

FOSTERING ECONOMIC DEVELOPMENT THROUGH INTERDISCIPLINARY EDUCATION IN NIGERIA: CHALLENGES AND PROSPECTS

BY

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Abstract

Education is regarded as the key driver of economic development. Nigeria's economic development has suffered a setback due to mono-disciplinary approach characterised by skill gaps and inadequate innovation. Interdisciplinary education is the type of educational system that incorporate multiple academic disciplines or fields of study to provide comprehensive understanding and foster critical thinking and problem solving skills. Economic development which is considered as a process by which wealth is created for the benefits of the society is anchored on education. This paper examines the challenges and prospects of fostering economic development through interdisciplinary education in Nigeria. It also identified the benefits and discussed challenges and prospects of interdisciplinary education. It was concluded that interdisciplinary education should be given attention for the purpose of economic development. Policy suggestions that will drive the conclusion were given.

Keywords: Interdisciplinary education, Economic Development, Prospect challenges

Introduction

Education is noted as a crucial ingredient for the development of a nation. It is against this backdrop, that education is internationally recognized as an essential component of national development strategies. This also accounts for nation's commitment to education policies for its citizens. By harnessing education, human resources can be transformed into human capital, acquiring vital knowledge, skills, and competencies that drive economic development and reduce disparities. Endowed with these attributes, individuals can optimize their potentials, fuelling economic growth, reducing poverty, and promoting sustainable development, (Emiediegwu & Monye-Emma, 2016). The ultimate purpose of education is to activate or equip an individual to excel in a chosen career or profession in order to transform his/her environment. Furthermore, education empowers learners to transcend current limitations, securing a brighter equitable and inclusive future, where prosperity and social justice are realized in practice (Didham, et al 2024). An exhaustive examination of trends in educational system in the country shows challenges that are multiple capable of compromising the roles of education as catalyst for national development. Some of these challenges as highlighted by Irabor and Onwudinjo (2019), include, inadequate curriculum content, poor educational infrastructures, moribund and inadequate classrooms, poor funding, dearth of qualified teachers, among others. Irabor and Onwudinjo (2019), lamented the decline of educational system in Nigeria which he described as moribund institution and identified the nature of educational system as being responsible. Education's structure and function have been reduced to a certificate- oriented approach, where paper qualifications are considered at expense of meaningful knowledge and skill acquisition. (Irabor & Onwudinjo, 2019).

As important as education is to any nation, it is becoming clearer that Nigeria's, educational system is not producing quality graduates that are equipped with cutting edge knowledge capable of competing favourably in complex economic pattern of the world. This is clearly manifested as many graduates are unemployable without niche in the labour market with far reaching effects on economic development of the nation. Ojiako and Nwode (2022), pointed out that university education is be ridden with multifarious challenges including gradual degradation of academic integrity and employee performance. Ojiako and Nwode (2022), declares that there is urgent need for educational

system to confront the challenges of our time. For the purposes of mitigating these challenges, interdisciplinary education rooted in academic integrity capable of addressing issues of university employee performance is suggested (Ojiako & Nwode, 2022). Furthermore, academic integrity and employee performance challenges can be mitigated by emphasizing honest collaboration and team collaboration respectively via interdisciplinary education. Educational system of any society is more or less an elaborate mechanism designed to build in individuals' skills or attitude that are considered to be useful and desirable in the society. The society is therefore a prime stakeholder in the formulation of curriculum which includes aims and objectives, contents, and methodology according to its needs. In a related development, education acts as a transformative enterprise fostering the development of values, attitude and skills in members of the society (Adelowo, 2010).

