COMPARATIVE ANALYSIS OF TEACHERS' PERCEPTIONS ON GENERAL AND ADDITIONAL MATHEMATICS CURRICULA IN SENIOR SECONDARY SCHOOLS IN EKITI STATE, NIGERIA

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Abstract

This study examined a comparative analysis of teachers' perceptions on General and Additional Mathematics curricula in senior secondary schools in Ekiti State, Nigeria. The study investigated teachers' perceptions of curriculum content, assessed the influence of teacher qualifications on curriculum implementation, and explored the role of gender in shaping curriculum delivery. A descriptive research design was adopted, sample of 120 mathematics teachers drawn from six local government areas using a multistage sampling procedure. Data were collected using a validated questionnaire, Teachers' Perceptions on General and Additional Mathematics Curriculum (TPGAMC), with a reliability coefficient of 0.80. Findings revealed that teachers generally held positive perceptions of both curricula, but they regarded General Mathematics as more relevant to real-life situations, better aligned with student needs, and strongly influenced by teachers' perceptions in assessing learner performance. Conversely, Additional Mathematics curriculum was seen as more abstract and less focused on problem-solving, though beneficial for preparing students for advanced studies. Results further showed that teacher qualifications significantly influenced effective teaching in both curricula, with higher qualifications and professional development linked to better student outcomes. However, gender differences were found to play minimal role. The study recommended curriculum reforms to strengthen problem-solving in Additional Mathematics.

Keywords: Teachers' perception, General Mathematics, Additional Mathematics, Curriculum implementation, Teacher qualification, Gender influence

Introduction

Mathematics education believes to be old as humanity itself. It was believed to be a vital tool that is inevitable to human existence. It is a subject that is widely used by man to manage his daily activities. Throughout history, Mathematics believes to have served man in various forms such as in agriculture, trade, financial transactions and communication of quantitative information; its application seems to continue in shaping and supporting human development in countless ways. Mathematics believes to be a subject centered to the development of any science based discipline. It is a subject that provides foundation language to all experimental inquiries and analysis carried out by scientists and technologists. According to, Ibaan, Nduka and Daso (2024), Mathematics is a crucial discipline that impulse the nation development. It was perceived to be a subject through which science, technology and engineering ideas are formulated, tested and communicated. It was believed that its inferences induce the necessary outcome which served as veritable yield stick to measure every nation development.

Also, Mathematics believed to aids the learning of other subjects like Economics, Financial Accounting, Banking and Finance and Marketing among others. No wonder its study made compulsory at all level of education, mostly at primary and secondary school in Nigeria. It was believed that without brilliant performance in Mathematics to have access to worthwhile careers will be at risk since competence gained in the study of Mathematics has been an advantage to learners in the quantitative subjects to gain opportunity to contribute to the economic and technology development of a nation. Adeleye, (2021). Realizing the significance of Mathematics as a tool for improving other discipline as well enhancing nation growth and development in science and technology, countries of the world are expected to intensify efforts to reform their Mathematics Education Curriculum and respond in a positive way to global educational trend and the national developmental needs (NERDC,2013; Ajagun, 2019). It was believed that curriculum is the only vehicle on which teaching and learning activities ensued. It was perceived to be bedrock of all the classroom instructional proceedings, it outlines what students are expected to know and be able to do at various stage of schooling. FRN, (2014), asserted that curriculum is the basic means through which stated educational goals can be attained to gear individuals to an inspired citizens; designed by the education expertise to prepare individuals' to contribute drastically to nation economic and technological development (Ajagun,2019).

