Difficult Contents in the Nigerian Junior Secondary Mathematics Curriculum: Comparative Analysis between Perceptions of Students and Teachers

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Abstract: **This study analyzed perceptions of students and teachers difficult contents in the Junior Secondary Mathematics Curriculum (JSMC) in Obio/Akpor local government area of Rivers State, Nigeria. The study adopted the analytical survey research design with a population of 7,534 students and 20 Mathematics teachers of junior secondary class three students from the 20 public junior secondary schools. Simple random sampling technique was used to select 380 students while census was used to select 20 Mathematics teachers for the study. The Mathematics Content Difficulty Assessment Questionnaire (MCDAQ) was the instrument used for data collection. The mean ($\bar{x}$) criterion cut-off point of 2.50 was used for decision making. The test-retest method and Pearson's Product Moment Correlation (PPMC) were used to obtain the reliability coefficient of 0.86 for MCDAQ. Data obtained were analysed using mean, standard deviation, simple percentage and independent sample t-test to answer the five research questions and test the two null hypotheses. Findings of the study revealed that students and teachers perceived the JSMC contents difficult to learn and teach respectively. Also, there was a significant difference between student and teacher perception of difficult contents in the JSMC but there was no significant difference on the gender perception of students. The study recommended among others that Mathematics teachers should demystify Mathematics learning through effective use of innovative instructional strategies and materials and encourage students to change their perception of Mathematics as difficult and develop positive attitudes and interest towards learning Mathematics to reduce their difficulty level.**

Key words: **Comparative analysis, perceptions, difficult contents, Mathematics, curriculum**

I. INTRODUCTION

Mathematics is one of the core subjects in the basic and post-basic school curriculum in Nigeria. The inclusion of Mathematics as a compulsory subject at the primary and secondary level of education justifies the recognition of Mathematics as being essential for national development. The contributions of Mathematics to the technological, economical, medical and scientific advancement of a nation cannot be disputed. The classification of any nation into developed, developing and under-developed could be measured by the statistics of mathematicians, physicists, engineers, pharmacists, medical doctors, agriculturist and scientists among other key development indices and Mathematics is the gateway to these professions. Mathematics is the nucleus of Science, Technology, Engineering and Medicine (STEM). According to Zalmon, Efet and Ogunsola (2017), Mathematics education is the intersection subject of the study fields of science, technology, engineering, humanities, business, trade and entrepreneurship. In other words, for any nation to achieve their goal of advancing in Science Technology, Engineering, Mathematics and Medicine (STEMM) and other mathematical disciplines, conscious efforts should be made to improve the teaching and learning of Mathematics at all levels of the educational system. However, the standard of Mathematics education in the Nigerian educational system has been very low.

Available empirical evidence indicates that students achievement in Mathematics in senior secondary certificate examinations have been very discouraging (Zalmon & Wonu, 2017; Charles-Ogan, 2004). Several variables have been associated with students' abysmal performance in Mathematics which includes poor parental support (Wonu & Zalmon, 2019), negative student-teacher relationship (Zalmon& Charles-Ogan, 2020), social stratification and motivation (Daso, Zalmon & Obediah, 2020), lecturer, student and parental factors (George, Zalmon & Okafor, 2020), instructional strategies (George & Zalmon, 2019) and content difficulties resulting from non-preparedness of Mathematics teachers to handle the teaching of the curriculum contents as well as insufficient time to teach the overloaded curriculum contents (Iji & Omenka, 2015).Perceived curriculum content difficulty is one of the identifiable factors to students' under-performance in Mathematics. Perception is the ability to see, hear, or become aware of something through senses. Perception is the organization, identification and interpretation of sensory information in order to represent and understand the presented information. Perception involves signals that go through the nervous system, which in turn results from physical or chemical stimulation of the sensory system. The self-perception theory states that individual's perception about a thing, concept, idea or knowledge affect his or her action

(Bem, 1972). The negative attitude of students towards learning Mathematics is a reflection of their perception of the subject. The common parlance of most students is that Mathematics is difficult. This negative perception of students about Mathematics is adversely affecting the teaching and learning of Mathematics at the secondary education level. There are two levels of secondary education in Nigeria; the junior and the senior secondary levels of education (Federal Republic of Nigeria, 2014). Mathematics instruction at both levels of secondary education is guided by the curriculum.

