESS EDUCATION IN PUBLIC UNIVERSITIES IN AKWA IBOM STATE

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ABSTRACT

The purpose of this study was to assess the university-industry collaboration on curriculum innovation in business education in public universities in Akwa Ibom State, Nigeria. Three research questions and three hypotheses guided the study. The structured questionnaire, tagged: University-Industry Collaboration on Curriculum Innovation in Business Education (UICCIBE) designed by the researcher after the modified Likert Scale model and which had its reliability index established at 0.89%. Mean and standard deviation were used for answering the research questions while z-test was used in testing the hypotheses. The major findings that emerged from the study are: university management staff from both Federal and State universities have collaboration between academia and industry, there is a dynamic force that shapes the future of education and contributes to the economic development of the region. The success of this collaboration depends on ongoing assessment, government backing, and a long-term strategy that promotes creativity and entrepreneurial endeavour inside the educational system. In the end, Akwa Ibom State's economic ecosystem will be energized, the workforce will be empowered, and students will be given more opportunities.

Keywords: Curriculum, Innovation, University-Industry, Collaboration, Economic Development, Public Universities.

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INTRODUCTION

Partnership is fundamentally a forward-thinking approach to education that aims to integrate academic theory with real-world application and academic theory with the dynamic realities of business (Badgett, 2016).

Akwa Ibom State lies in the southernmost part of Nigeria along the coast and has a thriving economy fueled by a number of industries, including manufacturing, tourism, agriculture, and services. The state's economy is growing and diversifying, and with it, so are the demands for a workforce that is highly trained and flexible. As a region that strives for economic growth and development, Akwa Ibom State stands to gain from the collaboration between its public universities and regional businesses in the area of Business Education. Nevertheless, despite the apparent benefits the landscape of university-industry curricular collaboration. Public universities, which serve as centers for the diffusion of information, must heed this to the challenge of turning out graduates who not only have the necessary theoretical knowledge but also the necessary practical abilities to satisfy the demands of the workplace (Sharipov et al., 2020).

This is to close the gap between the classroom and the boardroom through strategic collaborations, curriculum improvements, faculty development, and a dedication to hands-on experience. This study aims at shedding light on the collaboration's transformative potential for both students and the larger economic ecology by studying its essential elements and goals. Hietajärvi and Aaltonen (2018) emphasized the multifarious nature of collaborative projects, which includes not only the institutions and industry but additionally government players who are essential to creating and maintaining such alliances. The essence of the alliance is to produce students from the higher education with the requisite skills for industries employment.

The dynamics of higher education have changed significantly in recent years, especially in the area of business education (Cheung, 2016). A growing emphasis on curriculum innovation is being driven by the necessity to provide graduates with the skills and knowledge required by the dynamic corporate environment. In this setting, collaboration between academia and business have shown promise to be a way to improve the value and efficacy of business education programs. Moreover, higher education expansion increases a firm's innovative human capital in terms of the number of educated employees and inventors (Alshare & Sewailem, 2018).

Curriculum innovation is a dynamic process that involves the redesign, development, and improvement of educational curricula to meet the evolving needs of learners, society, and the workforce. Seechaliao (2017) suggested that curriculum innovation is not limited to changes in course content or textbooks; it encompasses a broader transformation of the entire educational experience. It involves rethinking what and how students learn, the methods of instruction, and the assessment processes. According Hero and Lindfors (2019), curriculum innovation aims to promote relevance by ensuring that what students learn aligns with real-world needs, including skills and knowledge demanded by the job market. It also aim at enhancing engagement by creating learning experiences that are stimulating, interactive, and student-centered, fostering a deeper understanding of the subject matter (Seechaliao, 2017).

Curriculum innovation seeks to encourage critical thinking by developing learners' abilities to analyze, synthesize, and evaluate information, preparing them for problem-solving in diverse contexts. This article explores university-industry collaboration on curriculum innovation in business education in public universities in Akwa Ibom State.

University-industry collaboration often referred to as university-industry partnerships or university-industry engagement, represents a critical intersection between academia and the business world. Hillerbrand and Werker (2019) added that collaboration involves universities or research institutions working closely with businesses and industries to achieve shared goals, such as research advancement, innovation, talent development, and economic growth. It is a

multifaceted relationship that can take various forms and has significant implications for both the academic and business communities.

