

Barriers and Enablers of the Implementation of Students' Practical Workshop for Acquisition of Entrepreneurial Skills in Fisheries in Public Senior Secondary Schools in Abia State

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Abstract: *This study examined the implementation of the Students' Practical Workshop (SPW) in Fisheries in public senior secondary schools in Abia State, Nigeria. The aim was to identify the barriers and enablers affecting SPW in Fisheries education, with the intent to enhance practical skill acquisition among students. A mixed-methods research design was adopted, integrating both qualitative and quantitative approaches. The study targeted students, teachers, and administrators involved in SPW across 50 purposively selected public senior secondary schools in Abia State. A total of 200 participants, including 100 fisheries students, 50 fisheries teachers, and 50 school principals, were conveniently sampled. Data collection methods included in-depth interviews with six respondents and a structured survey questionnaire titled "Students Fisheries Workshop Barriers and Enablers" (SFBE-21), which was validated and tested for reliability with a Cronbach's alpha value ranging from 0.86 to 0.91. Qualitative data were analyzed using thematic analysis, while quantitative data were examined using descriptive statistics, including means and standard deviations. The qualitative analysis identified two main themes regarding SPW implementation: limited practical experiences and insufficient implementation. Quantitative findings supported this, with the majority of respondents indicating a low or very low extent of SPW implementation. Barriers identified included lack of infrastructure, inadequate funding, and low student engagement and interest, with lack of infrastructure being the most significant. Conversely, enablers identified included well-maintained infrastructure, high teacher competence, adequate financial support, and collaborative partnerships, all of which received high mean scores from respondents. Thus, this study argues that effective implementation of SPW in Fisheries requires addressing the identified barriers while leveraging the enablers. Thus, improving infrastructure, providing adequate funding, enhancing teacher competence, and fostering collaborative partnerships are essential steps towards enriching practical education in Fisheries. These measures can ultimately enhance the quality of education and better prepare students for future employment and entrepreneurial opportunities in the field of Fisheries.*

Keywords: Students' Practical Workshop (SPW), Fisheries Education, Implementation, Barriers, Enablers, Infrastructure, Collaborative Partnerships, Skill Acquisition

Introduction

In Nigeria, as in many other developing countries across the globe, there is an increasing recognition of the importance of equipping students, particularly at the senior secondary school level, with practical skills that are both technically and entrepreneurially relevant. Consequently, Adesulu in Amadioha and Akor (2018) argued that the current Senior Secondary School (SSS) Education Curriculum in Nigeria has been designed by the National Educational Research and Development Council (NERDC) with the primary goal of preparing students for higher education,

while simultaneously establishing a strong foundation for achieving sustainable poverty reduction, job creation, and wealth generation, through acquisition of entrepreneurial or vocational skills. Arguably, these were the reasons why the newly designed curriculum content in Nigeria included an entrepreneurial subjects such as Fisheries, among others (NERDC, 2011).

According to Amadioha and Akor (2018), the inclusion of Fisheries in the curriculum as an entrepreneurial subject is a welcomed development because history is laden with issues that have yearned for this subject for a long time. Similarly, Ogwu (2017) argued that the inclusion was highly appropriate and timely in secondary schools in Nigeria to facilitate skill acquisition, in order to boost the local fishery industry. According to Amadioha and Akor (2018), the commercial fishery industry in Nigeria declined substantially through the 1980s, a trend that has remained since then, as depicted by the fluctuations in quantity on an annual basis and has not shown any strong upward but downward movement. These researchers (Amadioha and Akor, 2018) further stated that fish represents a crucial and economically feasible source of animal protein. According to the Food and Agricultural Organization cited in Boyd, McNevin and Davis (2022), fish contributes to over 17% of the global animal-protein supply, particularly significant in developing nations. Evidence in some literature reveals that it serves as a vital component in the livelihoods of rural communities across many developing countries (Are, 2015, Afolabi, 201; Oda, 2012). In Nigeria, fish holds significant importance as a primary protein source, and inadequate protein intake can lead to malnutrition in both children and adults, adversely affecting life expectancy (Ogwu, 2017).

Deductively, this study argues that the revolution in the age-long declining fishery industry (Amadioha & Akor, 2018), stands as a fundamental prerequisite for driving economic and social progress within a nation, thus the recent enhancements in curricula in secondary schools in Nigeria (Ahmadi & Lukman, 2015), has placed a strong emphasis on equipping students with practical work skills that can facilitate both paid employment and self-employment opportunities. The acquisition of entrepreneurial skills by students through a functional, well-organized and sustainable Students' Practical Workshop (SPW) in fisheries, which is a vital curricular component in senior secondary schools (NERDC, 2011), is an important aspect of their education and future career prospects.

This study observed that there seems to be divergent opinions among others, as well as dearth of literature on the concept of workshop. According to Flanagan (2015), workshops, much like other educational environments, necessitate teachers who can effectively utilize principles of education to impart fresh information. Nevertheless, workshops possess distinct features that set them apart from other instructional settings. Myers (2011) argue that workshops are characterized by short, intensive learning sessions, fostering small group interactions, promoting active engagement, and emphasizing the practical application of freshly acquired knowledge. In the view of the Food and Agriculture Organization (FAO), a workshop serves as a central hub on the farm for the upkeep and repair of machinery, equipment, and structures. It also functions as a well-organized storage area for tools, a repository for supplies and spare parts, and a shelter for conducting work when the weather is unfavorable (FAO, n.d). Leveraging on the evidence provided by some literature (Flanagan, 2015; FAO n.d, Myers, 2011), this study posits that a workshop can be comprehensively conceptualized as any platform, events, facilities, building or activities, which are usually different from other educational settings (classrooms), which provides opportunities, tools, equipment and other materials that enable students or learners to acquire practical and theoretical skills in production and repairs. In the context of Fisheries as a subject in Senior

Secondary Schools, Students' Practical Workshop (SPW) may include fish farms, laboratories for demonstrations and organized workshop events on fisheries (workshop seminar), work placement in fish farms, buildings where fish tools and equipment are stored or repaired, etc.