The curriculum is a well-planned, designed and developed programme of instruction in subject specifics. Tamer and Tamer (1975) as cited in Achuonye and Ajoku (2013) defined curriculum as the planned and guided learning experiences and intended learning outcomes formulated through the systematic reconstruction of knowledge and experience under the auspices of the school, for the learners continuous and wilful growth in personal-social competence. Curriculum is a blueprint of an instructional guide while the Mathematics curriculum is a blue print of an instructional guide in Mathematics (Zalmon, Daso & Uranta, 2020). Every school curriculum is designed to achieve the subject-based objectives. The junior secondary Mathematics curriculum is focused on giving learners the opportunity to: acquire mathematical literacy necessary to function in an information age; cultivate the understanding and application of Mathematics skills and concepts necessary to thrive in the ever changing technological world; develop the essential element of problem solving, communication, reasoning and communication within the study of Mathematics; take advantage of the numerous career opportunities provided by Mathematics and become prepared for further studies in Mathematics and other related fields (Nigerian Educational Research and Development Council, 2012). There are several components of the Mathematics curriculum. According to Zalmon, Daso and Uranta (2020), the Mathematics curriculum is a booklet produced by the Nigerian Educational Research and Development Council (NERDC) which contain a plan of Mathematics learning experiences consisting of objectives of teaching Mathematics, themes, sub-themes, topics, performance objectives, content, teacher and learner activities, learning materials and evaluation guide.There are five themes or broad contents of the junior secondary Mathematics curriculum: number and numeration, basic operations, algebraic processes, mensuration and geometry and everyday statistics (NERDC, 2012). This study analyses student and teacher perception of difficult contents in the junior secondary education Mathematics curriculum.

Statement of the Problem

Several factors have been associated with the high failure rate of students in Mathematics examinations. Some of the identifiable factors are poor motivation, negative attitudes, poor quality of instruction, use of ineffective instructional techniques, lack of instructional materials, student-teacher ratio, student-teacher relationship and many more. The

perception of students and teachers of Mathematics content difficulty can influence their attitudes and actions towards learning and teaching Mathematics respectively. Therefore, this study shall find out the perception of students and teachers about the difficult contents in the junior secondary Mathematics curriculum.

II. AIM AND OBJECTIVES OF THE STUDY

The aim of this study is to comparatively analysestudent and teacher perception of difficult contents in the junior secondary education Mathematics curriculum. Specifically, this study shall:

1. Identify difficult contents in the junior secondary Mathematics curriculum as perceived by students.
2. Find out difficult contents in the junior secondary Mathematics curriculum as perceived by teachers.
3. Determine the male and the female students' perception of difficult contents in the junior secondary Mathematics curriculum.
4. Ascertain students' and teachers' percentage perception of difficult contents in the junior secondary Mathematics curriculum.
5. Find out the male and the female students' percentage perception of difficult contents in the junior secondary Mathematics curriculum.

Research Questions

The following research questions guided the study:

1. What are the difficult contents in the junior secondary Mathematics curriculum as perceived by the students?
2. Which contents of the junior secondary Mathematics curriculum do teachers perceive difficult to teach?
3. What are the male and the female students' perception of difficult content in the junior secondary Mathematics curriculum?
4. What percentage of the junior secondary Mathematics curriculum contents do students and teachers perceived difficult?
5. What percentage of the junior secondary Mathematics curriculum contents do the male and the female students perceived difficult to learn?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance to guide the study:

1. There is no significant difference between the students' and teachers' perception of difficult contents in the junior secondary Mathematics curriculum.
2. There is no significant difference between the male and the female students' perception of difficult content in the junior secondary Mathematics curriculum.