Objectives of the Study

The aim of this study is to assess the university-industry collaboration in curriculum innovation for business education in public universities in Akwa Ibom State. Specifically, the study seeks to:

- Evaluate the existing business education curriculum in public universities in Akwa Ibom State.
- Identify knowledge deficiencies in graduates that hinder their employability in local business community.
- Investigate international best practices in university-industry collaboration for curriculum development in business education.

Research Questions

The following research questions guided the study:

- Is there an alignment of current business education curriculum with local industries in public universities in Akwa Ibom State?
- What knowledge deficiencies exist among business education graduates that hinder their employability in local industries in Akwa Ibom State?
- What are the international best practices of university-industry collaboration for curriculum development in business education in Akwa Ibom State?

Research Hypotheses

The under listed hypotheses were raised to guide the study at 0.05 level of significance:

- There is no significant difference between the mean score of management staff of universities and management staff of industries on alignment of current business education curriculum with local industries in public universities in Akwa Ibom State.
- There is no significant difference between the mean score of management staff of universities and management staff of industries on knowledge deficiencies exist among business education graduates that hinder their employability with local industries in public universities in Akwa Ibom State.
- There is no significant difference between the mean score of management staff of universities and management staff of industries on international best practices of university-industry collaboration for curriculum development in business education in public universities in Akwa Ibom State.

LITERATURE REVIEW

University-industry collaboration in curriculum innovation is a dynamic and evolving area of research and practice within the broader context of higher education. In the specific context of

Akwa Ibom State in Nigeria, where public universities are striving to align business education with the needs of local industries, the literature review provides valuable insights into the theoretical foundations, best practices, challenges, and potential benefits of such collaborations. This review of the literature aims to contextualize the study and build a comprehensive understanding of the subject matter.

University-industry collaboration in any nation's higher education system cannot be overemphasized. There are some characteristics which make the quality of University-industry collaboration to be at International best practice (Ibijola, 2015).

Key Characteristics of University-Industry Collaboration

- **Knowledge Transfer:** Universities possess expertise, research capabilities, and access to the latest knowledge. Industry partners can benefit from this knowledge transfer by tapping into academic research, faculty expertise, and cutting-edge technology. The results provide evidence that cooperative competency plays a mediating role between transfer mechanisms and knowledge transfer performance (Baek & Sung, 2020).
- **Research and Development:** Collaborations often involve joint research projects where academic researchers and industry experts work together to solve real-world problems, develop new technologies, or create innovative products and services (Kunttu, 2017).
- **Talent Development:** Universities play a crucial role in educating and training the future workforce. Collaborations with industries can help ensure that educational programs align with industry needs, producing graduates who are job-ready and possess the required skills. According to Anderson and Rechards-Shubik (2021), it is pointed out that technical universities should deepen the integration between the industry and education for innovation and entrepreneurship in order to mitigate the imbalance between the supply side of the higher education talent training and the demand side of industrial development.
- **Innovation and Entrepreneurship:** Universities can foster a culture of innovation and entrepreneurship, encouraging students and faculty to explore new ideas and start businesses. Industry partnerships can provide funding, mentorship, and resources for entrepreneurial initiatives

Benefits of University-Industry Collaboration

It is important to note that the university-industry collaboration is of a great benefit to the universities and industries if the key players are well collaborated because:

- Collaborations can lead to groundbreaking research and technological advancements, benefiting both academia and industry. Joint research projects often have access to greater resources and expertise (Ibrahim & Dandago, 2013);
- Industries can gain access to a pool of skilled graduates who are well-prepared for the workforce, reducing the gap between education and employment;
- Collaborations can stimulate economic development by fostering innovation, attracting investments, and creating job opportunities;
- Academic research can find practical applications in industry, leading to the development of new products, services, and solutions;