Based on the experiences of the researchers of this study, SPW plays a crucial role in the education and training of students in senior secondary schools, serving various functions and holding great significance within the field. Its aims encompass the improvement of hands-on skills, the encouragement of experiential learning, and the cultivation of sustainability in fisheries management. Practical workshops allow students to apply their theoretical knowledge in real-world scenarios, enhancing their understanding and skills in fisheries. Similarly, an investigation by Aleru & Lazarus (2021) on the roles of farm workshop in indigenous mechanized technology for self-reliance indicates that farm workshops in Agriculture offer students the opportunity to gain practical experience in agricultural activities. The authors (Aleru & Lazarus, 2021) further assert that, SPW enhances students' abilities in constructing and installing indigenous mechanized farming tools, instill students with the essential skills for maintaining native mechanized farm equipment and enable them to participate in industrial workshop activities. Thus, governments at all levels should provide well-equipped farm workshops for agricultural education programs. Therefore, to ensure that graduates of senior secondary school who passed through the fisheries curricula, are not only viable but also adaptable in society, this study argues that there is a pressing need for skill improvement and relevance. However, this study observed that the teaching of fisheries in some senior secondary schools in Abia State have been largely reduced to theories, as a result of poor integration and non-functionality of practical workshops in fisheries for students, among other factors which seem not to have being empirically investigated. In a study, Ademu, Adah & Atsumbe (2018) identified several factors that hinder the acquisition of these work skills among students of agricultural education, including the scarcity of available land for agricultural production, inadequate funding for agricultural education programs, insufficient equipment and training infrastructure, as well as outdated and irrelevant curricula. In light of this, this study examined the extent of implementing SPW in fisheries, and its barriers and enablers in Senior Secondary Schools in Abia State Nigeria.

Background Literature: *Empirical Review*

Several survey studies on conducted the subject of this investigation have focused on the availability and utilization of fisheries education facilities, teacher training needs, and challenges associated with teaching fishery in secondary schools across different states in Nigeria like Delta, Edo, Kwara, Benue and Ebonyi (Ogwu, 2017; Imobighe *et al.*, 2024; Ojo *et al.*, 2023; Ogwu & Nikoro, 2024; Ogwu *et al.*, 2021; Asogwa *et al.*, 2013), which underscores a pressing need for further research on the barriers and enablers of Student Practical Workshop (SPW) in fisheries and its implementation in Abia state secondary schools. The findings from previous studies highlight systemic issues such as shortages of facilities for fishery instruction, deficiencies in teacher skills and knowledge, challenges in curriculum implementation, and students' lack of necessary skills and resources for careers in the fishery field. For example, Ogwu (2017) identified significant shortages of facilities for fishery instruction in secondary schools, with underutilization of the few available resources. Imobighe *et al.* (2024) further emphasized the lack of opportunities for training to enhance the knowledge and skills of fishery teachers, coupled with challenges in curriculum implementation and inadequate support from state governments. These findings underscore the importance of addressing the systemic deficiencies in fisheries education to foster skill acquisition among students and enhance the effectiveness of curriculum implementation.

Moreover, studies by Ojo *et al.* (2023) and Ogwu & Nikoro (2024) shed light on additional barriers to effective fishery instruction, including teacher-related factors, students' negative attitudes towards learning fishery, and deficiencies in students' skills and knowledge. These findings suggest the need for targeted interventions to improve teacher capacity through training workshops and seminars, as well as comprehensive instruction in fishery skills for students. Also, Ogwu *et al.* (2021) emphasized the importance of addressing teacher skill gaps and training needs in fishery education, recommending in-service training for teachers and the recruitment of competent individuals to supplement the teaching workforce. Asogwa *et al.* (2013) also highlighted challenges such as teacher knowledge gaps, poor maintenance of instructional materials, and insufficient resources for effective teaching of fish production in senior secondary schools.

Gaps in Existing Studies and Rationale for the Study

One significant gap in the literature that warranted this study on the barriers and enablers of implementing Students' Practical Workshop (SPW) in Fisheries for the acquisition of entrepreneurial skills in public senior secondary schools in Abia State is the lack of empirical evidence specific to this context. While there is existing research on fisheries education in Nigeria, much of it focuses on broader issues such as curriculum challenges, teacher training, and facility availability (Ogwu, 2017; Imobighe *et al.*, 2024; Ojo *et al.*, 2023; Ogwu & Nikoro, 2024; Ogwu *et al.*, 2021; Asogwa *et al.*, 2013), with limited attention given to the practical aspects of skill acquisition through SPW, especially in Abia State. This gap is particularly notable given the importance of practical, hands-on experience in preparing students for careers in fisheries and related entrepreneurial ventures. SPW provides students with valuable opportunities to develop essential skills such as fish farming techniques, fish handling, marketing strategies, and business management skills. However, the effectiveness of SPW in Abia State public senior secondary schools, as well as the barriers and enablers influencing its implementation, remains largely unexplored in the literature.

In light of these gaps, conducting a study on the barriers and enablers of SPW in fisheries and the extent of its implementation in Abia state senior secondary schools is salient. Also, all the studies reviewed above adopted a survey approach, hence a mixed study approach combining surveys with qualitative methods would provide a comprehensive understanding of the factors influencing the effectiveness of SPW in fisheries education, particularly in Abia State senior secondary schools. Arguably, by identifying barriers and enablers at the institutional, instructional, and individual levels, policymakers and education stakeholders can develop targeted interventions to improve the quality of fisheries education and enhance students' skills and competencies in the field.

Specific Objectives

- To determine the extent to which SPW in Fisheries implemented in senior secondary school students in Abia State.
- To identify the barriers to the implementation of SPW in Fisheries in senior secondary school students in Abia State.
- To investigate the enablers of SPW in Fisheries for the acquisition of entrepreneurial skills among senior secondary school students in Abia State.

