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Integrating World Experience Through Interdisciplinary Learning in Nigerian Universities

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ABSTRACTS

In the current context, higher education faces the challenge of preparing future professionals to respond to society's increasingly complex problems. However, the search for solutions means adopting new ways of working that promote multidimensionality through collaboration and an interdisciplinary outlook. Despite the advances made in interdisciplinary research, innovation development, and interdisciplinary teamwork, however, the implementation of this approach in higher education is still very slow, and further efforts are required. This article considers the opportunities for an interdisciplinary approach to student learning in university settings. In Nigeria, it is common knowledge that the educational system in it is not what it ought to be. This is evidenced by the fact that, above all, a good number of graduates from this system are unemployable, leading to so many ills in society. It is not unconnected with this fact that national policy on education was formulated to correct the anomaly. A juxtaposition of the policy with the state of higher education in Nigeria shows that the policy is far from actualizing its ends. The paper, therefore, suggested that core subjects should be integrated into the curriculum across levels that involve interdisciplinary learning in Nigerian universities.

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1. INTRODUCTION

Interdisciplinary learning is the exploration of a relevant concept, issue, or problem that integrates the perspectives of multiple disciplines to connect new knowledge and deeper understanding to real-life experiences. Fifty years ago, at a meeting in France, Jean Piaget, and other scholars studying human development and knowledge, as well as higher education leaders gathered to speak about the importance of moving beyond the disciplines in considering university teaching and innovation. The term transdisciplinary was coined and distinguished from multidisciplinary and interdisciplinarity at that meeting (Muraina *et al*., 2021). Fifty years later, scholars and practitioners still are discussing the importance of an interdisciplinary approach to teaching and learning (Muraina & Kamaldeen, 2022). Many of the challenges discussed at the original conference on teaching and learning ring true today, and the question can be raised about how to move forward to build on the original thinking, using the vast amount of research accumulated since that time in the learning and developmental sciences to guide this work.

Interdisciplinary and transdisciplinary approaches to knowledge have developed considerably over the last 50 years. While claims for similar problems identified at that meeting still exist (Bok, 2013; Muraina *et al*., 2021), there is an increasing trend for openness to discuss new views of student learning, who our students are, and the goals of university education as they relate to societal needs and students' professional and civic lives.

Interdisciplinary approach in education for sustainable development in the university context to enhance people's lives and advance sustainable development. Although progress is increasingly being made in incorporating sustainable development into higher education studies, there's a need to rethink methodologies for developing sustainability skills in student education, to develop skills such as interdisciplinary thinking, problem-solving, teamwork, and holistic thinking. Until recently, interdisciplinary thinking in higher education was very limited (Muraina *et al*., 2021). However, over the last two decades, a growing number of scientific papers have been published outlining university teaching projects and experiences based on an interdisciplinary approach. This is because the problems facing the world today cannot be solved by any single discipline alone, but rather, as Ledford argues, we must "bring people with different kinds of skills and expertise together. No one has everything that's needed.

The interdisciplinary approach has therefore become a key concept that should be integrated into the curriculum at all educational stages. Adopting this approach involves linking different disciplines together and creating faculty and student teams, which enrich the general educational experience (Muraina & Kamaldeen, 2022). In this sense, major institutions such as UNESCO, and many studies carried out in this field, have identified some of the interdisciplinary skills that higher education programs should seek to develop.

2. METHODS

This is a literature review. Data were obtained from internet sources and articles in international journals, which were collected, added, and combined with our ideas.

3. RESULTS AND DISCUSSION

3.1. Nature of interdisciplinary learning

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 itch literature and the development of key definitions. Muraina and Hassan

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(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). The most effective approach to interdisciplinary study enables students to build their interdisciplinary pathway by choosing courses that make sense to them. For example, it is not too difficult to find a theme that crosses disciplinary boundaries in literature, art, and the history of science and mathematics. Studying topics thematically is one way to bring ideas together resulting in more meaningful learning. This can occur by allowing students to choose their subjects and their learning is deepened when they reflect on the connections between what they are learning in different disciplines. One of the biggest barriers to achieving true interdisciplinary study in education environments is the necessity for collaboration of educators (Muraina *et al*., 2021). This can be difficult to achieve, but not impossible. Interdisciplinary teaching and learning are maximized when professionals from different disciplines work together to serve a common purpose and to help students make connections between different disciplines or subject areas. Such interaction is in support of the constructivist paradigm which allows for new knowledge construction and a deeper understanding of ideas than disciplinary study (Muraina *et al*., 2021).