- Collaboration allows universities to incorporate industry insights into curriculum design, ensuring that graduates possess skills and knowledge relevant to local industries (D'Este & Perkmann, 2011);
- Graduates of programs with strong industry ties are often more employable due to their exposure to real-world challenges and practical experiences (Greitzer et al., 2010).
- Collaborations stimulate research and innovation, leading to the development of new technologies and solutions (Perkmann et al., 2013).
- Successful collaborations contribute to regional economic growth by fostering entrepreneurship and attracting investments (D'Este & Perkmann, 2011)

Theoretical Framework: The Triple Helix Model

The Triple Helix Model, proposed by Etzkowitz and Leydesdorff in the 1990s, offers a valuable theoretical framework for understanding the complex interactions and relationships among three key actors in innovation and knowledge-based economies: universities (academia), industries (businesses), and government. This model suggested that these three entities are intertwined and interdependent in the process of generating and disseminating knowledge, fostering innovation, and promoting economic growth.

- In the Triple Helix Model, universities are recognized as key knowledge producers. They serve as centers for research, education, and the generation of new ideas. Key attributes of the university include:
 - Research and Knowledge Generation: Universities conduct research that advances knowledge and addresses societal challenges.
 - Education and Talent Development: They educate and train the future workforce, equipping individuals with skills and expertise.
 - Knowledge Transfer: Universities disseminate knowledge through publications, conferences, and collaborations.
- The business sector represents the component responsible for transforming knowledge and research into tangible products, services, and economic value. Key attributes of the industry component include:
 - Innovation and Commercialization: Industries apply knowledge to create innovative products, processes, and technologies.
 - Economic Growth: They contribute to economic development through job creation, wealth generation, and market competitiveness.
 - Market Dynamics: Industries identify market demands and consumer preferences that influence research and development efforts.

Implications and Dynamics of the Triple Helix Model

- **Mode of Interaction:** The Triple Helix Model posits that the interaction among the three components occurs through various modes, including cooperation, competition, and negotiation. Universities, industries, and government bodies collaborate to leverage complementary strengths while competing for resources and recognition.
- **Knowledge Spillovers:** The model recognizes the importance of knowledge spillovers, where knowledge generated in one sector (e.g., academia) benefits other sectors (e.g., industry). This spillover effect drives innovation and economic growth.
- **Innovation Ecosystem:** The Triple Helix Model contributes to the development of innovation ecosystems, where universities, industries, and government agencies collaborate within a region or cluster to promote innovation, entrepreneurship, and economic vitality (Schiuma & Carlucci, 2018).
- **Triple Helix Indicators:** Researchers and policymakers use indicators such as research collaborations, patent filings, and funding allocations to assess the strength and health of the Triple Helix interactions within a particular region or country.
- **Global Perspective:** The model is applicable at various scales, from local and regional innovation systems to the global stage, highlighting the importance of cross-border collaborations and international knowledge flows.

Resource Dependency Theory

The Components of Resource Dependency Theory

Organizational Interdependence emphasizes the interdependence of organizations with their external environment, including other organizations, institutions, and stakeholders. Organizations rely on external sources for resources such as capital, information, technology, and human resources. The theory posits that resources are limited and unequally distributed in the external environment. Organizations often face scarcity and competition for these resources, which motivates them to form relationships with external entities to secure access.

Principles and Implications of Resource Dependency Theory

Resource Dependency Theory (RDT) is a prominent theoretical framework in the field of organizational and strategic management. It was developed to understand how organizations manage their relationships with external entities to secure essential resources. RDT posits that organizations are interdependent with their external environment, and their survival and success are contingent on effectively managing these dependencies. In this framework, organizations are viewed as resource-seeking entities, and their behavior is shaped by the need to access and control critical resources. Below, we outline the key components and principles of Resource

Organizations engage in resource-seeking behaviors to reduce uncertainty and vulnerability. They form strategic alliances, partnerships, and networks to access and control essential resources. The organizations also strive to reduce their dependency on specific resource providers. This may involve diversifying sources, vertical integration, or seeking alternative suppliers to mitigate risk. The implication of this theory is that organizations develop resource management strategies to maintain or increase control over critical resources. This includes

negotiation, bargaining, and contractual agreements with resource providers. The theory therefore highlights the power dynamics that emerge from resource dependencies. Organizations with control over critical resources may exert influence and leverage their position in negotiations.