Research Questions

- To what extent is SPW in Fisheries implemented in senior secondary school students in Abia State?

- What are the barriers to the implementation of SPW in Fisheries in senior secondary school students in Abia State?
- What are the enablers of the implementation of SPW in Fisheries for the acquisition of entrepreneurial skills among senior secondary school students in Abia State?

Methodology

This study employed a mixed-methods research design, integrating qualitative and quantitative approaches. The target population of this study encompasses students, teachers and administrators (principals and vice principal), who are stakeholders involved in implementing Students' Practical Workshop (SPW) in Fisheries, in over 499 public senior secondary schools in Abia State (Amakiv, 2015). The study adopted a multistage non-probability sampling technique. At the first stage, a purposive sampling technique was used to draw 50 public senior secondary schools that offer fisheries to students. Secondly, researchers conveniently sampled 2 fisheries students, 1 teacher of fisheries, and 1 principal from each from the 50 public secondary schools selected for this study. This resulted to a total of 200 participants which comprised 100 fisheries students, 50 fisheries teachers and 50 school principals. A convenient sampling was adopted due to the availability and willingness of the respondents to participate in the study. Lastly, 2 teachers, 2 students and 2 principals were randomly selected from included schools for interviews.

Data collection involved both qualitative and quantitative methods. In the qualitative phase, in-depth interviews were conducted with 6 respondents (2 teachers, 2 students and 2 principals), to gather insights into their experiences, perceptions, and suggestions regarding the implementation, barriers and enablers of SPW in Fisheries. The quantitative phase employed a structured survey questionnaire with 4-points Likert scale to measure the level of agreement or disagreement among participants. The instrument was titled "Students Fisheries Workshop Barriers and Enablers" (SFBE-21), which comprised of 21 items adapted from several empirical studies reviewed (Ogwu, 2017; Imobighe *et al.*, 2024; Ojo *et al.*, 2023; Ogwu & Nikoro, 2024; Ogwu *et al.*, 2021; Asogwa *et al.*, 2013). The survey questionnaire underwent a content validation by 3 experts in Agricultural Education in Michael Okpara University of Agriculture Umudike, and a pilot study on a small sample of 10 respondents in another region, which were not part of the investigation. Afterwards, a Cronbach Alpha Method was used to determine the reliability of the constructs of the instrument at 0.86, 0.91, and 0.89 alpha (α), respectively for item-loadings measuring research question, 1, 2 and 3. Thus, the instrument was deemed reliable for data collection, based on the recommendations by Hajjar (2018) that a Cronbach alpha value equal to or above 0.7 is considered acceptable, and items collate in measuring the construct.

Data analysis comprised thematic analysis for qualitative data gathered from interviews. According to Terry *et al.* (2017), a qualitative research method used to identify, analyze, and report patterns or themes within a dataset, typically from interviews, focus groups, or textual sources. It involves systematically coding and organizing the data to identify recurring ideas, concepts, or topics, known as themes. Thus, this study through a thematic analytical approach analyzed data collected from interviews conducted with six persons, by identifying themes related to barriers and enablers, and descriptive statistics (mean, standard deviations and ranking) for quantitative data, to describe responses.

Quantitatively, simple percentage and frequency was used to describe answer to research question 1. More so, pooled mean [$\bar{X}_p = (n_1 \times \bar{x}_1) + (n_2 \times \bar{x}_2) + \dots + (n_k \times \bar{x}_k) / N$] values of respondents was used to answer the research questions, while pooled standard deviations (S_p) were used to show of

the amount of variation or dispersion in the set of values for research question 2 and 3. This was based on the guidelines adopted by Biggs (1991) and Bobbit (2020). The average mean of 2.50 on 4-point scale was used for describing the responses of the respondents. Thus, any item with a pooled mean $[\bar{X}_P]$ of 2.50 or above was described majority agreed, and less than 2.50 was described as majority disagreed. Ethical considerations included ensuring informed consent, and maintaining participant anonymity and confidentiality. Some of the limitations of this study included its focus on senior secondary schools in Abia State, and the use of non-probability sampling techniques, potentially limiting generalizability, and also the possibility of response bias in the self-report nature of the survey.

Results

The qualitative and quantitative results of this study are presented below to answer the research questions posed by this study.

Implementation of Student Practical Workshop (SPW) in Fisheries

Qualitative Result on Research Question 1

Based on the interview conducted with six participants on research question 1, two similar themes emerged on implementation of SPW in fisheries in secondary schools in Abia state based on the responses of respondents during the interviews conducted. Evidence of the themes are presented below.