Presently, the country needs citizens with necessary skills and competence to foster development. Literature is replete with findings that, without investing in human capital the hope of economic development will be a mirage (Emediegwu & Monye-Emma 2016). There is a strong need therefore, for a well-structured educational system that can develop a skilled workforce capable of making a substantial impact on the country's economic growth and development (Asiedu, 2014, Benos & Zotus, 2014). The current crises of unemployment associated with knowledge-based curriculum, especially at the higher education has made it difficult for professionals to respond to society's increasingly complex problems. Scholars agreed that, since the contemporary society is faced with multiple issues, techniques for tackling them should also be interdisciplinary and multifaceted (Nkereuwem & Robert, 2023). Reddy (2023), argued that classroom curriculum with single discipline educational approach is inadequate in equipping students with requisite knowledge, skill and competencies needed to compete in a rapid evolving complex world of science and technology. It is imperative then, to advocate for educational system with interdisciplinary outlook capable of producing graduates with both knowledge and skills that can compete effectively in an evolving technologically complex society. (Oalrenwaju, 2023).

Kuassen (2018), in his own view pointed out that for the past 20 years, discipline base- education has evolved greatly with focus on interdisciplinary education. There is an increasing interest therefore, on interdisciplinary education globally as the world is faced with complex and multi-dimensional challenges that demand urgent interdisciplinary knowledge-based approach (Jacob 2015). This was corroborated by Akpochofo (2011), stating that the preference of interdisciplinary education grew as a result of the complex nature of the society and our innate curiosity to understand the dynamics of multiple challenges which requires modern approaches. The challenges are so complex that demand an individual who is adequately equipped with knowledge and skills embedded in creative thinking across multiple disciplines to tackle them effectively (Chukwuemeka 2024). Regrettably, education has failed to sustain a culture of academic distinction and integrity within institutions, as demonstrated by the academic accomplishments of graduates (Assefa, et al, 2018). Additionally, is the assumption that education would lead to improved living standards and economic prosperity has not materialized due to a surge in unemployment fuelled by individuals lacking essential skills, (Oghiagbophan, 2015). According to Oghiagbopha (2015), a well-structured educational system, crucial for driving economic growth and development should be vigorously pursued (Benos & Zotou, 2014).

Economic development is considered to be efforts put up to improve the economic well being and quality of life by creating wealth support for the society (Onyekwere 2016). Economic development is a process by which wealth is changed from ones which most people have no enormous resources and choices to ones in which they have more resources and choices (Behrman, 2001) Economic development as a process engenders wealth creation for the benefit of the society. It is rather an economy growth initiative that fosters prosperity and general well-being of the society. Any activity undertaken by society that enhances the creation of healthy economy can be considered under the auspice of economic development. As economic growth is basically a function of wealth creation, educational system that encourages skill acquisition and innovation is considered a best option for the purpose of development. Interdisciplinary education is described as the exploration of relevant topics or themes that brings together or represents the perspectives of multiple disciplines to connect new knowledge and deeper understanding to real world (Olanrewaju, Musa & Tinuke, 2023). It is better described as web of disciplines set to achieve a hybrid faculty

equipped with skills ,competencies, and knowledge for development of the society. Interdisciplinary education is increasingly referenced to as a veritable approach that strengthens education programmes both in quality and relevance (Dioham,et al,2024).

Interdisciplinary initiatives have increasingly emerged in different fields of knowledge and intervention. In fact, societal, environmental, economic, and philosophical challenges are often so complex that it is impossible to fully understand and solve them using a single perspective or knowledge framework (Jacob, 2015). Literature is replete with arguments against and in favour of interdisciplinary education. Critics view interdisciplinary approaches as lacking in novelty, scholarly depth, and methodological rigour. On the other hand, it is argued that to eliminate boundaries and use an interdisciplinary approach it is essential to solve real-world complex problems (Bernini & Woods, 2014). Regardless of the scepticism in some educational environments, the number of supporters of its use in school contexts have been soaring, especially following its introduction in university curricula and research agenda (Chettiparamb,2011; Bernini & Woods, 2014; Jacob 2015 Spelt et al. 2014.). Frodean, (2014), suggested that, the most effective way to deal with complex challenges and problems is to combine already existing bodies of knowledge, instead of producing new. This is in tandem with the propositions of interdisciplinary education that advocates integration of different knowledge from multiple disciplines aimed at problem-solving.