METHODOLOGY

A descriptive design was adopted. The population comprised 34 respondents. These comprised 14 University management staff, seven from University of Uyo and seven from Akwa Ibom State University (AKSU) and 20 management staff of industries in Akwa Ibom State. A purposive sampling technique was used in selecting the study sample of 34. The sample size consists of the total population because of the smallness of the population. The research questions were answered using Mean and Standard Deviation and hypotheses tested using z-test at 0.05 significance level. The instrument for gathering data was a modified four (4) point Likert scale. Cronbach Alpha was used to determine the reliability at 0.89.

RESULT

Research Question 1: Is there an alignment of current business education curriculum with local industries in public universities in Akwa Ibom State?

Table 1: Mean scores, standard deviation of management staff of universities and management staff of industries on alignment of current business education curriculum with local industries in public universities in Akwa Ibom State

S/N	Alignment of current business education curriculum	Management Staff				Remark
		Universities (14)		Industries (20)		
		\bar{X}	SD	\bar{X}	SD	
1	Integration of Technology	2.80	1.07	2.61	1.15	Agree
2	Emphasis on Entrepreneurship	3.05	1.20	3.40	0.78	Agree
3	Research Committees	2.50	0.65	2.53	0.68	Agree
4	Corporate Social Responsibility	3.14	1.10	2.95	1.05	Agree
5	Soft Skills Development	2.80	0.75	3.20	1.14	Agree
	Mean summation / $\sum \bar{X}$ / $\sum SD$	14.29	4.77	14.69	4.80	Agree
	Aggregate \bar{X} / SD	2.86	0.95	2.94	0.96	Agree

Table 1 represents the mean scores and standard deviation management staff of universities and management staff of industries on alignment of current business education curriculum with local industries in public universities in Akwa Ibom State. Both management staff of universities and management staff of industries agreed to items 1 to 5 of the alignment of current business education curriculum with local industries in public universities in Akwa Ibom State. This is because, the mean scores are all above the criterion mean score of 2.5. This is an indication that there are alignments of current business education curriculum with local industries in public universities in Akwa Ibom State.

Research Question 2: What knowledge deficiencies exist among business education graduates that hinder their employability in local industries in Akwa Ibom State?

Table 2: Mean and standard deviation of management staff of universities and management staff of industries on knowledge deficiencies exist among business education graduates that hinder their employability in local industries in Akwa Ibom State

S/N	Knowledge Deficiencies Among Business Education Graduates	Management Staff				Remark
		Universities (14)		Industries (20)		
		\bar{X}	SD	\bar{X}	SD	
6	Curriculum Review and Update	3.25	1.17	2.50	1.12	Agree
7	Internships and Work Placements	3.18	1.12	3.17	1.09	Agree
8	Professional Development Workshops	3.20	1.18	3.12	1.14	Agree
9	Industry-Relevant Projects	3.16	1.13	2.95	1.05	Agree
10	Continuous Feedback Loop	2.61	0.83	3.16	1.13	Agree
	Mean summation / $\sum \bar{X}$ / $\sum SD$	15.40	5.43	14.90	5.53	Agree
	Aggregate \bar{X} / SD	3.08	1.07	2.98	1.11	Agree

Table 2 represents the mean scores and standard deviation of management staff of universities and management staff of industries on the knowledge deficiencies exist among business education graduates that hinder their employability in local industries in Akwa Ibom State. The table shows that both management staff of universities and management staff of industries agreed that there is knowledge deficiencies exist among business education graduates. All the mean scores are above the criterion mean of 2.50. The analysis showed that the variables under knowledge deficiencies among business education graduates hinder their employability in local industries in Akwa Ibom State.

Research Question 3: What are the international best practices of university-industry collaboration for curriculum development in business education in Akwa Ibom State?