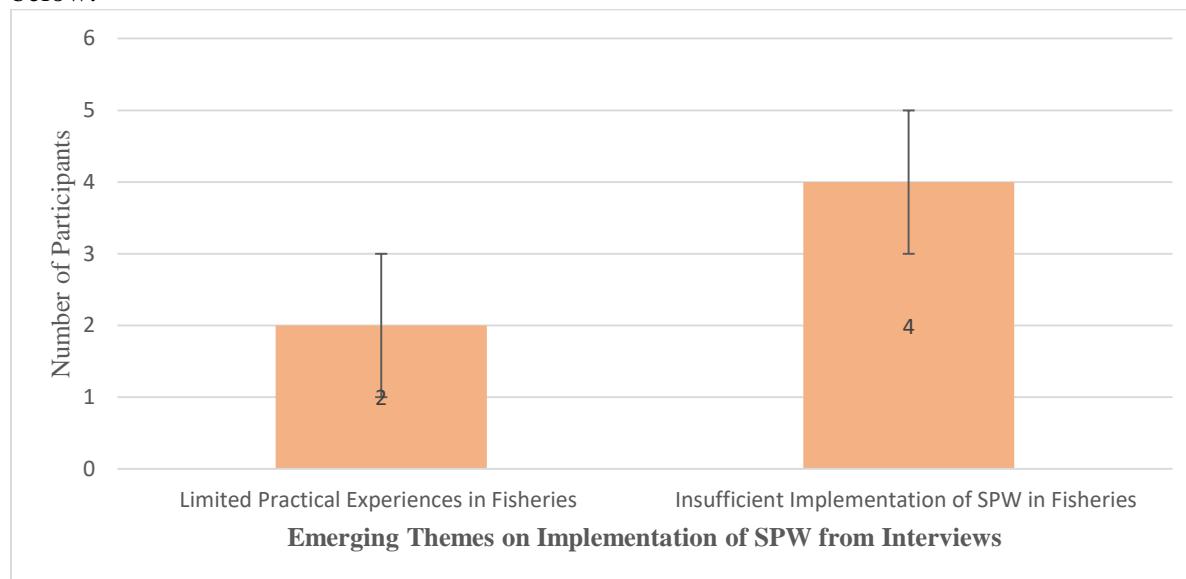


Figure 1: Themes on Implementation of SPW in Fisheries

Themes: Limited Practical Experiences and Insufficient Implementation of SPW

As illustrated in Figure 1 above, this study observed that two respondents expressed concerns about the limited practical experiences in fisheries education. Similarly, four correspondents indicated a perception of insufficient implementation of SPW in Fisheries education among senior secondary school students in Abia State. Evidently, one respondent emphasized that “...while some practical activities in fisheries exist in few schools, they are not enough....many students are lacking hands-on experience in fisheries as a subject in schools...”

Quantitative Result on Research Question 1

This study further surveyed 200 participants on the extent to which SPW in Fisheries is implemented in Senior Secondary School students in Abia State, using 4-point Likert questionnaire. Therefore, the results of this is represented in *Figure 1. 4* below.

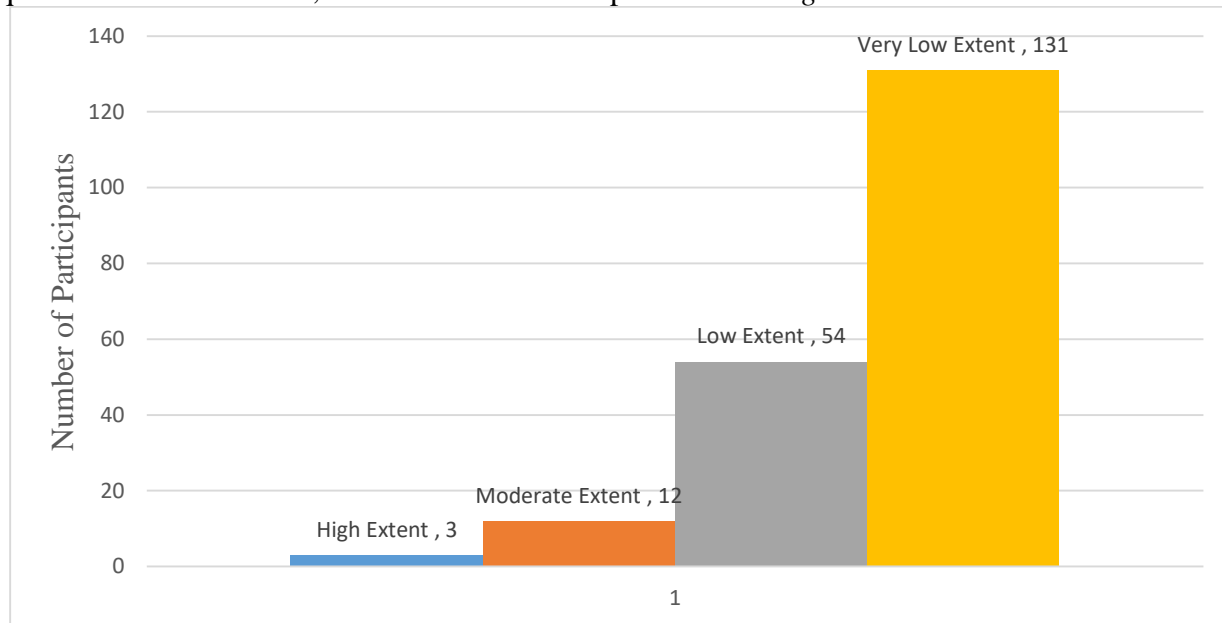


Figure 2: A bar chart representing participants' responses on the extent to which SPW in Fisheries implemented in Senior Secondary School students in Abia State

Based on results shown in *Figure 2* above, out of the 200 respondents surveyed, about 1.5% [$f = 3$] expressed that SPW in Fisheries is implemented to a high extent. This suggests a limited prevalence of robust practical experiences in this educational domain. However, about 6% [$f = 12$] of the respondents indicated a moderate level of implementation. While this percentage is higher than the high extent category, it still suggests a relatively modest presence of School-Based Practical Work in Fisheries. On the contrary, the majority of respondents, constituting 27% [$f = 54$], reported a low extent of SPW implementation. This finding implies that a significant portion of Senior Secondary School students in Abia State perceives the practical implementation of fisheries education to be lacking or insufficient. The most prominent response category is "very low extent," with a staggering 65.5% [$f = 131$] of respondents expressing this viewpoint. This overwhelming majority indicates a widespread perception among the surveyed participants that the implementation of SPW in Fisheries is severely lacking. Such a prevalent sentiment raises important questions about the effectiveness and adequacy of current educational practices in the realm of fisheries education in Senior Secondary Schools in Abia State.

Barriers to the Implementation of SPW in Fisheries

Qualitative Result on Research Question 2

Based on the qualitative study of research question 2, four themes emerged from the interviews which included issues on infrastructure and funding, poor student engagement and low interest of students. Evidence of these themes are presented below in Figure 2.