3.2. Benefit of interdisciplinary education

Perhaps surprisingly, one of the main and often neglected benefits of interdisciplinary education is allowing the students to reflect on their specialty and realize what their discipline is. Indeed, the argument brought forward by Eckert is that “Students” are that clear about what the various disciplines do. What students need to know is what discipline is. The most encountered benefit is the opportunity for the students to link ideas and concepts across varied disciplines, prompting a constructive paradigm that makes for a deeper understanding. Azure stated as: “life is interdisciplinary”. It is therefore critical for education, and indeed higher education to consider the benefits of an interdisciplinary approach, and to implement its practice (Muraina & Hassan, 2022). A non-exhaustive list of the benefits of interdisciplinary learning and teaching as reported by Nissani and completed by Appleby includes:

(i) Students are highly motivated as they have a vested interest in pursuing topics that are interesting to them. As a result, the content is often rooted in life experiences, giving an authentic purpose for the learning and connecting it to a real-world context. Consequently, the learning becomes meaningful, purposeful, and deeper resulting in learning experiences that stay with the student for a lifetime.
(ii) Students cover topics in more depth because they are considering the many varied perspectives from which a topic can be explored.
(iii) Critical thinking skills are used and developed as students look across disciplinary boundaries to consider other viewpoints and also begin to compare and contrast concepts across subject areas.
(iv) Students begin to consolidate learning by synthesizing ideas from many perspectives and considering an alternative way of acquiring knowledge.
(v) Exploring topics across a range of subject boundaries motivates students to pursue new knowledge in different subject areas.

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(vi) Transferable skills of critical thinking, synthesis, and research are developed and applied to future learning experiences.
(vii) Interdisciplinary knowledge and the application of different disciplines can lead to greater creativity.
(viii) Worthwhile topics of research can fall in the "spaces" between the traditional disciplines.

3.3. Integration theory

Interdisciplinary learning is illustrated by the integration of multidisciplinary knowledge across a central program theme or focus. With repeated exposure to interdisciplinary thought, learners develop more advanced epistemological beliefs, enhanced critical thinking ability and metacognitive skills, and an understanding of the relations among perspectives derived from different disciplines. Our adaptation of Biggs and Collis (1980) Structure of the Observed Learning Outcome illustrates the stages of interdisciplinary knowledge integration and explains corresponding patterns of learners' intellectual functioning, from the acquisition of single-subject information to the transfer of interdisciplinary knowledge to other topics, issues, or problems.

Through different ways of exploration, students develop a layered understanding of themselves and the connections they have with the rest of humanity. Best practices in a transdisciplinary environment do not compartmentalize learning, but rather explore content within the context of inquiry (Muraina *et al*., 2021). For example, children learning about beliefs and values around the world (Social Studies) might compare and contrast the characteristics of religions. With that information, they will be working with a math strand of data using tally marks and graphs to analyze information.

Through languages, they will explore new vocabulary that will help them create poems while getting to know well-known authors of the 20th century. Through the visual arts, they will explore their creativity by learning new techniques and materials to paint a self-portrait. In Music, students might analyze and explore beliefs and values expressed through New Age music. Interdisciplinary learning requires that all teachers are involved and collaborate (Muraina *et al*., 2021). They must shift away from the comfort zone of working individually by sharing ideas with others to integrate learning experiences. This results in building meaningful and enduring understandings for students. Ultimately, interdisciplinary learning goes further by helping students grow and learn at a deeper level.