III. METHODOLOGY

The study adopted the analytical survey research design with a population of 7,534 (3,655 male; 3,879 female)students and 20 Mathematics teachers of junior secondary class three students from the 20 public junior secondary schools in Obio/Akpor local government area of Rivers State (Rivers State Universal Basic Education Board, 2019). Taro Yamane formula was used to obtain a sample size of 380 students while all the 20 teachers were used for the study. Simple random sampling technique was used to select the 380 students with 19 students from each class while census sampling technique was used to select the teachers. The instrument used to collect data for the study was the Mathematics Content Difficulty Assessment Questionnaire (MCDAQ) constructed by the researchers. The questionnaire consisted of sections A and B. Section A was used to elicit demographic information from the respondents while section B contained 39 items of the junior secondary Mathematics curriculum contents with a four Likert-like rating scale of

Very Difficult (VD), 4 point, Difficult (D), 3 point, Easy (E), 2 point and Very Easy (VE), 1 point. The mean ($\bar{x}$) criterion cut-off point of 2.50 was used for decision making as follows: difficult content; $\bar{x} \geq 2.50$ and easy content; $\bar{x} < 2.50$. Three experts in Mathematics Education validated the instrument.The test-retest method was used to establish the reliability of the instrument. MCDAQ was administered to 20 students who were not part of the sample of the study, as pretest and post-test. The two scores were correlated using Pearson's Product Moment Correlation (PPMC) and the reliability coefficient of 0.86 was obtained. Data obtained were analysed using mean, standard deviation, simple percentage and independent sample t-test to answer the research questions and test the hypotheses.

IV. RESULTS

Research Question 1: What are the difficult contents in the junior secondary Mathematics curriculum as perceived by the students?

Table 1: Mean and standard deviation on the difficult contents in the Junior Secondary Mathematics Curriculum (JSMC) as perceived by the students

S/N	Contents	VD	D	E	VE	Mean	SD	Remark
				n=380				
	Number and Numeration							
1	Whole number	197	96	30	37	3.26	0.99	Difficult
2	LCM	200	120	21	19	3.39	0.82	Difficult
3	HCF	168	149	32	11	3.32	0.76	Difficult
4	Counting in base 2	180	139	32	9	3.36	0.75	Difficult
5	Conversion of base 10 numerals to binary numbers	167	168	16	9	3.37	0.69	Difficult
6	Fractions	194	136	24	6	3.44	0.69	Difficult
7	Rational and non-rational numbers	164	148	34	14	3.28	0.79	Difficult
	Grand mean					3.35	0.52	Difficult
	Basic Operations							
8	Addition and subtraction	171	145	26	18	3.30	0.81	Difficult
9	Addition and subtraction of fraction	151	151	44	14	3.22	0.81	Difficult
10	Multiplication and division of fraction	194	140	19	7	3.45	0.69	Difficult
11	Estimation	189	143	18	10	3.42	0.72	Difficult
12	Approximation	150	168	40	2	3.29	0.68	Difficult
13	Addition of numbers in base 2 numerals	165	137	44	14	3.26	0.82	Difficult
14	Transactions in the homes and offices	169	141	41	9	3.31	0.77	Difficult
15	Multiplication and division of directed numbers	186	126	35	13	3.35	0.80	Difficult
16	Subtraction of numbers in base 2 numerals	206	143	8	3	3.53	0.59	Difficult
17	Multiplication of numbers in base 2 numerals	160	155	23	22	3.26	0.83	Difficult
	Grand mean					3.34	0.55	Difficult
	Algebraic Processes							
18	Uses of symbols	186	126	25	23	3.32	0.86	Difficult
19	Simplification of algebraic expression	109	109	80	62	2.74	1.07	Difficult

