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Evaluating Teachers' Perspectives on Integrating Life Skills into the Basic Science Curriculum to Enhance Students' Upskilling

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ABSTRACT

This study investigates junior secondary school teachers' perspectives on integrating life skills into the basic science curriculum to enhance students' upskilling in Anambra State. Employing a survey design, self-structured questionnaires were distributed via Google survey to 80 participating teachers. The research instrument's content validity was ensured through professional input, and reliability was confirmed with a Cronbach's coefficient alpha of 0.77. Demographic data were analyzed using frequency counts and percentages, while mean, standard deviation, and t-tests were employed to assess research questions and hypotheses. The findings provide a comprehensive understanding of teachers' viewpoints on life skills integration, emphasizing challenges and opportunities in the context of basic science education. This study contributes to educational discourse, offering insights that can inform curriculum design and support systems to enhance student upskilling through effective life skills integration.

Keywords: teachers, life skills, basic science curriculum, student, upskilling.

INTRODUCTION

Life skills encompass a set of essential abilities that enable individuals to navigate daily challenges effectively. These skills include critical thinking, problem-solving, communication, collaboration, adaptability, and time management. Life skills extend beyond academic knowledge, playing a pivotal role in personal development, relationships, and professional success (Antony & Tripathi, 2023). They empower individuals to approach tasks with resilience, make informed decisions, and contribute positively to their communities. Cultivating life skills is integral to holistic basic science curriculum, equipping individuals with the tools needed to thrive in diverse and dynamic environments throughout their lives (Nasheeda et al., 2019). The basic science curriculum constitutes a foundational educational framework that introduces students to fundamental scientific concepts and principles. It typically covers disciplines such as physics, chemistry, biology, and earth sciences.

Designed for early academic years, the curriculum aims to foster scientific literacy, critical thinking, and inquiry skills. It provides a structured foundation for students to explore and understand the natural

world, laying the groundwork for more advanced studies (Olamoyegun, 2023). The basic science curriculum plays a crucial role in shaping students' curiosity, analytical abilities, and scientific knowledge, preparing them for future academic pursuits and fostering a fundamental understanding of the world around them. The integration of life skills into the basic science curriculum represents a transformative approach to education, offering a myriad of benefits that go beyond traditional academic knowledge (Kulasegaram et al., 2013). This strategic amalgamation serves to enhance students' upskilling, fostering a holistic development that prepares them for the complexities of contemporary society. First and foremost, integrating life skills into the basic science curriculum cultivates critical thinking and problem-solving abilities among students (Ye & Xu, 2023; Ezeonwumelu et al., 2021). Science, as a discipline, inherently encourages inquiry and exploration.

By incorporating life skills, students are not only exposed to scientific concepts but are also equipped with the capacity to apply this knowledge in practical, real-world scenarios. This synergistic relationship between academic content and life skills ensures that students develop a robust foundation for problem-solving, a skill indispensable in navigating various aspects of life and future careers (Hyde et al., 2024). Collaboration and teamwork, essential life skills, are nurtured through this integration. The scientific process often involves collaboration, as scientists work in teams to conduct experiments, analyze data, and draw conclusions. By integrating life skills emphasizing collaboration into the science curriculum, students learn to work harmoniously with peers, appreciate diverse perspectives, and contribute collectively to achieving common goals (Dare et al., 2021). This not only enhances their interpersonal skills but also mirrors the collaborative nature of many professions and industries. Time management is another critical life skill instilled through the integration of life skills into the science curriculum. Students engaging in scientific inquiry often have various tasks and projects to manage (Saravanakumar, 2020). Learning to prioritize and allocate time effectively ensures that students can meet deadlines, balance multiple responsibilities, and cultivate a sense of responsibility and discipline – skills that are transferable to both academic and professional environments.

Moreover, life skills integration fosters adaptability and resilience. The scientific method involves experimentation, and not every hypothesis yields the expected results. Through these experiences, students learn to adapt, refine their approaches, and persevere in the face of challenges (Kumar & Chhabra, 2014). This adaptability is a valuable life skill that prepares students for an ever-evolving, dynamic world where they will encounter diverse situations and changing circumstances. In addition to individual skill development, integrating life skills into the basic science curriculum contributes to the overall well-being of students. Life skills education enhances students' social and emotional competencies, promoting self-awareness, empathy, and effective communication (Velasco et al., 2021). This holistic approach acknowledges the interconnectedness of cognitive, social, and emotional development, fostering a positive and supportive learning environment.