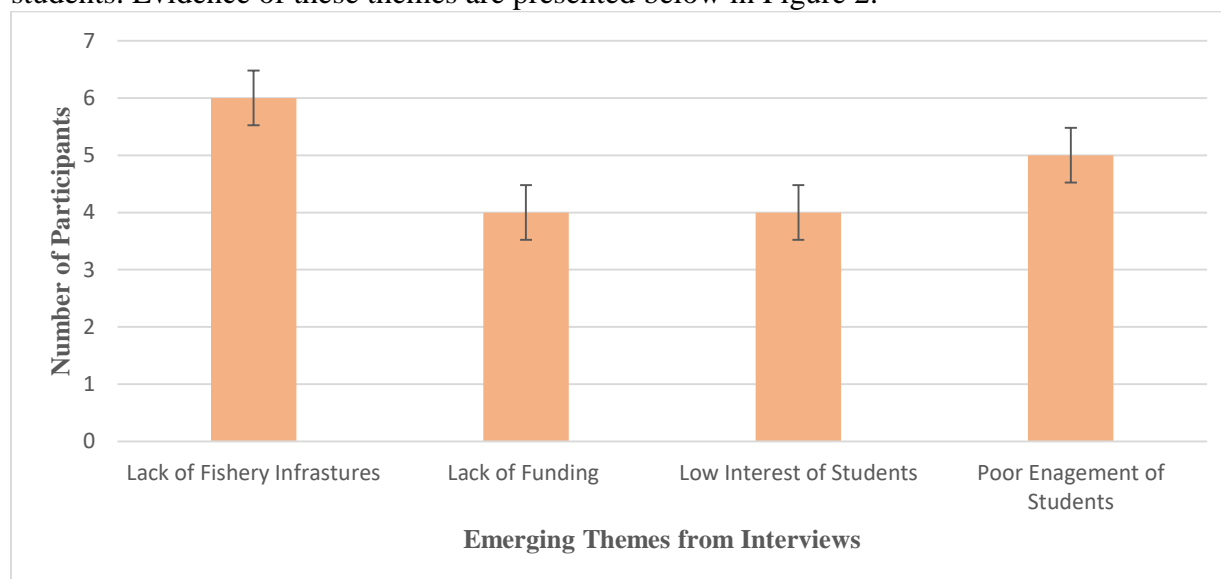


Figure 3: Themes on Barriers to the Implementation of SPW in Fisheries

Infrastructural Issues: Figure 3 above shows that 6 respondents consistently expressed that the issue limiting the implementation of SPW in fisheries in senior secondary schools in Abia state included lack of infrastructure for fisheries. One participant highlighted the importance of infrastructure, stating that “...*inadequate facilities stop us from practical sessions and also engaging the students...*”

Funding Challenges: During the interviews, the expressions of four participants, as shown in Figure 3 above, indicated that lack of funds to build infrastructures for fishery workshop in senior secondary schools in Abia state is a major challenge. Two participants in public secondary schools expressed concern that there seems to be inadequate funding by government. An evidence of statement by one respondents reveals that “...*to maintain effective teaching of fisheries in secondary schools in Abia state, money is greatly needed to get some facilities... and keep it running...*”

Poor Student Engagement and Interest: The qualitative data in Figure 3 above shows that four respondents consistently expressed concerns on low student engagement and interest as significant barriers to effective implementation of SPW in fisheries in senior secondary schools in Abia State. A participant expressed that “the low interest of students makes it challenging for us teachers to carry out meaningful practical work”. Another respondent stated that “...*we do not engage the students because the infrastructures are lacking... and this even makes the subject (fisheries) theoretical and also reduce students’ interest*”.... This also implies that lack of fishery infrastructure is a major challenge to SPW on the subject. This results to poor student engagement and low interest.

Quantitative Results on Research Question 2

Comparatively, the results of the quantitative study on research question 2 are presented in Table **Table 1: Pooled Mean and Standard Deviations of the Responses of Respondents on Barriers to the Implementation of SPW in Fisheries in Senior Secondary Schools in Abia State**

S/N	Item Statement	\bar{X}_P	S_P	Rank
1.	Lack of infrastructure (e.g., fish ponds, equipment)	3.4	.00	1
2.	Inadequate funding	3.2	.02	2
3.	Low engagement of students	3.1	.01	3
4.	Low interest of students	2.9	.00	4
5.	Limited access to relevant technology	2.8	.01	5
6.	Inadequate maintenance of workshop facilities	2.7	.04	6
7.	Inadequate teacher competence	2.6	.00	7
8.	Time constraint	2.5	.03	8
9.	Curriculum deficiencies	2.4	.05	9

\bar{X}_P = pooled mean, S_P = pooled standard deviation for a sample population, $n = 200$

Results in Table 1 reveals the barriers to the implementation of Students' Practical Workshop (SPW) in Fisheries perceived by respondents, thus providing valuable insights into the challenges faced in senior secondary schools in Abia state. Specifically, 8 out of the 9 items reveals the pooled mean values ranging from 2.5 to 3.4, which are above 2.50-average on a 4-point scale. This implies that majority of the respondents agree that the lack of essential infrastructure, such as fish ponds and equipment [\bar{X}_P : 3.4], low engagement of students [\bar{X}_P : 3.1]; low interest of students: There is a notable agreement [\bar{X}_P : 2.9]; limited access to relevant technology [\bar{X}_P : 2.8]; inadequate maintenance of workshop facilities [\bar{X}_P : 2.7], inadequate teacher competence [\bar{X}_P : 2.6]; and time constraint [\bar{X}_P : 2.5]. However, lack of infrastructures constitutes the most significant [R: 1] barrier to effective implementation of SPW, followed by poor funding [R: 2]. More so, the remarkably low pooled standard deviations for the 8 out of 9 items [S_P : .00-.03] underscores a unanimous consensus among respondents regarding this obstacle. On the other hand, 1 out of the 9 items show a mean value of 2.40, which is below 2.50 on 4-point scale. This indicates that majority of the respondents disagree to curriculum deficiencies [\bar{X}_P : 2.4] is as a barrier to SPW. The standard deviation [S_P : 0.05] indicates a moderate level of consensus, with some variability in perceptions regarding the role of curriculum design in practical workshops.