Early instances of interdisciplinary education can be traced back to the curriculum integration concept that was promoted in the 1930s. But interdisciplinary education emerged in the 1970s, with its literature and the development of key definitions. Muraina and Hassan (2022) define interdisciplinary as solving a set of problems whose solution can be achieved only by integrating parts of existing disciplines. All later attempts at defining this concept always came back to the need for the synthesis of two or more disciplines, and the idea of a problem that cannot be suitably resolved with a single approach, allowing the construction of new ways of creating knowledge. This type of learning allows the student to learn by making connections between ideas and concepts across different disciplinary boundaries. Students learning in this way can apply the knowledge gained in one discipline to another different discipline as a way to deepen the learning experience (Muraina et al., 2021). Interdisciplinary education brings out learning outcome different from the traditional approach that lacks interdisciplinary thinking which is the ability to integrate knowledge and method of thinking in multiple disciplines with expertise to produce a cognitive advancement that would have been impossible with mono disciplinary education (Mansilla, et al, 2000). This is as a result of overlapping disciplines that requires students' ability to not only synthesize and integrate abstract knowledge and theories but becoming useful to the society through skill acquisition.

In spite of the laudable advocacy for interdisciplinary education, Benson (1998) identifies five areas of concern as his argument against interdisciplinary education. The first argument according to him is that, "interdisciplinary education rests upon serious conceptual confusion as the practitioners lack a coherent, defensible sense of purposes as the connection among the disciplines contemplated by integrative studies is nothing more than a matter of borrowing insights or methods from one or more disciplines to illuminate problems in another". According to him, it is like a display o fool's project, propounding equations where all the terms are unknown." His second argument stated that, "it is a pedagogically doubtful business to spend time in interdisciplinary learning projects when the students lack a mature base in any of the contributing disciplines". He explains that, effective educational development demands proper background and critical participation on the part of the student. He further stated that, without significant grip on any of the associated discipline the student is assumed as a spectator in interdisciplinary education.

Thirdly, It is argued that, "a substantial commitment to integrative studies in the undergraduate program will impede the student's development of an essential disciplinary competence". He went ahead to explain that no matter attractive interdisciplinary education appears to be, there won't be enough time for students within the four year undergraduate programme to cover all the academic demands in order to be efficient. In his words, "we are being forced with increasing urgency to cut corners, to choose the lesser from among a number of curricular evils." The fourth argument is "that integrative studies courses are characteristically shallow, trading intellectual rigor for

topical excitement.” He was convinced that interdisciplinary education does not have much to give as it concerns in-depth knowledge of programs and criticise the lateral knowledge provided by the system. The fifth argument against interdisciplinary studies is that “the programs focus on the relatively high cost of the typical integrative studies course. In a time of embattled budgets and overburdened academic resources, it is argued that the interdisciplinary studies programs, with their heavy reliance on team teaching methods, special events, independent study, and relatively low faculty-student ratios are extravagant and cost ineffective” In concluding his argument, according to him interdisciplinary education is exorbitant without corresponding educational value.

Literature Review

Benefits of Interdisciplinary Education

In spite of criticism of interdisciplinary education, there are a lot of benefits that can be derived from the system. These include:

- i. **Skill diversification:** Interdisciplinary education helps students to acquire a diverse skill- set that enhances their functionality and versatility with a touch of expertise. This versatility enhances employability, making graduates more appealing to employers seeking innovative and adaptable workers.
- ii. **Problem-Solving Skills: Another benefit of** interdisciplinary education is that it encourages critical thinking and problem-solving by blending different fields of knowledge. Exposure to multiple disciplines encourages critical thinking and creative problem-solving abilities. It graduates to tackle complex challenges in Nigeria's fast-evolving economic landscape.
- iii. **Cross-Pollination of knowledge:** Interdisciplinary program enhances collaboration among learners from different fields, leading to innovative solutions and new business ideas. For instance, engineers working alongside business students can develop technology-based startups that address local needs.
- iv. **Support for Startups:** Educational institutions that offer interdisciplinary training can provide incubator programs that nurture startup development, providing mentorship, resources, and networking opportunities critical for young entrepreneur
- v. **Improving Public Services:** Graduates with interdisciplinary training are better equipped to design effective public policies and programs, addressing social issues like poverty, education quality, healthcare, and infrastructure, which are vital for creating a conducive environment for economic growth.
- vi. **Collaborative Research Initiatives:** Interdisciplinary education promotes collaborative research, yielding innovative solutions to challenges in agriculture, health, technology, and industry. This R&D is critical for coupling academic knowledge with practical applications that can stimulate economic activities.
- vii. **Investment incentives:** Universities that foster interdisciplinary research can attract funding from both private and public sectors, sparking the development of new technologies and industries that can enhance Nigeria's economy
- viii. **Contextualized Learning:** Interdisciplinary education can focus on regional development by addressing specific local challenges (such as rural development, resource management, and local entrepreneurship), empowering communities to create locally-driven economic solutions.
- ix. **Promotion of Local content:** Training students in fields intersecting with local industries (like agriculture, textile, and crafts) can encourage the development and promotion of these sectors, contributing to economic growth at the regional levels.
- x. **Developing a Knowledge-Based Economy.** A knowledge-based economy relies on intellectual capital rather than physical resources. Interdisciplinary education enables students to contribute to knowledge-driven industries like information technology, finance, and consulting, which are high-value sectors with strong growth potential. By fostering industries that are less resource-dependent, Nigeria can diversify its

economy, reducing dependency on oil. A knowledge-based economy also attracts global partnerships and investments, further accelerating economic growth.

- x. **Facilitating Global Competitiveness.** In a globalized world, interdisciplinary skills are essential for innovation and competitiveness. By fostering cross-border collaboration and interdisciplinary approaches, Nigerian students can be better equipped to work in international settings and drive Nigeria's participation in the global economy.

Challenges of Interdisciplinary Education

Addressing these challenges requires systemic changes at institutional, policy, and cultural levels to promote a more integrated approach to education in Nigeria. Interdisciplinary education in Nigeria faces several challenges. These include:

- i. **Faculty development:** Faculty matters may need training to effectively teach interdisciplinary courses. There is constraint in undertaking training to ensure effective implementation involves experts with the understanding of the concept.
- ii. **Research contrasts:** Interdisciplinary education requires significance resources, including funding and infrastructure. Interdisciplinary education like any other educational programs comes with huge expenses that deserves special intervention to cater for infrastructure.
- iii. **Resistance to change:** Some educators and stakeholders may resist change in favour of traditional discipline approaches within the educational system some teachers may feel insecure by this approach especially if they lack the training resources or time to adapt.
- iv. **Lack of Alignment:** To ensure that interdisciplinary curricular align with educational objectives of the society is a great challenge as it requires the ingenuity of expert in interdisciplinary education. This also requires planning, developing and professional assessment of learning outcomes as well as coordination and communication with the relevant stakeholders in the related disciplines.
- v. **Lack of concrete examples of interdisciplinary teaching available presently in the country to academia and other stakeholders capable of eliciting their own ideas (Lindvig & Ulriksen, 2019).** This also accounts for the novelty nature of educational system. Nigeria for example, there is no enough evidence of interdisciplinary education practice in any institutions of learning and this makes it extremely difficult to understand what it is all about.
- vi. **Institutional Barriers:** Many Nigerian educational institutions are structured around traditional disciplinary silos. Institutional rigidities and policies may limit collaboration across department.
- vii. **Curriculum Constraints:** For interdisciplinary education to be feasible there should be a relevant curriculum as product of curricula reform. Curriculum reform requires some notable experts from other related disciplines with the understanding of goals and objectives of interdisciplinary education to fashion out desirable curriculum (Pharo et al,2012). The most desired learning outcome is the interdisciplinary thinking. The dearth of educators with specialist characteristics of interdisciplinary education with skills and knowledge is a challenge more so, that research into disciplinary education is scarce without empirical evidence (Barnego & Newslander, 2010).
- viii. **Lack of sufficient literature.** As the agitation for interdisciplinary education increases inadequate extant literature on the mode of education is a great concern which has made it impossible in evaluating students' ability in interdisciplinary skills. This is because of the challenges of effective evaluation on interdisciplinary education and existing research have not given serious focus, therefore to demonstrate how it works in classes is not an easy task. (Lattuca, et al.,2017, Gao, et al,2020).
- ix. **Assessment Challenges:** Evaluating interdisciplinary work can be complex, as it is often difficult to measure outcomes and contributions through unconventional academic metrics. It is argued that interdisciplinary education is so complex to be incorporate in the existing system (Summers, 2005).It requires rigorous training and expertise to be able effectively evaluate the programme outcomes.