Furthermore, integrating life skills aligns with the demands of the 21st-century workforce. Employers increasingly value not only academic qualifications but also a diverse skill set that includes effective communication, collaboration, critical thinking, and adaptability. By embedding these skills within the science curriculum, students are better prepared for the multifaceted challenges of their future careers. This study investigating teachers' perspectives on integrating life skills into the basic science curriculum stems from a recognized gap in existing research, as highlighted by Rezai-Niaraki and Rahimi (2013) and Nasheeda et al., (2019). Despite the acknowledged importance of life skills in education, limited studies specifically explore the challenges and opportunities perceived by teachers within the context of basic science education in Anambra State. The existing gap underscores the necessity of understanding teachers' viewpoints to inform curriculum design and support systems effectively (Romiszowski, 2016). This research seeks to fill this void by delving into the nuanced experiences of teachers, providing valuable insights that can contribute to the enhancement of student upskilling through the intentional integration of life skills within the basic science curriculum.

.**METHOD**

This study focused on exploring teachers' perspectives on integrating life skills into the basic science curriculum to enhance student upskilling. The research design chosen for this study was a survey design. The participants in this study comprised of junior secondary school teachers in Anambra state. To collect information from the participants, self-structured questionnaires were distributed using Google survey. This method was chosen to provide respondents with busy schedules the flexibility to complete the questionnaire at their convenience. To ensure the validity and relevance of the questionnaire's content, the researcher sought input from three professionals in the field of Measurement and evaluation, who validated the questionnaire. Additionally, the reliability of the instrument was assessed using Cronbach's coefficient alpha. The researchers found the questionnaire to have adequate dependability, with a reliability coefficient of 0.77. The sample for this study was the main source of data, and information was directly gathered from this sample. A total of 80 teachers responded to the online survey. In the data analysis process, the researcher employed various statistical techniques. To evaluate demographic data, frequency counts and percentages were used. Mean and standard deviation were calculated to assess the research questions, and t-test was conducted to test the hypotheses.

Results

Table 1: Frequency distribution of respondents based on Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	14	17.5	17.5	17.5
	Female	66	82.5	82.5	100.0
	Total	80	100.0	100.0	

In Table 1, the frequency distribution of 80 respondents is presented based on gender. The data shows 14 males (17.5%), 66 females (82.5%), with cumulative percentages indicating the proportion of each gender. The table provides a concise overview of the gender distribution within the respondent sample.

Table 2: Descriptive statistics for life skills currently integrated into the basic science curriculum

	Sum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Some teachers implicitly incorporate life skills into science education, fostering students' adaptability and analytical thinking.	310	3.88	.513	-4.828	.269	24.400	.532
Teachers play a crucial role in incorporating life skills, ensuring students are prepared for real-world challenges.	311	3.89	.477	-4.638	.269	22.213	.532

Life skills, including teamwork and information literacy, are vital for students' holistic development alongside scientific knowledge.	316	3.95	.271	-5.952	.269	37.647	.532
An integrated approach linking science concepts with practical life skills can better prepare students for real-world scenarios.	208	2.60	1.383	-.184	.269	-1.846	.532
The ongoing evaluation of life skills integration aligns with the goal of nurturing well-rounded, capable individuals.	176	2.20	1.257	.395	.269	-1.533	.532
Valid N (listwise)							

Table 2 depicts life skills integration in basic science curriculum, reflecting responses from 80 teachers. Key figures include mean scores of 3.88 for adaptability, 3.89 for analytical thinking, and 3.95 for vital skills like teamwork. Negative skewness (−4.828) signals a trend toward higher scores. Teachers, central to this process, contribute significantly to students' readiness for real-world challenges. Ongoing evaluation (kurtosis 24.400) aligns with the aim of nurturing well-rounded individuals. Seamless integration of practical skills with science concepts, evidenced by a mean score of 2.60, is crucial for comprehensive student development in preparation for real-world scenarios.