Enablers of Students' Practical Workshop (SPW) in Fisheries

Qualitative Observations on Research Question 3

Based on the qualitative study on research question 3, four themes on enablers of SPW in fisheries emerged from the expressions of respondents. These themes are presented below.

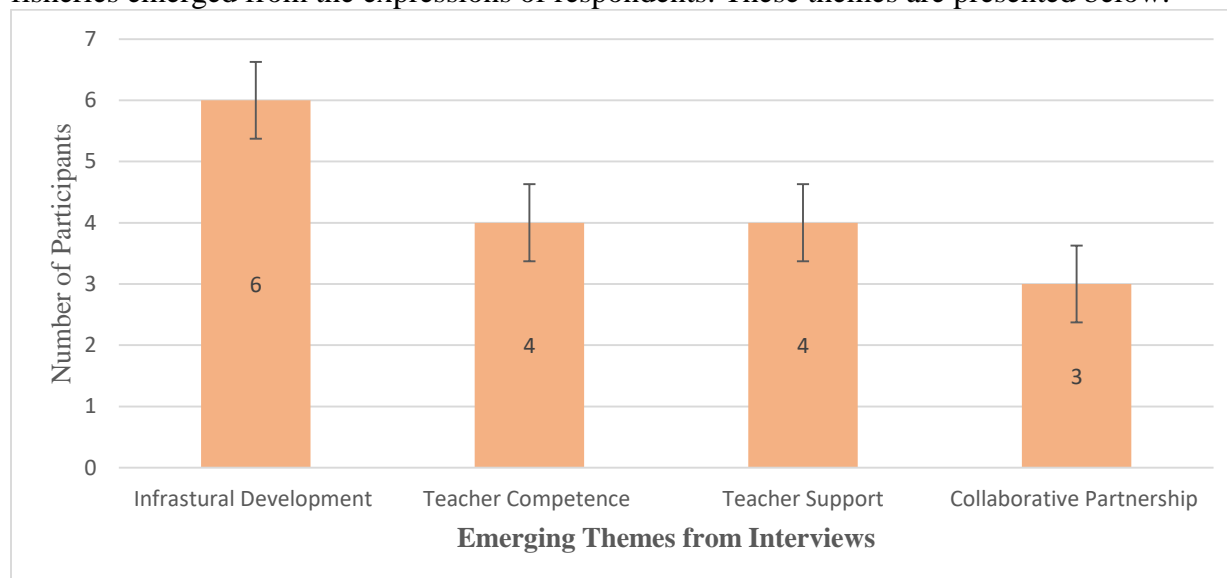


Figure 4: Themes on Enablers of Students' Practical Workshop (SPW) in Fisheries

Infrastructure Improvement: Figure 4 above shows that during the interview, six participants stressed the significance of infrastructure in facilitating the implementation of Student Practical Work (SPW) in fisheries in senior secondary schools in Abia state. For instance, one respondent emphasized, "...good and sustainable infrastructure will play a key role in facilitating the implementation of fishery workshop for students to help them acquire skills..." Additionally, another participant expressed concern on how infrastructure directly impacts student engagement and curriculum relevance, stating that, "...the benefit of fishery infrastructures in engaging students and making the curriculum more relevant..."

Teacher Competence and Support: In Figure 4 above, four participants expressed the importance of teacher competence and also adequate financial support for successful implementation of SPW in fisheries in senior secondary schools in Abia state. For example, one participant stated that, "...well trained and skillful teachers are needed to run practical workshops in fisheries...". On the other hand a statement by another participant reveals that adequate financial support for teachers is a crucial factor in enhancing the implementation of SPW in fisheries in senior secondary schools. Furthermore, a participant stressed on the necessity of teacher training and financial assistance, stating that, "...when teachers are well trained and supported with money to run this programme (SPW in fisheries)...it will help to improve workshops in senior secondary schools...."

Collaborative Partnerships: Figure 4 above, shows that three respondents expressed concern on the value of collaborative partnerships in enriching educational experiences and supporting SPW implementation in fisheries. Another participant corroborated this by emphasizing the potentials of collaboration with educational and other agencies, stating that, "...when teachers and school administrators with educational and other agencies..., it will help in funding and provide more opportunities for students".

Quantitative Observations on Research Question 3

In addition, Table 3 below shows the quantitative results on facilitators or enablers of SPW in fisheries in senior secondary schools in Abia state.

Table 3: Pooled Mean and Standard Deviations of the Responses of Respondents on the Enablers of Students' Practical Workshop (SPW) in Fisheries in Senior Secondary School Students in Abia State

