# Gender-Based Media Platform Adjustment and Achievement of Students in Senior Secondary School Mathematics in Rivers West Senatorial District

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**Abstract**
The study investigated gender-based media platform adjustment and achievement of students in senior secondary school mathematics in Rivers West Senatorial District. A descriptive survey research design was adopted. Two null hypotheses guided the study. The population of the study was all the senior secondary school two students in Rivers West Senatorial District. The sample of the study was 400 students (200 males and 200 females) selected from 8 schools through the simple random sampling technique. The Media Platform Learning Adjustment Scale and Mathematics Achievement Test were developed by the researchers for data collection. While the Mathematics Achievement Test was given to an expert in Mathematics Education, the Media Platform Learning Adjustment Scale was given to two experts in Measurement and Evaluation and Technology Education at Ignatius Ajuru University of Education, Port Harcourt for face and content validations. The alpha coefficient index for the Media Platform Learning Adjustment Scale was 0.74 using R-studio, while the Mathematics Achievement Test yielded a reliability coefficient of 0.76 by the test-retest method. An Independent sample t-test was used to test the null hypotheses at a 0.05 level of significance. Results showed that: Male and female students do not significantly differ in their adjustment to media platform instruction. It was also found that both male and female students do not significantly differ in their mathematics achievement due to their adjustment to media platform instruction. It was recommended that schools should incorporate media platform instruction in their academic calendar for continuous learning and improvement in mathematics achievement among students.

**Keywords:** Media platform, Adjustment, Mathematics, Achievement, Gender

## Introduction
Media is how a large audience receives information and entertainment through the radio, television newspaper and internet platforms. A Media platform is a service, site or method that delivers media to an audience. Media platform adjustment is a shift towards the media to mitigate the effects of external or internal factors. For instance, during the hit of COVID-19, the educational system faced a lot of challenges nationwide over providing alternative methods of organizing teaching and learning for students. Mark et al. (2020) observed that due to the national closure, around 1.3 billion youngsters were not in school and had to rely on remote learning. For the national educational system to meet the challenge of remote learning for out-of-school children, Multiple Indicator Cluster Survey (MICS) data was used to gain insight into how to ensure every child has equal opportunity to learn remotely. It was on this standpoint that UNICEF announced her determination to encourage governments to keep funding additional distant learning methods, such as the use of radio and television broadcasts to reach all pupils of school age and push for creative ways to ensure connectivity for every school and every student. The need for the incorporation of media platforms and social media, in particular, cannot be overstressed because social media platform helps organisations and people with similar interests, such as students, to collaborate on initiatives outside of the classroom (Harchekar, 2017) and WhatsApp and YouTube were mostly used (Bhandarkar et al., 2021).

Adjustment is a psychological construct used to describe a process in which an individual or group look for support to be in peace, or mitigate the effect of internal or external factors in an attempt to meet up with needs. Khabirul and Ujjwal (2017) looked at adjustment as a steady state of existence in which all people's needs-personal, biological, emotional, psychological, social, and educational mostly met by the demands of the environment. Carter as cited in Khabirul and Ujjwal (2017) described adjustment as the process of identifying and embracing behavioural patterns that are appropriate for the current environment or any changes it may undergo. Suraj (2016) opined that adjustment is a response to the challenges and expectations that an individual experiences from their social environment. The individual may have to respond to internal or external forces.

In 2020, educational opportunities which are the yearnings of the Nigerian populace were faced with the coronavirus pandemic that nearly ravaged the whole world as well as the collapse of academic activities of the school system in the primary, secondary and tertiary. Adelakun (2020) observed that due to COVID-19, the majority of Africa's 54 countries currently have confirmed cases and death tolls. Several of these countries closed their borders and prohibited foreign travel, and both domestic and international trade drastically decreased. In response, the majority of African nations, including the Democratic Republic of the Congo, Rwanda, South Africa, Tanzania, and Nigeria imposed a total lockdown. However, to meet the learning needs of students and how they can achieve them, a lot of adjustments were made. The Ministry of Education adjusted the school timetable after the lockdown, The West African Examination Council Adjusted her timetable. Some students were made to attend school in the morning while some other students attended school in the afternoon to ensure strict observance of social distancing order. To restrict the transmission of SARS-COV-2 and enforce social distancing, the Federal Government of Nigeria ordered companies, organisations, and schools in the Federal Capital Territory (FCT), Lagos, and Ogun States to close for two weeks starting on March 30, 2020, at 23:00 hours (FGN, 2020). Other adjustments made were provision for students to learn through radio and television platforms. All these adjustments were aimed at ensuring that students continue to learn new skills while at home.