20	Simple equations	137	146	44	33	3.08	0.93	Difficult
21	Algebraic expressions	111	127	79	43	2.85	0.99	Difficult
22	Linear inequalities	98	156	69	37	2.88	0.93	Difficult
23	Graphs	83	118	106	53	2.64	0.99	Difficult
24	Factorization	96	123	88	53	2.73	1.01	Difficult
25	Simple equations involving fractions	118	135	55	52	2.89	1.02	Difficult
26	Simultaneous linear equation	129	131	62	38	2.98	0.98	Difficult
	Grand mean					2.90	0.68	Difficult
	Mensuration and Geometry							
27	Plane shapes	159	153	20	28	3.23	0.87	Difficult
28	Three dimensional figures	168	96	68	28	3.12	0.98	Difficult
29	Construction	156	122	61	21	3.15	0.90	Difficult
30	Angles	137	131	76	16	3.08	0.87	Difficult
31	Bearing	129	134	81	16	3.04	0.87	Difficult
32	Construction	113	110	112	25	2.86	0.94	Difficult
33	Similar shapes	115	131	81	33	2.91	0.95	Difficult
34	Trigonometry	110	154	69	27	2.96	0.89	Difficult
35	Area of plane shapes	115	179	32	34	3.04	0.89	Difficult
	Grand mean					3.05	0.62	Difficult
36	Data collection and presentation	103	129	89	39	2.82	0.97	Difficult
37	Probability	102	127	75	56	2.76	1.03	Difficult
38	Measure of central tendency	121	146	58	35	2.98	0.94	Difficult
39	Need of statistics	141	117	74	28	3.03	0.95	Difficult
	Grand mean					2.91	0.81	Difficult
	Total Grand Mean					3.09	0.42	Difficult

Data in table 1 shows that students perceived the contents of the junior secondary Mathematics curriculum difficult to learn (M=3.09; SD=0.42) with specific content difficulties in number and numeration (M=3.35; SD=0.52), basic operations (M=3.34; SD=0.55), algebraic processes (M=2.90; SD=0.68), mensuration and geometry (M=3.05; SD=0.62) and everyday statistics (M=2.91; SD=0.81).

Research Question 2: Which contents of the junior secondary Mathematics curriculum do teachers perceive difficult to teach?

Table 2: Mean and standard deviation on the JSMC contents teachers perceive difficult

S/N	Contents	VD	D	E	VE	Mean	SD	Remark
			n=20					
	Number and Numeration							
1	Whole number	5	6	4	5	2.55	1.15	Difficult
2	LCM	4	6	5	5	2.45	1.10	Easy
3	HCF	6	7	4	3	2.80	1.06	Difficult
4	Counting in base 2	4	5	8	3	2.50	1.00	Difficult
5	Conversion of base 10 numerals to binary numbers	7	6	4	3	2.85	1.09	Difficult
6	Fractions	6	6	6	2	2.80	1.01	Difficult
7	Rational and non-rational numbers	8	6	4	2	3.00	1.03	Difficult
	Grand mean					2.71	0.59	Difficult