Sharon, (2020) reiterated the challenges to include the lack of interaction between teachers and students; placing too much emphasis on observable behaviours, lack problem-solving ability, prioritise rote procedures at the expense of deeper conceptual reasoning and placed more focus on societal needs instead of individual needs. Olorundare and Akinyemi (2014) said that inadequate teacher's involvement in the design and review of the Mathematics curriculum allows the disconnection between policy and practices. The noticeable and indisputable deficiency in the implemented curriculum were appeal for reform since it has been identified, aims to make curriculum contents to be clearly stated so that it satisfied the needs of students, which enable the education planners in Nigerian to develop initiatives, to improving skills needed in science and technology. It was believed that the latter attempt to reform implemented curriculum opening up into two sets of curriculum in Mathematics in Nigeria which are now running side by side at the senior secondary level of education. The two curriculums are General Mathematics and Additional Mathematics.

General Mathematics curriculum in Nigeria believed to be designed with specific aims. It was perceived to be a

foundational subject articulated in the National Policy on Education to impulse nation growth and development. According to FRN (2014) and Odogwu (2015), General Mathematics was made a core subject at both Primary and Secondary education levels in Nigeria due to its central role in the nation scientific, technology and economic development. Notwithstanding the aims attached to the curriculum, teachers' perception of General Mathematics perceived to significantly impart its effective implementation. The researcher observed that many of the teachers that handle the subject complain of the curriculum as abstract and overloaded.

According to Uka (2021), many Mathematics teachers believed that the curriculum is easy to understand by both teachers and the students but it focused on too many topics. And that the overloading of curriculum and its' abstraction in nature has been the reasons why it is impossible for the teachers to have enough time and the resources to present the content contains effectively. It was believed that complex nature of the curriculum affected teacher presentation of its contents effectively during Mathematics discourse in the classroom. Adedigba and Olanrewaju (2020) are of the opinion that the highly abstract and complex nature of General Mathematics curriculum poses serious challenges for teachers, makes some certain contents too abstract to teach. It seems that teachers inability to present the content knowledge effectively has made students see General Mathematics as abstract and also made the students memorize procedures without proper understanding of the underlying concept. Odogwu (2015) and WAEC Chief Examiner (2020), reiterated that the curriculum contents do not take care of daily student's experiences but rather serve the purpose of preparing the students for public examination such as WASSCE, NECO and NABTEB. This believes have made it impossible for the students to see the relevance of the content to their growth and in many situation has led to the students poor performance in the subject.

General Mathematics is a broad based curriculum which focused much on the completion of topics rather than to make students grasp and understand these topics. According to Amoo and Kasali (2016), the General Mathematics curriculum contains too many topics which have made it difficult for the teachers to effectively, engage the students during teaching and learning activities. They were of the opinion that the broad contents of the General Mathematics make the teacher to rush over the contents in the curriculum just to be able to finish in time without consider what the students were able to grasp and understand. Olagunju and Adediran (2018), opined that the arrangement or sequencing of the various topics in the General Mathematics curriculum make it difficult for the students to understand and also to relate the Mathematics contents to their daily life. Ezeugwe and Onyebuchi (2018) said that relating the Mathematics contents to the real life situation were made impossible due to inadequate materials to aids the teaching of the General Mathematics curriculum.

According to Adeniyi and Akanmu (2020), Teachers were of view that nature and content of Additional Mathematics curriculum are too rigorous to understand. It was designed to develop and prepare students for further study in the fields of Science and Technology. It was believed that proper understanding of Additional Mathematics content will help the student to develop higher logical reasoning and analytical problem solving skills, and also with constant practice on various content in Additional Mathematics will improve the conceptual understanding of the students who have strong interest in future careers in Science, Technology and Mathematics related fields. (WAEC, 2020).

Although, the two curriculums seems to be complementary to each other but they differ in term of scope, depth and instructional requirements. It was

observed that many teachers find the school curriculum content lacking in real-life relevance for learners, (Olabode, 2018). According to him, when instructional content falls to connect with students' everyday experiences, it becomes difficult for them to understand, and retain the subject matter. It seems that Additional Mathematics delves deeper into concepts areas such as calculus, trigonometry and advance algebra that perceived higher demand level of abstraction and problem solving skills (Adeniji & Owoeye, 2020). Agwagah and Ezeugo, (2018), revealed that teaching of Additional Mathematics has been seen as a great task, considering the limited time allocated to the teaching of the subject on the school timetable. This situation seems to have denied enough instruction time for teacher and students to interact well with adequate examples to support the curriculum content matter.