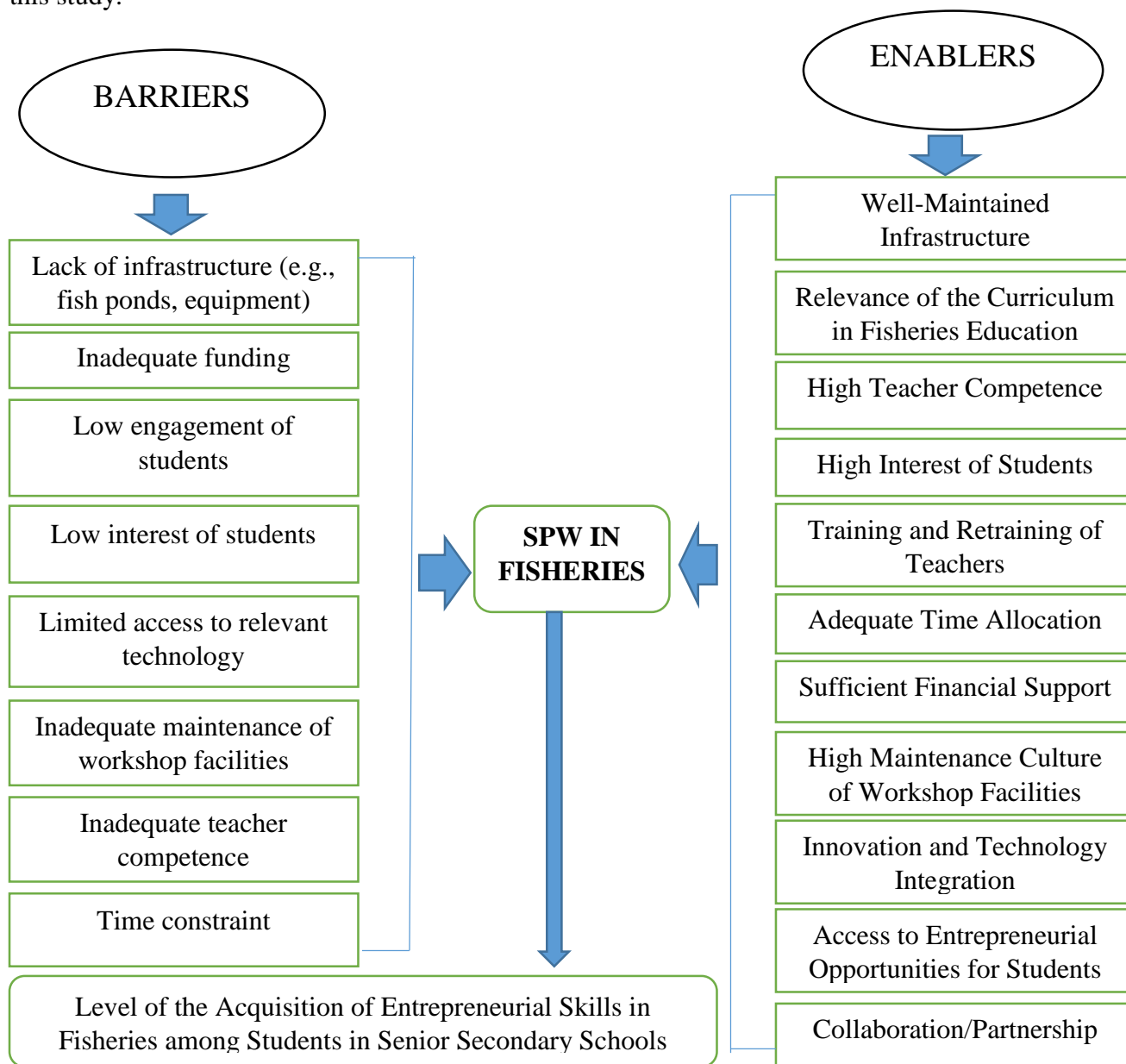
S/N	Enablers of SPW in Fisheries	\bar{X}_P	S_P
1.	Well-Maintained Infrastructure for SPW	3.4	.02
2.	Relevance of the Curriculum in Fisheries Education	3.3	.00
3.	High Teacher Competence	3.5	.02
4.	High Interest of Students	3.4	.03
5.	Training and Retraining of Teachers	3.5	.02
6.	Active Student Engagement in SPW	3.3	.03
7.	Adequate Time Allocation for SPW	3.4	.00
8.	Sufficient Financial Support for SPW	3.5	.03
9.	High Maintenance Culture of Workshop Facilities	3.4	.00
10.	Innovation and Technology Integration in SPW	3.3	.02
11.	Access to Entrepreneurial Opportunities for Students	3.4	.03
12.	Collaboration/Partnership with Educational and Other Agencies	3.3	.00

\bar{X}_P = pooled mean, S_P = pooled standard deviation for a sample population

The results presented in Table 2 shed light on the factors perceived by respondents as enablers for the implementation of Students' Practical Workshop (SPW) in Fisheries within senior secondary schools in Abia State. This analysis provides insights into the positive aspects contributing to the success of SPW. Among the 12 identified enablers, all items exhibit pooled mean [\bar{X}_P] values ranging from 3.3-3.5, which are notably high on the 4-point scale. This suggests a strong consensus among respondents that factors (enablers) such as well-maintained Infrastructure, relevance of the curriculum in Fisheries Education, high teacher competence, high Interest of students, training and retraining of teachers, active student engagement, time allocation, financial support, facility maintenance, technological innovation, entrepreneurial access, and collaborative partnerships. This comprehensive approach positions the SPW as a dynamic and enriching educational environment, play a crucial role in facilitating the implementation of SPW. More so, the standard pooled deviations for these items are notably low [S_P : 0.00-0.03], reflecting a unanimous consensus among respondents regarding the positive impact of these enablers. The narrow range of standard deviations indicates a high level of agreement on the importance of these factors in facilitating SPW.

Conceptual Model on Findings

Figure 2 below shows the conceptual model summary of barriers and enablers of Students’ Practical Workshops (SPW) in Senior Secondary Schools in Abia State based on the findings of this study.



Based on the quantitative and qualitative findings, this study posits through the conceptual model shown in *Figure 2* that the interplay between barriers and enablers in Students' Practical Workshop (SPW) for Fisheries is crucial in determining the extent to which students acquire skills in Fisheries within Senior Secondary Schools in Abia State. Thus, to improve skill acquisition in Fisheries, it is imperative to address existing barriers by establishing specific facilitating factors. These include maintaining well-equipped infrastructure for fishery experiments, ensuring the relevance of the Curriculum in Fisheries Education, promoting high teacher competence, fostering students' high

interest, providing training and retraining opportunities for teachers, allocating adequate time, offering sufficient financial support, cultivating a high maintenance culture for workshop facilities, integrating innovation and technology, providing access to entrepreneurial opportunities for students, and fostering collaboration and partnership.