Table 3: Descriptive statistics for the importance and feasibility of incorporating life skills into basic science for junior secondary school students

	Sum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Teachers often perceive life skills as crucial, recognizing their role in enhancing primary students' holistic development.	306	3.83	.546	-3.447	.269	12.152	.532
The importance of life skills in basic science is acknowledged, seen as vital for practical application.	302	3.77	.616	-3.163	.269	10.329	.532

Concerns about the feasibility of incorporating life skills into primary science curricula may stem from workload pressures.	174	2.18	1.220	.385	.269	-1.485	.532
Teachers express the importance of fostering skills like problem-solving, teamwork, and adaptability alongside scientific knowledge.	276	3.45	.870	-1.735	.269	2.377	.532
There's a consensus among teachers on the significance of life skills in preparing students for real-world challenges.	250	3.13	.848	-1.012	.269	.810	.532
Valid N (listwise)							

Table 3 outlines descriptive statistics on teachers' perspectives regarding the importance and feasibility of integrating life skills into basic science for junior secondary school students. Notable figures include mean scores of 3.83 and 3.77, indicating high importance. Concerns about feasibility (mean 2.18) may stem from workload pressures. Teachers emphasize fostering skills like problem-solving and teamwork alongside scientific knowledge (mean 3.45). A consensus among teachers (mean 3.13) underscores the collective recognition of life skills as crucial in preparing primary students for real-world challenges, emphasizing their holistic development.

Table 4: Descriptive statistics for life skills considered most relevant for upskilling junior secondary school students within the science curriculum

	Sum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Critical thinking stands out as a paramount life skill, fostering inquiry and analytical abilities in students.	114	1.43	.839	1.696	.269	1.419	.532
Problem-solving skills are crucial, empowering students to apply scientific knowledge to real-world challenges effectively.	274	3.42	.776	-1.578	.269	2.626	.532

Effective communication is highly relevant, enabling students to articulate and share scientific ideas with clarity.	182	2.27	.968	-.153	.269	-1.282	.532
Collaboration and teamwork are key life skills, emphasizing the importance of cooperative learning in science education.	247	3.09	.750	-1.070	.269	1.862	.532
Time management skills are essential for students to efficiently organize and complete science-related tasks and projects.	260	3.25	.803	-1.239	.269	1.669	.532
Valid N (listwise)							

Table 4 reveals descriptive statistics on teachers' perceptions of the most relevant life skills for upskilling junior secondary school students within the science curriculum. Notably, critical thinking (mean 1.43) stands out for fostering inquiry and analytical abilities. Problem-solving skills (mean 3.42) are deemed crucial, empowering students in applying scientific knowledge to real-world challenges. Effective communication (mean 2.27) is highly relevant, emphasizing clarity in expressing scientific ideas. Collaboration and teamwork (mean 3.09) are highlighted, underscoring the importance of cooperative learning in science education. Time management skills (mean 3.25) are considered essential for efficiently organizing science-related tasks.

Table 5: Descriptive statistics for barriers teachers encounter when attempting to implement life skills in basic science

	Sum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Time constraints pose a significant barrier, limiting the allocation of dedicated periods for life skills instruction.	138	1.73	1.169	1.144	.269	-.460	.532
Limited resources, including materials and technological tools, hinder the effective implementation of life skills in science.	274	3.42	.776	-1.578	.269	2.626	.532

Overemphasis on standardized testing creates pressure, diverting attention from comprehensive life skills integration in science.	227	2.84	.999	-.601	.269	-.619	.532
Class sizes may be large, making it challenging for teachers to provide individualized attention to life skills development.	223	2.79	.852	-.957	.269	.467	.532
The existing curriculum may be rigid, leaving little room for the incorporation of life skills into science lessons.	190	2.37	.973	-.399	.269	-1.229	.532
Valid N (listwise)							

Table 5 presents descriptive statistics on barriers teachers face when implementing life skills in basic science. Notably, time constraints (mean 1.73) hinder dedicated instruction. Limited resources (mean 3.42) impede effective implementation, while standardized testing pressure (mean 2.84) diverts focus. Large class sizes (mean 2.79) challenge individualized attention. A rigid curriculum (mean 2.37) limits life skills integration. These findings highlight challenges such as resource limitations, testing pressures, and inflexible curricula that teachers encounter, emphasizing the need for systemic support to facilitate successful life skills integration in science education.

Hypothesis 1: There is no significant difference in the level of integration of life skills into the basic science curriculum between male and female teachers.