Adegoke and Mefun, (2016) was of the opinion that teachers' educational qualification is another vital variable that is crucial to the implementation of Mathematics curriculum at all level of education in Nigeria. It was believed that certain certificate possessed by any teachers determine their confidence, dedication, efficiency and effectiveness in implementing the contents contain in the curriculum. According to Akuta (2021), teacher's qualification described the level of education attainment and certificate obtained by the teachers after the completion of a stipulated program that will qualify them to teach at a given level of education. In view of Omaliko and Okpala (2021), teacher's qualifications include academic training such as HND, B.Sc, B.A. and M.A. among others while professionally qualification such as teachers certificates include TCII, NCE and degrees like B.Ed., B.Sc. Ed, B.A. Ed, and M.Ed, among others. It was perceived that variations in the teachers' qualifications significantly influence their ability and effectiveness in Mathematics curriculum implementation. It was observed by the researcher, that both teachers who are professionally qualified and those that are not professionally qualified are employed to teach General Mathematics at the primary and post primary school level of education, in agreement with, Omaliko and Okpala (2021), viewed that teachers who obtained formal qualifications like B.SC, in Mathematics plus a postgraduate Diploma in education are usually seen as better at teaching and understanding the General Mathematics curriculum. Conversely, Oyelekan and Bello (2017), reiterated that teachers in Kwara and Lagos states exhibited strong background in Mathematics, should be allowed to teach Additional Mathematics. Adedayo and Ojo (2020) were of opinion that Additional Mathematics curriculum covers more abstract and complex topics that need to be handled by only trained, experienced Mathematics teachers who possess a strong background in advance Mathematics concepts and pedagogy.

Gender was believed to be an imperative factor to be considered in effective implementation of Mathematics (i.e General and Additional Mathematics) curriculum at Secondary School level in Nigerian Education. According to Adeniji and Lawal (2018), maintain that teachers' gender, whether consciously or unconsciously, would affect how they present content, engage students, build their confidence and evaluate their performance. It was believed that gender dynamics in the classroom often affect teachers' communication styles and expectations, which in turn influence students' performance. It was believed that the variation in teacher's gender has significantly impact teacher's confidence, instructional methodology, instructional presentation and student's participation during Mathematics discourse in the classroom (Zakkamaris & Balash, 2017). In consonant, Eze and Ezeugwe (2018), reiterated that social cultural belief and expectation, professional access and teaching self-efficacy are the factors influencing teachers' capabilities and competence in implementing Mathematics curriculum. At present, there is a sparse research study

that examines the factors behind the difference in gender ability in implementing the curriculum of General and Additional Mathematics in Nigeria. Meanwhile, some finding reveled that female teachers' are effective in the presentation of General Mathematics contents than their male counterparts, Ogunniyi and Fakomogbon (2015) reiterated that female teachers show greater patience and emotional support to the students in presenting General Mathematics contents through the use of more interactive teaching styles such as group work, collaborative tasks and guided discovery approach than their male counterparts. They further restated the impact of conducive classroom situation to students learning abilities by emphasizing that female teacher often encourage inclusive classroom climates that encourage participation from all students regardless of ability and gender. Usman (2021) viewed that male teacher are of greater confidence, technical mastery in presenting complex contents and pose pedagogical confidence in teaching the contents in the higher order topics in Additional Mathematics.

Statement of the Problem

Teachers are the most essential component in the dispensation of knowledge in any classroom situation. It was believed that various qualities possessed by the teachers significantly impact their role during the instructional time. It was believed that the perception of teachers on the curriculum greatly affects how they direct the teaching, what they emphasize and how students learn. It was noticed that some teachers found Mathematics curriculum too difficult, overloaded or complex for their students. This may lead to students' poor understanding and low performance in Mathematics. Despite the curriculum reform, many Mathematics teachers still face challenges with its content, structure, and delivery. It was perceived that many teachers feel that the curriculum is not compressive or practical enough. The perception of teachers on the curriculum appears to make many teachers struggle on how well to present the content to the students and this has reduced students' motivation and participation in various classroom activities that concern with teaching and learning of Mathematics. Hence, this study is aimed at examining the comparative analysis of teachers' perceptions on General and Additional Mathematics Curriculum in Senior Secondary School in Ekiti State.