	Basic Operations							
8	Addition and subtraction	3	7	6	4	2.45	1.00	Easy
9	Addition and subtraction of fraction	5	5	8	2	2.65	0.99	Difficult
10	Multiplication and division of fraction	6	8	5	1	2.95	0.89	Difficult
11	Estimation	3	9	6	2	2.65	0.88	Difficult
12	Approximation	4	8	8		2.80	0.77	Difficult
13	Addition of numbers in base 2 numerals	5	5	8	2	2.65	0.99	Difficult
14	Transactions in the homes and offices	7	5	7	1	2.90	0.97	Difficult
15	Multiplication and division of directed numbers	8	4	5	3	2.85	1.14	Difficult
16	Subtraction of numbers in base 2 numerals	10	7	2	1	3.30	0.86	Difficult
17	Multiplication of numbers in base 2 numerals	4	7	3	6	2.45	1.15	Easy
	Grand mean					2.74	0.59	Difficult
	Algebraic Processes							
18	Uses of symbols	2	4	7	7	2.05	1.00	Easy
19	Simplification of algebraic expression	1	5	6	8	1.95	0.94	Easy
20	Simple equations	7	4	4	5	2.65	1.23	Difficult
21	Algebraic expressions	5	5	7	3	2.60	1.05	Difficult
22	Linear inequalities	6	6	1	7	2.55	1.28	Difficult
23	Graphs	1	10	2	7	2.25	1.02	Easy
24	Factorization	2	9	2	7	2.30	1.08	Easy
25	Simple equations involving fractions	11	5	4		2.35	0.81	Easy
26	Simultaneous linear equation	9	7	2	2	3.15	0.99	Difficult
	Grand mean					2.43	0.59	Easy
	Mensuration and Geometry							
27	Plane shapes	5	9	2	4	2.75	1.07	Difficult
28	Three dimensional figures	8	4	6	2	2.90	1.07	Difficult
29	Construction	8	10	1	1	3.25	0.79	Difficult
30	Angles	7	7	4	2	2.95	1.00	Difficult
31	Bearing	5	10	5		3.00	0.73	Difficult
32	Construction	9	4	6	1	3.05	1.00	Difficult
33	Similar shapes	7	7	5	1	3.00	0.92	Difficult
34	Trigonometry	10	4	5	1	3.15	0.99	Difficult
35	Area of plane shapes	11	7	2		3.45	0.69	Difficult
	Grand mean					3.06	0.50	Difficult
	Everyday Statistics							
36	Data collection and presentation	7	7	3	3	2.90	1.07	Easy
37	Probability	6	3	7	4	2.55	1.15	Difficult
38	Measure of central tendency	5	4	6	5	2.45	1.15	Easy
39	Need of statistics	9	3	4	4	2.85	1.23	Difficult
	Grand mean					2.69	0.96	Difficult
	Total Grand Mean					2.70	0.26	Difficult

Data in table 2 shows that teachers perceived the contents of the junior secondary Mathematics curriculum difficult to teach (M=2.70; SD=0.26) with specific content difficulties in number and numeration (M=2.71; SD=0.59), basic operations

(M=2.74; SD=0.59), algebraic processes (M=2.43; SD=0.59), mensuration and geometry (M=3.06; SD=0.50) and everyday statistics (M=2.69; SD=0.96).

Research Question 3: What are the male and the female students' perception of difficult content in the junior secondary Mathematics curriculum?

Table 3: Mean and standard deviation on the male and the female students' perception of difficult content in the JSMC

S/N	Contents	Male students, n=160		Female students, n=200	
		Mean	SD	Mean	SD
1	Number and numeration	3.35	0.50	3.35	0.53
2	Basic operations	3.31	0.63	3.34	0.63
3	Algebraic processes	3.13	0.59	3.12	0.57
4	Mensuration and geometry	3.01	0.63	3.07	0.61
5	Everyday statistics	2.81	0.87	2.97	0.75
	Grand mean	3.06	0.42	3.11	0.42

Data in table 3 shows that the female students perceived the junior secondary Mathematics curriculum content to be more difficult to learn (M=3.11; SD=0.42) than the male students (M=3.06; SD=0.42).

Research Question 4: What percentage of the junior secondary Mathematics curriculum contents do students and teachers perceived difficult?

Table 4: Frequency and percentage distribution of the JSMC contents students and teachers perceived difficult

	Teachers, n=20		Students, n=360	
Perception	n	%	n	%
Difficult	16	80.00	330	91.70
Easy	4	20.00	30	8.30
Total	20	100	360	100

Data in table 4 shows the frequency and percentage distribution of the junior secondary Mathematics curriculum contents students and teachers perceived difficult. It shows that 16(80%) of the teachers perceived the Mathematics curriculum content to be difficult while 4(20%) perceived it to be easy. Table 4 also shows that 330(91.70%) of the students perceived the content to be difficult while 30(8.3%) perceived the content to be easy.