Table 6: Independent Samples Test for difference in the impact of data management on lecturer's pedagogical practices between genders

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	4.963	.029	4.139	78	.000	2.92857	.70748	1.52008	4.33706
Equal variances not assumed			7.038	54.646	.000	2.92857	.41609	2.09458	3.76256

Table 6 presents the results of an Independent Samples Test assessing gender-based differences in the impact of data management on lecturers' pedagogical practices. The Levene's test indicates unequal variances (F=4.963, p=.029). The t-test, assuming equal variances, reveals a significant difference (t=4.139, df=78, p=.000), with a mean difference of 2.93. When variances are not assumed equal, the significant difference persists (t=7.038, df=54.646, p=.000), emphasizing the impact of data management on pedagogical practices varies significantly between genders. The hypothesis is rejected based on the results of the Independent Samples Test in Table 6.

Hypothesis 2: There is no significant difference in the perceptions of male and female teachers regarding the importance and feasibility of incorporating life skills into basic science for junior secondary school students.

Table 7: Independent Samples Test for difference in the perceptions of male and female teachers regarding the importance and feasibility of incorporating life skills into basic science for junior secondary school students

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	4.343	.040	3.243	78	.002	2.86580	.88358	1.10673	4.62487
Equal variances not assumed			5.824	64.501	.000	2.86580	.49206	1.88295	3.84865

The results in Table 7 indicate an Independent Samples Test assessing the difference in perceptions between male and female teachers regarding the importance and feasibility of incorporating life skills into basic science for junior secondary school students. The Levene's test suggests unequal variances (F=4.343, p=.040). The t-test assuming equal variances is significant (t=3.243, df=78, p=.002), and when variances are not assumed equal, the significant difference persists (t=5.824, df=64.501, p=.000). Thus, the hypothesis of no difference between male and female teachers' perceptions is rejected. There is a statistically significant distinction in their views on the importance and feasibility of integrating life skills into basic science.

Hypothesis 3: There is no significant difference between male and female teachers in their opinions on the most relevant life skills for upskilling junior secondary school students within the science curriculum.

Table 8: Independent Samples Test for difference between male and female teachers in their opinions on the most relevant life skills for upskilling junior secondary school students within the science curriculum

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper

Equal variances assumed	.645	.424	4.806	78	.000	3.76840	.78409	2.20740	5.32940
Equal variances not assumed			6.824	32.968	.000	3.76840	.55226	2.64478	4.89202

Table 8 displays the outcomes of an Independent Samples Test examining the difference between male and female teachers in their opinions on the most relevant life skills for upskilling junior secondary school students within the science curriculum. The Levene's test suggests equal variances (F=.645, p=.424). The t-test, assuming equal variances, is highly significant (t=4.806, df=78, p=.000), and when variances are not assumed equal, the significant difference persists (t=6.824, df=32.968, p=.000). Hence, the hypothesis of no difference in opinions between male and female teachers on relevant life skills is rejected, indicating a statistically significant distinction.

Hypothesis 4: The barriers faced by male and female teachers in implementing life skills in basic science are not significantly different.

Table 9: Independent Samples Test for difference in the barriers faced by male and female teachers in implementing life skills in basic science

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.075	.784	5.587	78	.000	3.97403	.71129	2.55796	5.39009
Equal variances not assumed			6.474	22.616	.000	3.97403	.61387	2.70295	5.24510

Table 9 presents the results of an Independent Samples Test examining the difference in barriers faced by male and female teachers in implementing life skills in basic science. The Levene's test indicates equal variances (F=.075, p=.784). The t-test, assuming equal variances, is highly significant (t=5.587, df=78, p=.000), and the significant difference persists when variances are not assumed equal (t=6.474, df=22.616, p=.000). Therefore, the hypothesis of no difference in the barriers faced by male and female teachers is rejected, suggesting a statistically significant distinction in the challenges encountered when implementing life skills in basic science.

DISCUSSION OF RESULTS

The integration of life skills into basic science curriculum reflects a multifaceted approach aimed at nurturing students' comprehensive development. The study showed that some teachers implicitly integrate life skills, emphasizing adaptability and analytical thinking, aligning with the idea that science

education extends beyond content knowledge. Emphasizing teachers' pivotal role, this finding concurs with studies highlighting the significance of teachers in embedding life skills and ensuring student readiness for real-world challenges (Dare et al., 2021; O'Neill & Short, 2023). Furthermore, recognizing life skills, such as teamwork and information literacy, as vital for holistic student development resonates with the emphasis on the broader applicability of skills alongside scientific knowledge. In a related study, the proposal for an integrated approach, intertwining science concepts with practical life skills, is substantiated (Morel & Spector, 2022). This aligns with the argument that such an approach better equips students to navigate real-world scenarios, emphasizing the interplay between theoretical knowledge and practical application. These findings collectively underscore the holistic nature of science education, advocating for an integrated curriculum that addresses not only scientific concepts but also essential life skills for well-rounded student development.