Table 3: Mean and standard deviation of management staff of universities and management staff of industries on the international best practices of university-industry collaboration for curriculum development in business education in Akwa Ibom State

S/N	International Best Practices of University-Industry Collaboration	Management Staff				Remark
		Universities (14)		Industries (20)		
		\bar{X}	SD	\bar{X}	SD	
11	Lack of funds	3.49	1.26	3.28	1.20	Agree
12	Negative teachers' perception of the programmes	3.28	1.18	3.25	1.19	Agree
13	Lack of incentives to teachers	3.24	1.17	3.04	0.93	Agree
14	Unproductive time allocation	3.18	1.16	3.08	0.95	Agree
15	Lack of administrative support	3.51	1.39	3.50	0.98	Agree
	Mean summation / $\sum \bar{X}$ / $\sum SD$	16.7	6.16	16.15	5.25	Agree
	Aggregate \bar{X} / SD	3.34	1.23	3.23	1.05	Agree

Table 3 shows the mean scores and standard deviation of management staff of universities and management staff of industries on the international best practices of university-industry collaboration for curriculum development in business education in Akwa Ibom State.

Both management staff of universities and management staff of industries agreed to all the variables under the international best practices of university-industry collaboration for curriculum development in business education. This is because the mean scores of all the variables are above the criterion mean score of 2.50. This gives an indication that there should be international best practices of university-industry collaboration for curriculum development in business education.

Test of Hypotheses

Hypothesis 1: There is no significant difference between the mean score of management staff of universities and management staff of industries on alignment of current business education curriculum with local industries in public universities in Akwa Ibom State.

Table 4: z-test of difference between the mean score of management staff of universities and management staff of industries on alignment of current business education curriculum with local industries in public universities in Akwa Ibom State

Respondents	N	$\sum\bar{X}$	$\sum SD$	df	Z-cal.	Z-critical	Decision
Universities	14	14.29	4.77	32	0.69	1.96	Accepted
Industries	20	14.69	4.80				

Table 4 shows z-test analysis of differences between the mean scores of management staff of universities and management staff of industries on alignment of current business education curriculum with local industries in public universities in Akwa Ibom State

The result shows that at 32 degree of freedom, the z-calculated yielded 0.69 at 0.05 alpha level of significant. This value is less than the z-critical of 1.960, the researcher therefore accepted the null hypothesis, and this shows that there is no significant difference between the mean scores of management staff of universities and management staff of industries on alignment of current business education curriculum with local industries in public universities in Akwa Ibom State.

Hypothesis 2: There is no significant difference between the mean score of management staff of universities and management staff of industries on knowledge deficiencies exists among business education graduates that hinder their employability with local industries in public universities in Akwa Ibom State

Table 5: z-test of difference between the mean scores of management staff of universities and management staff of industries on knowledge deficiencies exist among business education graduates that hinder their employability with local industries in public universities in Akwa Ibom State

Respondents	N	$\sum\bar{X}$	$\sum SD$	df	Z-cal.	Z-critical	Decision
Universities	14	15.40	5.43	32	0.26	1.96	Accepted
Industries	20	14.90	5.53				

Table 5 shows z-test analysis of differences between the mean scores of management staff of universities and management staff of industries on knowledge deficiencies exist among business education graduates that hinder their employability with local industries in public universities in Akwa Ibom State. The result shows that at 32 degree of freedom, the z-calculated gave 0.26 at 0.05 alpha level of significant. This z-calculated is less than the z-critical value of 1.960 which indicated that the researcher accepts the null hypothesis, therefore there is no significant difference between the mean scores of management staff of universities and management staff of industries on knowledge deficiencies exist among business education graduates that hinder their employability with local industries in public universities in Akwa Ibom State.

Hypothesis 3: There is no significant difference between the mean score of management staff of universities and management staff of industries on international best practices of university-industry collaboration for curriculum development in business education in public universities in Akwa Ibom State.

Table 6: z-test of difference between the mean scores of management staff of universities and management staff of industries on international best practices of university-industry collaboration for curriculum development in business education in public universities in Akwa Ibom State

Respondents	N	$\sum\bar{X}$	$\sum SD$	df	Z-cal.	Z-critical	Decision
Universities	14	16.70	6.16	32	1.12	1.96	Accepted
Industries	20	16.15	5.25				

Table 6 shows the z-test of difference between the mean scores of management staff of universities and management staff of industries on international best practices of university-industry collaboration for curriculum development in business education in public universities in Akwa Ibom State. The results revealed that at 32 degree of freedom, the z-calculated yielded 1.12 at 0.05 alpha significant level. This shows that the z-calculated is less than z-critical value of 1.960. This made the researcher to accepted the null hypothesis, therefore there is no significant difference between the mean scores management staff of universities and management staff of industries on international best practices of university-industry collaboration for curriculum development in business education in public universities in Akwa Ibom State.