3.4. Integrating world experience to the curriculum in Nigerian Universities

The conventional curriculum most times do not incorporate other disciplines courses but the integrated curriculum makes teaching exciting especially as it includes courses from other disciplines and add technical skill outside of the course work that will be required for employment in the future. Several authors attempted to define integrated curriculum some of which are works of Lake (1994) as an education that is organized in such a way that it cut across subject-matter lines, bringing together various aspects of the curriculum into the meaningful association to focus upon broad areas of study. It views learning and teaching holistically and reflects the interactive real world. Integrated curriculum can also be seen as the process of envisaging new trends in teaching while preparing for the future. The integrated curriculum as the combination of academic and technical content in programs that focus on problem-solving, active engagement in projects, and real-world applications of the knowledge and skills taught. Integrated curriculum in the context of a linked learning approach, refers to the instructional method and materials for multidisciplinary teams of

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teachers to organize their instruction so that students are encouraged to make meaningful connections across subject areas (Gregory, 2007).

Another evolving concept around integrated curriculum is the interdisciplinary integrated curriculum that exists in the combination of some key subjects relating to the information profession. An example can be programming, entrepreneurship, physics, creative art, book publishing, and physiology having a close relationship that presents lessons that centers around a career issue (Muraina & Oladimeji, 2022). The interdisciplinary integrated curriculum has enriched goals to increase active learning instead of passive classroom instruction thus engaging the student in the teaching process. In this instance, the students are the focus aligning real-life experience in the teaching process that connects to the interest of the students and future careers. The goal of an interdisciplinary integrated curriculum is to develop student education and career planning skills. This can be achieved by exposing the students to professionals and programs that will allow for the right career choice and to further in a higher institution with an accumulation of varieties of knowledge.

Information is an integral aspect of human existence. The increase in knowledge has led to so many subjects, themes and projects to be accomplished in the learning experience of students and teachers resulting in information overload as the case may be (Muraina & Oladimeji, 2022). To curtail this menace of information overload there is a need to streamline searching and learning from a wide array of subject matter leading to the development of a curriculum that will suit each profession. The natural learning and students' experience can be regarded as an integrated curriculum that seeks to identify the need for education in this changing and dynamic world thus, proffering educational reforms to inculcate adequate learning some components make that makeup integrated curriculum like acquiring the right skill, content and higher level of thinking, learning around themes, establishing relationships among related, disciplines, emphasizing an in-depth understanding of concepts, making learning lifelong, accommodating varieties of learning styles and theories, establishing relationships with the industry, and encouraging active learning participation, especially in real-lil experience. The integrated curriculum establishes distinction among varied disciplines.

In addition, Gregory (2007) outlines the goals of an interdisciplinary integrated curriculum as follows:

(i) Increase Active Learning: this is a shift of classroom instruction from passive to active.
(ii) Develop Students' Educational and Career Planning Skills: by providing career connections with professionals in many jobs within a career area.
(iii) Reach a Diverse Population: students can express their interest, demonstrate unique skills, and master high-level academic and technical material by applying a variety of learning styles.
(iv) Build Community Support for Improving High Schools: by engaging key players in the industry, education, and community-based stakeholders in their local areas by creating support for schools and proactive education improvement policies and providing future employment opportunities for students.

4. CONCLUSION

The objectives of student attitude transformation and environmental sustainability awareness can be achieved most effectively in interdisciplinary learning. This type of capstone experience mirrored a workplace environment in which multiple viewpoints are valid and flexible connections must be made between natural processes, business models, and societal needs. This interdisciplinary learning led to significant learning outcomes by changing student

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attitudes, expanding worldviews, and sharing diverse perspectives. The following suggestions were made on the papers:

(i) Educational practitioners should continue to focus on interdisciplinary learning and teaching and research this type of experience since this will enable them to acquire skills that will prove extremely beneficial to students in their educational careers.
(ii) Interdisciplinary approaches to student learning and development in University settings are to be embraced by all stakeholders. This will help in enhancing the skill acquisition of students in the school.
(iii) Core subjects should be integrated into the curriculum across levels that involve interdisciplinary learning in Nigerian universities.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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