Discussion of Findings

The findings of this study on Student Practical Work (SPW) in Fisheries in senior secondary schools in Abia State reveal significant insights through both qualitative and quantitative analyses. The qualitative analysis through thematic approach identified two major themes regarding the implementation of SPW in fisheries, which included the limited practical experiences and insufficient implementation. More so, the quantitative survey further validated the qualitative findings, indicating a relatively low extent of SPW implementation. This suggests a widespread perception among participants that practical implementation of fisheries education is lacking or insufficient in senior secondary schools in Abia State. This finding aligns with the argument put forth by Ogwu & Nikoro (2024) that Fishery is currently taught as a scientific subject rather than as a vocational trade in public secondary schools. This implies that there is poor implementation of practical workshop for skill acquisition fisheries in secondary schools. Worthy of note, Adesulu in Amadioha & Akor (2018) and Ogwu (2017) argued that practical skills acquisition, particularly in fields like fisheries, is crucial for preparing students for future employment and entrepreneurship opportunities. The decline of the commercial fishery industry in Nigeria, as stated by Amadioha & Akor (2018), emphasizes the urgent need to enhance practical education in fisheries to address economic challenges and promote sustainable development.

Furthermore, the qualitative study found several barriers to the implementation of SPW in fisheries, including infrastructural issues, funding challenges, and poor student engagement and interest. Similarly, the quantitative study corroborated the qualitative findings, revealing that lack of infrastructure was perceived as the most significant barrier to SPW implementation, followed by inadequate funding. Other identified barriers included low student engagement and interest, limited access to relevant technology, and inadequate teacher competence. In corroboration, evidence from previous research in other regions carried out by Ogwu (2017), Imobighe *et al.* (2024), Ojo *et al.* (2023), Asogwa, Onu & Egbo (2013) and Ogwu & Nikoro (2024), also revealed similar systemic challenges in fisheries education, including shortages of facilities, deficiencies in teacher skills, and curriculum implementation issues. Specifically, Imobighe *et al.* (2024) found that there are no opportunities for training to enhance the knowledge and skills of Fishery teachers, and that the state government was not fulfilling their expected roles. This finding aligns with that of Ojo *et al.* (2023) who indicated that factors related to teachers are among the obstacles to effective Fishery instruction, and also in agreement with the studies conducted by Ogwu, Ikeoji & Nwakor, (2021) and (Asogwa, Onu & Egbo, 2013). More so, Ogwu (2017) reported a significant shortage of facilities for Fishery instruction, with the few available ones being underutilized. The findings of this study in corroboration with the findings of previous studies enumerated above indicate the importance of addressing these barriers to effectively implement practical workshops in fisheries education.

Qualitative insights on enablers of SPW in fisheries revealed the importance of infrastructure improvement, teacher competence and support, and collaborative partnerships. Evidently, the quantitative analysis further supported the qualitative findings, indicating a consensus among respondents regarding the importance of various enablers for SPW implementation. Factors such

as well-maintained infrastructure, high teacher competence, adequate financial support, and collaborative partnerships were perceived as crucial for facilitating SPW in fisheries education. In agreement with this findings, previous studies conducted in other states in Nigeria by Ojo *et al.* (2023), Ogwu & Nikoro (2024), and Ogwu *et al.* (2021) independently recommended collaborative partnerships, adequate financial support, high teacher competence, and teacher-training as important success factors for implementation of fisheries education in secondary schools. Also, evidence in the recommendations made by these studies emphasized the role of governments and educational institutions in providing well-equipped facilities and support programs to enhance the effectiveness of fisheries education (Ojo *et al.*, 2023, Ogwu & Nikoro, 2024, Ogwu *et al.*, 2021).

Conclusion

Through a combination of qualitative and quantitative analyses, this research revealed the challenges, facilitators, and issues surrounding SPW implementation in fisheries education. Based on the findings of this study, there is poor implementation of SPW in fisheries education in senior in senior secondary schools in Abia State. In addition, this study argues that the barriers to effective implementation of SPW in fisheries included infrastructural limitations, funding constraints, and student disengagement and low interest. However, lack of infrastructure and funding are the major barriers among others. On the other hand, this study reveals several enablers that can contribute to the successful implementation of SPW in fisheries education. Evidently, infrastructure improvement, teacher competence, financial support, and collaborative partnerships emerge as key factors that can enhance SPW experiences for students. Moreover, this study argues the interconnectedness between these barriers and enablers, illustrating the complex dynamics at play in SPW implementation. The findings of this study underscore the importance of a holistic approach that considers not only infrastructural and financial aspects but also pedagogical strategies and collaborative efforts. Arguably, the findings of this investigation provide valuable information for policymakers, educators, and stakeholders involved in fisheries education in senior secondary schools in Abia State and beyond. Thus, addressing the identified barriers while leveraging the enablers is crucial for improving the practical experiences and skill acquisition of students in fisheries education. Also, by adopting a comprehensive approach and fostering collaborative partnerships, stakeholders can work towards creating an environment conducive to effective SPW implementation, ultimately enhancing the quality of education and preparing students for success in the field of fisheries.

Recommendations

Based on the findings of the study, the following four practical recommendations to improve the implementation of Student Practical Work (SPW) in Fisheries in senior secondary schools in Abia State were made.

- The government of Abia state and philanthropists should allocate resources and funding towards the enhancement of infrastructure for fisheries education in senior secondary schools. This includes the establishment of fish ponds, procurement of necessary equipment and facilities, maintenance of existing infrastructure. This study argues that by providing students access to well-equipped laboratories and practical workshops, schools can facilitate hands-on learning experiences in fishery education.
- Abia State Ministry of Education and School Administrators should implement teacher-training or programs focused on enhancing pedagogical skills and subject-specific knowledge in fisheries education. This include providing ongoing support and professional

development opportunities for teachers to stay updated with best practices and innovative teaching methods. Additionally, ensure adequate financial support for teachers involved in SPW initiatives to incentivize their active participation and dedication.

- School administrators and teachers should foster collaboration and partnerships between schools, government agencies, NGOs, and industry stakeholders to enrich educational experiences and support SPW implementation. This include pooling resources, expertise, and networks to create comprehensive programs and initiatives that benefit students and educators alike. Also, they should leverage external partnerships to provide students with access to real-world experiences, mentorship opportunities, and career pathways in the field of fisheries. This study argues that by working together, stakeholders can create a supportive ecosystem that enhances the quality and relevance of fisheries education in Abia State.

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