DISCUSSION

At the university level, Business Education is offered in the faculty of education. The goal of the programme is to make an optimum contribution to national development and preparation of vocational business teachers. It also prepares professional business teachers' education curriculum to reflect our national requirements. Industry cooperation, Business Education and preparation of office workers in Nigeria has not been given adequate attention unlike what is obtainable in other clines such as USA, Great Britain and Germany just to mention a few. Igboke (2000) noted that the teaching of business subjects especially the skilled business subjects in Nigeria schools and colleges is primarily limited to classroom instructions using a few obsolete business machines and equipment with the absent of on-the-job or industrial experience in any established business or industrial firms. To worsen the situation, the industrial establishments are

not quite often disposing to accept the students or trainees on student Industrial Work Experience Scheme (SIWES). This author on many occasions had to go to offices, super-markets and banks soliciting for local firms to accept our undergraduates for industrial attachments with or without any stipends on the part of industrial firms (Borg & Scott-Young, 2020). One could observe that the preparation of office worker-in-training should be joint effort of the training institutions and immediate business community.

Cooperative industrial education is a structured method of combining classroom-based education with practical work experience (Wikipedia, 2014). The Co-op program which is predicated on an agreement developed among employers, students, and the school staff provides supervised workplace employment opportunities and learning experiences which facilitate school-to-work transition, service learning, and experiential learning initiatives all of which contribute tremendously to the students' education and employability. Osuala (2009) considered cooperative occupational education to be an instructional plan which combines learning experiences gained through regularly scheduled supervised employment in the community and vocational oriented in school instruction.

The author noted that the employing community serves as a laboratory where students have an opportunity to apply the principles they have learned in the school in the changing world of work. The author further added that cooperative occupational education is a general term used to describe various types of cooperative plan programmes specifically designed to prepare youths for occupations in proportion to the distribution of employment and career opportunities. Based on these definitions, cooperative vocational education, is a cooperative occupational programme tailored towards meeting the objectives of vocational business and office education which include enabling youth: To have the skills and competencies required for the performance of basic business jobs; To apply the various business concepts acquired in class in the real life situation; To recognize and demonstrate their responsibilities and rights as consumers and to provide students with some business skills to enable them play their roles as productive participants members of society especially in our free enterprise economy.

CONCLUSION

In conclusion, the study underscored the vital importance of university-industry collaboration in advancing curriculum innovation in business education within public universities in Akwa Ibom State. Collaboration between academia and industry is not merely a pedagogical strategy; it is a dynamic force that shapes the future of education and contributes to the economic development of the region. Embracing the challenges and opportunities inherent in collaboration, stakeholders can collectively work towards an educational ecosystem that empowers students, fosters innovation, and fortifies the bonds between academia and industry. Through sustained and strategic collaboration, Akwa Ibom State can position itself at the forefront of business education, driving progress and prosperity for its students, industries, and society as a whole.

Recommendations

Based on the findings and insights gained from the study on university-industry collaboration in curriculum innovation for business education in public universities in Akwa Ibom State, the following recommendations are put forth to foster and optimize collaboration, thereby improving

the quality of business education and preparing students for the dynamic challenges of the contemporary business environment:

- Public universities, industry partners, and government agencies should collaborate to establish clear and comprehensive guidelines for collaboration. These guidelines should define roles, responsibilities, expectations, and the sharing of resources.
- Organize workshops and training sessions for university and industry personnel to enhance their understanding of collaboration processes and best practices. This can help mitigate misunderstandings and enhance the effectiveness of partnerships.
- The government should allocate dedicated funding for collaborative projects between universities and industries. These funds can support research initiatives, internships, curriculum development, and other collaborative activities.
- Tax Incentives should serve as a motivation for industry participation in education initiatives.
- Industry Advisory Boards should provide real-time industry insights, ensuring curricula remain up-to-date and aligned with industry needs.

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