Purpose of the Study;

The purpose was to:

examine teachers' perceptions on the content of the Mathematics curriculum.

investigate teachers qualification on Mathematics curriculum implementation.

find out whether teachers' gender influence Mathematics curriculum implementation.

Research Hypotheses

Ho1: There is no significant difference between teachers' perception on General Mathematics and Addition Mathematics curriculum in Senior Secondary Schools.

Ho2: There is no significant difference between the teachers' perception on General Mathematics and Additional Mathematics on the basis of qualification.

Ho3: There is no significant difference between teachers' perception on General Mathematics and Additional Mathematics on the basis of gender.

Research Method

The design used for this study was a descriptive research of the survey type. The multistage sampling procedure was adopted to select the sample. The samples of 120 teachers were selected randomly from six out of the sixteen Local Government Areas (LGAs) in the State. Two LGAs were randomly selected from each of the three senatorial districts in the State. All Mathematics teachers in the six LGAs formed the sample for the study. The instrument for the study was a questionnaire titled Teachers' Perceptions of General and Additional Mathematics Curriculum (TPGAMC). Focusing on these three areas; curriculum content, gender and teachers qualification, the

face and content validity of the instrument was carried out by the Mathematics teachers and two experts in Test, Measurement and Evaluation. The reliability of the instrument was ascertained using test re-test method in which the instrument was administered twice on 30 teachers outside the sample. Pearson's Product Moment Correlation was used to ascertain the reliability co-efficient and the reliability coefficient of 0.80 was obtained and this was adjudge high enough to make the instrument reliable to be used for the study. One research's question was generating for the study also one research's hypothesis was raised. The research questions generated were answered using frequencies tools while hypothesis formulated for the study was tested using t-test at 0.05 level of significance.

Results

Table 1: Descriptive Analysis of teachers' perception of General Mathematics curriculum in Senior Secondary Schools N = 126

Items	Mean	Std. Deviation
The general mathematics curriculum is relevant to real-life situations.	3.32	0.88
The general mathematics curriculum is adequately aligned with students' needs and interests	3.52	0.82
Teachers' perceptions of the curriculum can influence student motivation and engagement	3.30	0.93
The general mathematics curriculum focuses more on procedural fluency than conceptual understanding	3.38	0.92
My perception of the general mathematics curriculum influences how I assess students' performance	3.57	0.73
Total	17.10	2.20

Mean Cut-off: 2.50

The results in Table 1 indicated that teachers generally hold a positive perception of the General Mathematics curriculum in Senior Secondary Schools, as all the mean scores are above the cut-off point of 2.50. The highest-rated item was the influence of teachers' perception on student assessment (M = 3.57, SD = 0.73), suggesting that teachers' views strongly shape how they evaluate learners. Similarly, the curriculum was perceived as being adequately aligned with students' needs and interests (M = 3.52, SD = 0.82), while its relevance to real-life situations (M = 3.32, SD = 0.88) and impact on student motivation and engagement (M = 3.30, SD = 0.93) were also positively acknowledged. However, teachers agreed that the curriculum tends to emphasize procedural fluency more than conceptual understanding (M = 3.38, SD = 0.92), pointing to a potential gap in fostering deeper comprehension. Overall, the total mean of 17.10 reflects a favourable perception of the curriculum, though with recognition of areas needing balance between procedures and concepts.