Achievement is a term used to describe the accomplishment of a task, fulfilment of a need or purpose, or reaching a goal or standard through an effort for a stipulated period. Academic achievement means the fulfilment of an educational or academic goal or outcome. Mehta in Khabirul and Ujjwal (2017) viewed academic achievement as the academic performance of student/students in both curricula and co-curricular activities. When student's activities are considered in any learning environment, be it virtual or face-to-face, the ability of the student to adjust, to achieve when being faced with a task will point to the teacher that learning took place.

Nair as cited in Suraj (2016) examined the impact of several areas of adjustment on secondary school pupils' underachievement in biology. A comparison of the mean scores on attitudinal and adjustment variables across overachievers, regular achievers, and underachievers led to the conclusion that emotional, social, and home adjustments all had an impact on accomplishment. Mehrotra as cited in Suraj (2016) examined the connections between academic success, IQ, socioeconomic position, anxiety, and personality adjustment. They discovered a positive correlation between academic accomplishment and the degree of adjustment. However, none of these studies looked at media platform adjustment and achievement of students in senior secondary school mathematics in Rivers West Senatorial District.

**Statement of the Problem**
The coronavirus pandemic that nearly ravaged the entire world necessitated the National Center for Immunization and Respiratory Diseases in 2020 to release and order asking the Nigerian Populace to observe social distancing. The reason was to reduce the spread of the virus. In this regard, schools in Nigeria including Rivers State were closed when schools were not meant to be closed. This brought a lot of worries to stakeholders in education including the parents and students. Meanwhile, the instructions received through face-to-face contact could no longer be used sequel to the social distancing order. Students were to be prepared adequately for National and International Examinations. The radio and television platforms were found to be relevant after careful brainstorm as a means of providing instructions to students. Mathematic\s is an abstract subject and students are used to learning it through the monitoring of the school using the face-to-face method of interaction. This study tends to assess how

students were able to adjust to the media platform of instruction in senior secondary mathematics in Rivers West Senatorial District.

**Purpose of the Study**

The purpose of the study was to investigate gender-based media platform adjustment and achievement of students in senior secondary school two mathematics in Rivers West Senatorial District. Specifically, this study sought to determine:

1. How male and female students respond to media platform adjustment in learning mathematics.
2. If mathematics achievements of male and female students who adjusted to media platform instruction differ.

**Hypotheses**

The following null hypotheses guided the study:

H01: There is no significant mean difference between male and female students who adjusted to media platform in learning mathematics.

H02: There is no significant mean difference in mathematics achievements of male and female students who adjusted to media platform instruction.

**Methodology**

The study adopted a descriptive survey research design. Dike (2017) viewed descriptive survey research design as an attempt to gather and interpret data about a social institution, an event, a group or an area. The descriptive survey research design was appropriate for this study because the study sought to investigate gender-based media platform adjustment and achievement of students in senior secondary school mathematics in Rivers West Senatorial District, without manipulating the variables. The population of the study covered all the senior secondary school students in Rivers West Senatorial District, Rivers State of Nigeria. A simple random sampling technique was used to select 8 schools from the eight Local Government Areas that constitute the Rivers West Senatorial District. A simple random sampling technique was used to select 50 students (25 males and 25 females) in each of the 8 schools in Rivers West Senatorial District, giving the sample size of 400 students (200 males and 200 females) used for the study. A questionnaire and achievement test were administered to the students at the same time. The two instruments are the Media Platform Learning Adjustment Scale (MPLAS) and the Mathematics Achievement Test (MAT) developed by the researchers. The Media Platform Learning Adjustment Scale (MPLAS) contained 13 items prepared on a four-point Likert scale ranging from Very Well Adjusted (VWA) = 4, Moderately Adjusted (MA)=3, Adjusted =2 and Unadjusted (UA) = 1. The Mathematics Achievement Test (MAT) was a 20-item multiple choice test with options A to D. One option was the answer while the other three options were distracters. The Mathematics Achievement Test was given to an expert in Mathematics Education for face and content validation, while the Media Platform Learning Adjustment Scale was given to two experts in Measurement and Evaluation and Technology Education in Ignatius Ajuru University of Education, Port Harcourt for face and content validation. For the reliability coefficients, an alpha coefficient index of 0.74 was obtained for the Media Platform Learning Adjustment Scale using R-studio, while the Mathematics Achievement Test yielded a reliability coefficient of 0.76 by the test-retest method. An Independent sample T-test was used to test the null hypotheses at a 0.05 level of significance.