Research Question 5: What percentage of the junior secondary Mathematics curriculum contents do the male and the female students perceived difficult to learn?

Table 5: Frequency and percentage distribution of the JSMC contents the male and the female students perceived difficult to learn

	Male, n=160		Female, n=200	
Perception	n	%	n	%
Difficult	146	91.30	184	92.00
Easy	14	8.80	16	8.00
Total	160	100	200	100

Data in table 5 shows the frequency and percentage distribution of the junior secondary Mathematics curriculum contents the male and female students perceived difficult to learn. Table 5 shows that 146(91.3%) of the male students perceived the curriculum content to be difficult while 14(8.8%) perceived it to be easy. Table 5 also shows that 184(92.0%) of the female students perceived the content to be difficult while 16(8.0%) perceived it to be simple.

H_{01}: There is no significant difference between the students' and teachers' perception of difficult contents in the junior secondary Mathematics curriculum.

Table 6: Mean, standard deviation and independent sample t-test on the difference between the students' and teachers' perception of difficult contents in the JSMC

S/N	Contents	Teachers, N=20		Students, N=360		df=378	
		Mean	SD	Mean	SD	t	p-value
1	Number and numeration	2.71	0.59	3.35	0.52	-5.32	0.00
2	Basic operations	2.68	0.70	3.32	0.63	-4.37	0.00
3	Algebraic processes	2.62	0.54	3.12	0.58	-4.33	0.00
4	Mensuration and geometry	3.06	0.50	3.05	0.62	0.07	0.94
5	Everyday statistics	2.69	0.96	2.90	0.81	-1.13	0.26
	Grand mean	2.70	0.26	3.09	0.42	-4.00	0.00

Table 6 shows that there is a significant difference between the students' and teachers' perception of difficult contents in the junior secondary Mathematics curriculum ($t_{(378, \ 0.05)} = -4.00$; $p < .05$).Therefore, the null hypothesis was rejected at 0.05 alpha level.

H_{02}: There is no significant difference between the male and the female students' perception of difficult content in the junior secondary Mathematics curriculum.

Table 7: Mean, standard deviation and independent sample t-test on the male and the female students' perception of difficult content in the JSMC

S/N	Contents	Male, n=160		Female, n=200		df=358	
		Mean	SD	Mean	SD	t	p-value
1	Number and Numeration	3.35	0.50	3.35	0.53	0.23	0.82
2	Basic Operations	3.34	0.56	3.34	0.55	0.31	0.76

3	Algebraic Processes	2.90	0.68	2.89	0.67	0.13	0.90
4	Mensuration and Geometry	3.01	0.63	3.07	0.61	0.96	0.34
5	Everyday Statistics	2.81	0.87	2.97	0.75	1.83	0.07
	Grand mean	3.06	0.42	3.11	0.42	1.15	0.25

Data in table 7 shows that there is no significant difference between the male and the female students' perception of difficult content in the junior secondary Mathematics curriculum $(t_{(358, \ 0.05)} = 1.15; \ p > .05)$. Hence, the null hypothesis was retained at 0.05 alpha level.

V. DISCUSSION OF FINDINGS

Difficult contents in the junior secondary Mathematics curriculum as perceived by the students

Data in table 1 shows that students perceived the contents of the junior secondary Mathematics curriculum difficult to learn with specific content difficulties in number and numeration, basic operations, algebraic processes, mensuration and geometry and everyday statistics. Zalmon, Efet and Ogunsola (2017) reported that students perceived 33% of the senior secondary Mathematics curriculum content difficult to learn with specific difficulties in geometry and introductory calculus while number and numeration, algebraic processes and statistics were easy contents. Zalmon and George (2020)found out that students perceived 88.20% of the Further Mathematics Curriculum (FMC) content difficult to learn with learning difficulties in all theFMC themes of pure mathematics, coordinate geometry, statistics, mechanics and operations research.