Table 2: Descriptive Analysis of teachers' perception of Additional Mathematics curriculum in Senior Secondary Schools N = 126

Items	Mean	Std. Deviation
The additional mathematics curriculum presents an appropriate level of challenge to students	3.14	0.77
The additional mathematics curriculum prepares students well for advanced mathematics courses	3.18	0.90
Teachers' perceptions of the additional mathematics curriculum influence student engagement	3.17	0.90

I prioritize certain topics in additional mathematics based on perceived importance	2.90	1.04
The additional mathematics curriculum focuses more on abstract concepts than problem-solving	3.42	0.69
Total	15.82	2.22

Mean Cut-off: 2.50

The descriptive analysis in Table 2 showed that teachers generally have a positive perception of the Additional Mathematics curriculum in senior secondary schools, as all the mean scores are above the cut-off point of 2.50. Teachers agreed that the curriculum presents an appropriate level of challenge to students (M = 3.14) and adequately prepares them for advanced mathematics courses (M = 3.18). Similarly, they acknowledged that their perceptions of the curriculum influence student engagement (M = 3.17). However, while teachers indicated that they sometimes prioritize certain topics based on perceived importance (M = 2.90), they strongly agreed that the curriculum places more emphasis on abstract concepts than on problem-solving (M = 3.42). With an overall mean score of 15.82 (SD = 2.22), the results suggest that although teachers view the curriculum as beneficial in preparing students, they perceive an imbalance in its focus, favouring abstract concepts over practical problem-solving approaches

Table 3: Descriptive Analysis of teachers' perception of General Mathematics on the basis of qualification N = 126

Items	Mean	Std. Deviation
Teachers with mathematics-specific qualifications teach general mathematics more effectively	3.48	0.76
Professional development programs improve my qualifications and enhance my instruction I general mathematics	3.33	0.86
Teachers with higher qualifications tend to achieve better student outcome in general mathematics	3.30	0.87
My qualification help me meet the diverse learning needs in general mathematics classes	3.29	0.77
My qualification support me in integrating real-world applications into general mathematics instruction	3.33	0.87
Total	16.71	1.99

Mean Cut-off: 2.50

The results in Table 3 showed that teachers generally hold a positive perception of the influence of qualifications on their effectiveness in teaching general mathematics, as all the mean scores were above the cut-off point of 2.50. The highest-rated perception was that teachers with mathematics-specific qualifications teach general mathematics more effectively (M = 3.48, SD = 0.76), suggesting that subject-specific training strongly enhances teaching quality. Similarly, professional development (M = 3.33, SD = 0.86) and higher qualifications (M = 3.30, SD = 0.87) were perceived as vital in improving instruction and achieving better student outcomes. Teachers also agreed that their qualifications help them address diverse learning needs (M = 3.29, SD = 0.77) and integrate real-world applications into instruction (M = 3.33, SD = 0.87). The overall mean of 16.71 indicates a strong consensus that qualifications positively impact teaching effectiveness and student learning in general mathematics.

Table 4: Descriptive Analysis of teachers' perception of Additional Mathematics on the basis of qualification N = 126

Items	Mean	Std. Deviation
Teachers with advanced mathematics qualifications teach additional mathematics more effectively	3.14	.77
My qualifications help me teach complex mathematical concepts in additional mathematics	3.18	.90
Professional development enhances my qualifications and improves additional mathematics instruction	3.17	.90
My qualifications influence how I use different strategies in teaching additional mathematics	2.90	1.04
Teachers with higher qualifications tend to produce better student learning outcomes	3.42	.69
Total	15.81	2.22

Mean Cut-off: 2.50

The results in Table 4 indicated that teachers generally hold positive perceptions of the influence of qualifications on the teaching of Additional Mathematics, as all the mean scores exceeded the cut-off point of 2.50. Among the items, the highest mean score (M = 3.42, SD = 0.69) shows that teachers strongly believe higher qualifications contribute to better student learning outcomes. Similarly, teachers agreed that their qualifications help them teach complex concepts (M = 3.18, SD = 0.90) and that professional development further enhances their instructional capacity (M = 3.17, SD = 0.90). The lowest mean score was recorded for the influence of qualifications on the use of different strategies in teaching Additional Mathematics (M = 2.90, SD = 1.04), although still above the cut-off, suggesting moderate agreement. Overall, the total mean of 15.81 reflected a favourable perception that qualifications play an important role in teaching effectiveness and student outcomes in Additional Mathematics