- x. Collaboration Issues: Effective interdisciplinary education requires collaboration among different disciplines, which can be difficult to foster due to differing priorities, terminologies, communication styles and cultural issues.

Prospects of Interdisciplinary Education in Nigeria

Interdisciplinary education in Nigeria comes with a lot of prospects for the country with transformative agenda that are inspiring.

- i. Positive policy—making. Interdisciplinary education provides evidence—based policy decisions responsible for sustainable development.
- ii. Innovation escalation. Interdisciplinary education will promote creative -problem solving, giving rise to innovative solutions for the nation’s challenges
- iii. Enhanced employability. One of the reasons adduced to the soaring joblessness among graduates in Nigeria is their unemployability due to lack of skills. Graduates of interdisciplinary education will be of high demand in the labour market having acquired necessary skills and knowledge.
- iv. Fruitful research output. The existing cross pollination of knowledge in interdisciplinary research engenders novel research output leading to discoveries and publications.
- v. Emergence of new industries in the country. Interdisciplinary education will cause emergence of new industries, like biotechnology, renewable energy, among others.
- vi. Enhanced healthcare delivery. As interdisciplinary research progresses, all sectors of life will be impacted including health. Research breakthrough in health sector will lead to disease prevention diagnosis and treatment.
- vii. Sustainable food security. Intellectual collaboration existing in interdisciplinary education will improve agricultural output thereby mitigating food scarcity with its attendant vices.
- viii. Economic viability and diversification. Knowledge of interdisciplinary education will enhance economic viability and diversification thereby reducing dependence on mono economy such as oil export by having access to other economic options.

Other prospects of interdisciplinary education include, innovation and entrepreneurship interdisciplinary education fosters creativity, critical thinking and problem-solving skills leading to innovative solutions and entrepreneurship.

Conclusion

Interdisciplinary educational in Nigeria has the potential to transform the education sector and drive national development, Addressing the challenges and leveraging the prospects required a collaborative effort for educators, Policy makers and stake holders. Boundary crossing skill acquired that is capable to change ones perceptiveness, thereby synthesising knowledge for different disciplines in order to cope with complex challenges. As a result, this study suggests the followings:

- i. Develop clear policies and guidelines for interdisciplinary education require rigorous training for purpose faculty development.
- ii. Allocate resources for interdisciplinary initiatives
- iii. Advocacy for inter-disciplinary education
- iv. Experts in educational Measurement and Evaluation be involved in planning and development interdisciplinary education for the purpose of alignment with societal needs.
- v. More literatures on interdisciplinary education be made available through innovative researches.
- vi. Curriculum experts to harmonize different
- vii. Develop innovative initiatives assessment method
- viii. Establish industry partnerships
- ix. Encourage community engagement

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