Difficult contents in the junior secondary Mathematics curriculum as perceived by the teachers

Data in table 2 shows that teachers perceived the contents of the junior secondary Mathematics curriculum difficult to teach with specific content difficulties in number and numeration, basic operations, algebraic processes, mensuration and geometry and everyday statistics. Zalmon and George (2018) indicated that Mathematics teachers perceived 14% of the senior secondary Mathematics curriculum content difficult to teach with specific content difficulty in introductory calculus.

The male and the female students' perception of difficult content in the junior secondary Mathematics curriculum

Data in table 3 shows that the female students perceived the junior secondary Mathematics curriculum content to be more difficult to learn than the male students. Data in table 5 shows the frequency and percentage distribution of the junior secondary Mathematics curriculum contents the male and female students perceived difficult to learn. Table 5 shows that 191.3% of the male students perceived the curriculum content to be difficult while 8.8% perceived it to be easy. Table 5 also shows that 92.0% of the female students perceived the content to be difficult while 8.0% perceived it to be simple. Data in table 7 shows that there is no significant

difference between the male and the female students' perception of difficult content in the junior secondary Mathematics curriculum. Zalmon, Efet and Ogunsola (2017) indicated that students perceived 33% of the senior secondary Mathematics curriculum content difficult with content difficulty higher in the female (31%) category than their male (30%) counterparts. Algebraic processes and number and numeration were the easiest themes of the curriculum content for the male (83%) and the female (84%) students respectively. Zalmon, Efet and Ogunsola(2017) also found out that there was no significant difference between the male and the female students' perception of the difficult contents in the senior secondary Mathematics curriculum.

Difference between the students' and teachers' perception of difficult contents in the junior secondary Mathematics curriculum

Data in table 1 shows that students perceived the contents of the junior secondary Mathematics curriculum difficult to learn. Data in table 2 shows that teachers perceived the contents of the junior secondary Mathematics curriculum difficult to teach. Data in table 4 shows the frequency and percentage distribution of the junior secondary Mathematics curriculum contents students and teachers perceived difficult. It shows that 80% of the teachers perceived the Mathematics curriculum content to be difficult while 20% perceived it to be easy. Table 4 also shows that91.70% of the students perceived the content to be difficult while 8.3% perceived the content to be easy. Table 6 shows that there isa significant difference between the students' and teachers' perception of difficult contents in the junior secondary Mathematics curriculum. Zalmon and George (2018) revealed that students and Mathematics teachers perceived 33% and 14% of the Senior Secondary Mathematics Curriculum (SSMC) content difficult respectively with a significant difference between student and teacher perception of content difficulty in the SSMC.

VI. CONCLUSION

Analysis of student and teacher perception of difficult contents in the Nigerian Junior Secondary Mathematics Curriculum (JSMC) revealed that students and teachers perceived the JSMC contents difficult to learn and teach respectively. There was a significant difference between student and teacher perception of difficult contents in the junior secondary Mathematics curriculum but there was no significant difference on the gender perception of students.

VII. RECOMMENDATIONS

The study recommended that:

1. Mathematics teachers should demystify Mathematics learning through effective use of innovative instructional strategies and materials and encourage students to change their perception of Mathematics as difficult and develop positive attitudes and interest towards learning Mathematics to reduce their difficulty level.

2. Teachers of Mathematics without proper qualification should be trained and re-trained on the contents and pedagogy of Mathematics to mitigate their content difficulties.

3. Teachers should be committed to effectively teaching Mathematics to the understanding of the students using appropriate mathematical pedagogies.

4. Teachers should encourage the female and the male students to perceive Mathematics as a learner-friendly subject.

5. Proprietors of schools should engage qualified Mathematics teachers for the teaching of Mathematics in junior secondary schools.

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