Table 5: Descriptive Analysis of teachers' perception of General Mathematics on the basis of gender N = 126

Items	Mean	Std. Deviation
Male and female teachers use different teaching approaches in general mathematics	3.06	1.08
Gender stereotypes influence how teachers interact with students in general mathematics	2.97	1.09
Societal expectations about gender roles affect students' attitudes towards general mathematics	2.75	1.11
Boys and girls respond differently to various teaching methods in general mathematics	2.84	0.98
Teachers' perception of student ability are influenced by gender in general mathematics	3.18	0.89
Total	14.79	2.98

Mean Cut-off: 2.50

The results in Table 5 showed that teachers generally perceive gender as having a moderate influence on the teaching and learning of General Mathematics, as all the mean scores are above the cut-off point of 2.50. Among

the items, the highest mean score was recorded for the perception that teachers' views of student ability are influenced by gender (M = 3.18, SD = 0.89), suggesting that teachers acknowledge some level of bias or differentiation in how they assess male and female students. Similarly, the belief that male and female teachers use different teaching approaches (M = 3.06, SD = 1.08) and that gender stereotypes influence teacher-student interactions (M = 2.97, SD = 1.09) also received relatively high ratings, indicating recognition of gendered influences in instructional practice. However, societal expectations about gender roles (M = 2.75, SD = 1.11) and differences in student responses to teaching methods (M = 2.84, SD = 0.98) were perceived to have a lower but still notable influence. Overall, the total mean score of 14.79 suggested that teachers perceive gender as a significant factor shaping both teaching practices and students' engagement with General Mathematics.

Table 6: Descriptive Analysis of teachers' perception of Additional Mathematics on the basis of gender N = 126

Items	Mean	Std. Deviation
Male and female teachers use different teaching approaches in additional mathematics	3.35	0.97
Societal expectations about gender roles shapen students' attitudes toward additional mathematics	3.07	1.17
Boys and girls respond differently to various teaching methods in additional mathematics	3.05	1.11
Teachers' perception of students' abilities are affected by gender in additional mathematics	2.98	1.08
I use strategies to promote gender equity in additional mathematics education.	2.80	1.15
Total	15.25	2.94

Mean Cut-off: 2.50

The results in Table 6 indicated that teachers generally perceive gender to play a role in shaping teaching and learning in Additional Mathematics, as all the mean scores are above the cut-off mean of 2.50. The highest mean score (M = 3.35, SD = 0.97) suggests that teachers believe male and female teachers use different teaching approaches, while societal expectations about gender roles (M = 3.07, SD = 1.17) and students' differing responses to teaching methods (M = 3.05, SD = 1.11) were also viewed as moderately influential. Teachers were less likely to agree that their own perceptions of students' abilities are affected by gender (M = 2.98, SD = 1.08), and the lowest mean (M = 2.80, SD = 1.15) indicates relatively limited emphasis on actively using strategies to promote gender equity in Additional Mathematics education. Overall, the total mean (M = 15.25, SD = 2.94) reinforces that teachers acknowledge gender differences, but their efforts towards fostering gender equity appear less prioritised

Test of Hypotheses

Ho1: There is no significant difference between teachers' perception on General Mathematics and Additional Mathematics curriculum in Senior Secondary Schools.

Table 7: t-test on teachers' perception of General Mathematics and Additional Mathematics curriculum

Variations	N	Mean	SD	Df	tcal	P
Mathematics	126	17.10	2.20	250	4.596	0.000*
Additional Mathematics	126	15.82	2.22			

*P<0.05

Table 7 showed that the t-cal value of 4.596 is significant because the P value (0.000) <0.05. This implies that null hypothesis is rejected. Hence, there is significant difference between teachers' perception on General Mathematics and Additional Mathematics curriculum in Senior Secondary Schools.