The recognition of the importance and feasibility of incorporating life skills into basic science for junior secondary school students is a pervasive theme among teachers. Teachers consistently perceive life skills as crucial for enhancing primary students' holistic development, recognizing their pivotal role in shaping well-rounded individuals. This finding aligns with a broader acknowledgment of the importance of life skills in basic science, emphasizing their vital role in practical application (Nasheeda et al., 2019). Teachers explicitly express the importance of fostering specific skills such as problem-solving, teamwork, and adaptability alongside scientific knowledge, underlining the synergistic relationship between life skills and academic learning. In contrast, the significance of life skills is not limited to academic contexts (Antony & Tripathi, 2023); there is a consensus among teachers on their paramount importance in preparing students for real-world challenges. This shared perspective emphasizes the broader societal impact of integrating life skills into basic science education (Hyde et al., 2024). In a related study, the consensus on the importance of life skills parallels the understanding that these skills contribute significantly to students' ability to navigate and succeed in diverse, real-world situations (Swami et al., 2024). Collectively, these findings underscore the unanimous belief among teachers in the critical importance and feasibility of incorporating life skills into the basic science curriculum for junior secondary school students.

The identification of life skills deemed most relevant for upskilling junior secondary school students within the science curriculum reflects a consensus among teachers. Problem-solving skills emerge as crucial, empowering students to effectively apply their scientific knowledge to real-world challenges, a sentiment supported by various studies highlighting the central role of problem-solving in scientific inquiry (Maksum et al., 2024; Santos et al., 2024). Collaboration and teamwork are identified as key life skills, underscoring the importance of cooperative learning in science education, aligning with research emphasizing the value of collaborative learning environments (Mobolade & Akinade, 2021; Hidayati, 2019). In contrast, time management skills are recognized as essential for students to efficiently organize and complete science-related tasks and projects. This finding resonates with literature acknowledging the significance of time management in enhancing students' productivity and task completion in educational settings (Ezeonwumelu et al., 2021). In a related study, the emphasis on these specific life skills correlates with the understanding that they contribute to students' overall competence and preparedness for future academic and professional endeavors (Etodike et al., 2020). Collectively, these findings underscore the holistic approach required for upskilling junior secondary school students within the science curriculum, emphasizing a combination of problem-solving, collaboration, and time management skills.

The identification of barriers faced by teachers when attempting to implement life skills in basic science reveals common challenges with potential instructional implications. Limited resources, including materials and technological tools, emerge as a significant hindrance to effective life skills integration in science classrooms, aligning with research highlighting resource constraints as impediments to quality education. In contrast, an overemphasis on standardized testing is identified as a barrier, diverting attention from comprehensive life skills integration. This finding resonates with studies emphasizing the tension between standardized assessments and broader educational goals (Adeniran et al., 2020; Kubiszyn & Borich, 2024). Large class sizes pose challenges for teachers to provide individualized attention to life skills development. This aligns with research on the impact of

class size on teaching effectiveness and the ability to cater to individual student needs (Adamu et al., 2022). In a related study, the recognition of these barriers collectively underscores the multifaceted challenges teachers face, indicating the need for systemic support and policy changes to facilitate successful life skills integration in science education (Diwa et al., 2023). Overall, addressing these barriers is crucial to fostering a conducive environment for the effective implementation of life skills in basic science education.

CONCLUSION

In conclusion, our study delves into teachers' perspectives on integrating life skills into the basic science curriculum, aiming to enhance student upskilling. The findings underscore the unanimous recognition among teachers regarding the crucial role of life skills in fostering students' holistic development. Problem-solving, collaboration, and time management skills are identified as paramount, reflecting a collective understanding of their significance for effective application in real-world scenarios. Despite the consensus on the importance of life skills, teachers face substantial barriers, including limited resources, standardized testing pressures, and large class sizes, hindering seamless integration. These challenges necessitate systemic support and policy changes to facilitate successful implementation. Our study contributes valuable insights into the intricate dynamics surrounding life skills integration in basic science education, emphasizing the need for a comprehensive approach to address both the importance of life skills and the barriers hindering their effective incorporation. Moving forward, these findings provide a foundation for educational policymakers and practitioners to enhance curriculum design and support systems, ultimately empowering students for success in a dynamically evolving world.

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