Ho2: There is no significant difference between the teachers' perception on General Mathematics and Additional Mathematics on the basis of qualification.

Table 8: t-test on teachers' perception of General Mathematics and Additional Mathematics on the basis of qualification.

Variations	N	Mean	SD	Df	tcal	P
Mathematics	126	16.71	1.99	250	3.380	0.001*
Additional Mathematics	126	15.82	2.22			

*P<0.05

Table 8 showed that the t-cal value of 3.380 was significant because the P value (0.000) <0.05. This implies that null hypothesis was rejected. Hence, there was significant difference between the teachers 'perception on General Mathematics and Additional Mathematics on the basis of qualification.

Ho3: There is no significant difference between teachers' perception on General Mathematics and Additional Mathematics on the basis of gender.

Table 9: t-test analysis for difference between the teachers' perception on General Mathematics and Additional Mathematics on the basis of gender.

Variations	N	Mean	SD	Df	tcal	P
Mathematics	126	14.79	2.98	250	1.212	0.227
Additional Mathematics	126	15.25	2.94			

P>0.05

Table 9 shows that the t-cal value of 1.212 is not significant because the P value (0.227) > 0.05. This implies that null hypothesis is not rejected. Hence, there is no significant difference between teachers' perception on General Mathematics and Additional Mathematics on the basis of gender.

Discussion

The findings revealed that teachers' perception of the General Mathematics curriculum was positively, particularly regarding its alignment with students' needs and interests and its relevance to real-life applications. The highest-rated perception was that teachers' views of the curriculum significantly influence how they assess student performance. This supports research by Uka (2021), who argued that teachers' perceptions shape classroom practices, assessment strategies, and ultimately students' achievement. Similarly, the perception that the curriculum is aligned with students' needs resonates with the assertion of Odogwu (2015) that relevance and student-centered content are critical for motivation and engagement in mathematics learning. However, the study also found that the General Mathematics curriculum

emphasizes procedural fluency more than conceptual understanding. This aligns with Sharon, (2020), critique that many mathematics curricula globally prioritize rote procedures at the expense of deeper conceptual reasoning, which may affect students' problem-solving competence. Thus, while teachers recognize the curriculum's strengths, they also acknowledge areas requiring improvement for balanced learning outcomes.

Teachers' perceptions of the Additional Mathematics curriculum, however, highlight a different set of concerns. Although the curriculum was seen as adequately preparing students for advanced mathematics and presenting an appropriate level of challenge, it was also perceived to overemphasize abstract concepts at the expense of problem-solving. This finding aligns with Adeniyi and Akanmu (2020), who found that senior secondary students often struggle with Additional Mathematics because of its abstract orientation, which reduces its perceived relevance. Teachers' tendency to prioritize certain topics based on perceived importance suggests attempts to make the subject more accessible to learners. Research by Agwagah and Ezeugo, (2018) affirms that selective teaching practices are common among mathematics teachers who attempt to balance curriculum demands with classroom realities. Overall, while the Additional Mathematics curriculum is perceived as academically rigorous and beneficial for further studies, teachers' concerns point to the need for a stronger emphasis on problem-solving and applied contexts to support student engagement and achievement.

Another key finding is the influence of teachers' qualifications on their effectiveness in teaching both General and Additional Mathematics. Teachers with mathematics-specific or higher qualifications were perceived to teach more effectively, producing better student outcomes in both subjects. This finding is consistent with Akuta (2021), who demonstrated that teacher qualifications and professional development are strongly correlated with instructional quality and student learning. Similarly, professional development was rated highly as a means of improving instructional practices, reflecting the findings of Rosli and Aliwee (2021), who emphasized continuous training for mathematics teachers to address curriculum reforms and diverse student needs. Notably, while qualifications were positively viewed across both subjects, the relatively lower mean score for the influence of qualifications on the use of different strategies in Additional Mathematics indicates that higher qualifications do not automatically translate into pedagogical flexibility. This suggests that teacher training should not only focus on content mastery but also on diverse instructional strategies.

The study also explored teachers' perceptions based on gender, and the results revealed that General Mathematics teachers believed that perceptions of student ability are sometimes influenced by gender and that male and female teachers may use different teaching approaches. These perceptions echo findings by MAN (2022), who reported that implicit gender biases often shape mathematics instruction and teacher expectations of students' performance. However, societal expectations about gender roles and student responses to teaching methods were rated lower; suggesting teachers believe external gender influences are less pronounced in General Mathematics. In contrast, perceptions in Additional Mathematics revealed stronger acknowledgment of gender-based differences in teaching approaches and societal expectations, though fewer teachers reported actively promoting gender equity in their practice. This finding is in line with UNESCO (2022), which highlighted persistent gender gaps in advanced mathematics and STEM education, often reinforced by teacher perceptions and practices.

The hypothesis testing provides further insight into the distinctions between teachers' perceptions of the two curricula. The results revealed a

significant difference between teachers' perceptions of General and Additional Mathematics curricula ($t = 4.596$, $p < 0.05$), suggesting that teachers value General Mathematics more positively, likely due to its relevance and alignment with student needs. This supports research by FRN (2014), who reported that students and teachers generally find General Mathematics more relatable than Additional Mathematics. Similarly, teachers' qualifications significantly influenced their perceptions of both subjects ($t = 3.380$, $p < 0.05$), reaffirming the critical role of professional training in shaping teaching practices and curriculum engagement. However, there was no significant difference in teachers' perceptions on the basis of gender ($t = 1.212$, $p > 0.05$), suggesting that while gender perceptions exist in classroom interactions, they do not significantly alter how teachers view the curriculum itself. This finding resonates with Adeniji and Lawal (2018), who concluded that teacher gender had minimal impact on perceptions of curriculum design, though it could affect interactional practices.

Conclusion

The study concluded that teachers generally hold positive perceptions of both the General Mathematics and Additional Mathematics curricula in senior secondary schools, though their views highlighted some important distinctions. Teachers perceived the General Mathematics curriculum as being more relevant to real-life situations and better aligned with students' needs, while also acknowledging that their own perceptions significantly influenced how they assessed learners. On the other hand, while the Additional Mathematics curriculum was viewed as beneficial in preparing students for advanced studies, it was seen as more abstract in focus, with less emphasis on practical problem-solving. These differences in perception suggest that although both curricula are valued, teachers see General Mathematics as more practical and student-centered compared to Additional Mathematics.

The study further concluded that teacher qualifications play an important role in shaping perceptions of effectiveness in teaching both subjects. Teachers with subject-specific and higher qualifications believed they could deliver instruction more effectively, meet diverse learning needs, and integrate real-world applications, especially in General Mathematics. Professional development was also recognized as an important factor in improving teaching capacity. In terms of gender, teachers perceived that male and female instructors may use different teaching approaches and that societal expectation and stereotypes influence student engagement. However, there was no significant difference in overall perceptions of the two curricula based on gender, implying that qualifications and the nature of the curriculum itself had stronger impacts on perceptions than gender.

Recommendations

The Additional Mathematics curriculum should be revised to include more practical and real-life applications, similar to General Mathematics, so that students can better appreciate its relevance and applicability beyond the classroom.

Continuous training and professional development programmed should be organized for mathematics teachers, with a focus on innovative pedagogical strategies, curriculum integration, and bridging the gap between abstract mathematical concepts and practical problem-solving.

Policies should encourage teachers to pursue higher subject-specific qualifications in mathematics. Institutions and governments should provide incentives such as scholarships or study leave to enhance teacher competence and confidence in teaching both General and Additional Mathematics.

Teachers should be equipped with strategies to counteract societal stereotypes and to promote gender equity in mathematics classrooms, ensuring both boys and girls are equally motivated and supported in learning General and Additional Mathematics.

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