**Results**

**Hypothesis 1:** There is no significant mean difference between male and female students who adjusted to media platform instruction.

**Table 1: Summary of Independent Sample T-test for male and female students who adjusted to Media Platform Instruction**

| Gender | N | $\bar{X}$ | SD | T | Df | P | α | Decision |
|---|---|---|---|---|---|---|---|---|
| Male Students | 200 | 38.96 | 4.72 | | | | | |
| | | | | -0.182 | 398 | 0.856 | 0.05 | Do not reject Ho |
| Female Students | 200 | 39.04 | 4.05 | | | | | |

Table 1 shows the summary of the independent sample t-test for male and female students who adjusted to the media platform for instruction. The result revealed that at 0.05 level of significance and degree of freedom of 398, t-value = -0.182 and p-value = 0.856. Since at 0.05 alpha level, p>0.05, the null hypothesis that "there is no significant mean difference between male and female students who adjusted to media platform for instruction" was therefore not rejected. This implies that male and female students do not differ in their adjustment to media platforms for instruction.

**Hypothesis 2:** There is no significant mean difference in mathematics achievements of male and female students who adjusted to media platform Instruction.

**Table 2: Summary of Independent Sample T-test of Mathematics Achievements of male and female students who Adjusted to Media Platform Instruction**

| Gender | N | $\bar{X}$ | SD | t | Df | P | α | Decision |
|---|---|---|---|---|---|---|---|---|
| Male Students | 200 | 32.88 | 8.80 | | | | | |
| | | | | 0.791 | 398 | 0.429 | 0.05 | Do not reject Ho |
| Female Students | 200 | 32.09 | 11.06 | | | | | |

Table 2 shows the summary of the independent sample t-test of mathematics achievement of male and female students who adjusted to media platform instruction. The result revealed that at 0.05 level of significance and degree of freedom (df) of 398, t-value = 0.791 and p-value = 0.429. Since the p>0.05, the null hypothesis that there is no significant mean difference in mathematics achievement of male and female students who adjusted to media platform instruction was therefore not rejected. This indicates that male and female students do not significantly differ in their mathematics achievement due to their adjustment to media platform instruction.

**Discussion**
Results in Table 1 showed that there is no significant mean difference between male and female students who adjusted to media platform instruction, which implies that male and female students do not significantly differ in their adjustment to media platform instruction. This finding is in alignment with Carter as cited in Khabirul and Ujjwal (2017) who maintained that the process of identifying and embracing behavioural patterns appropriate for the surroundings or any changes to the environment is known as adjustment. Khabirul and Ujjwal (2017) noted that when a person's personal, biological, emotional, psychological, social, and educational requirements are mostly met by the demands of the environment, adjustment becomes a stable state of existence. Furthermore, Harchekar (2017) clarified that social media motivates groups with similar interests, like students, to collaborate on initiatives outside of the classroom; because social medial platforms are easily accessed (Azizi et al., 2019) hence information and news can be gotten at ease (Gedik & Cosar, 2020).

It was also revealed in Table 2 that there is no significant mean difference in mathematics achievement of male and female students who adjusted to media platform instruction indicating that male and female students do not significantly differ in their mathematics achievement due to their adjustment to media platform instruction. To support the finding of this study, Mehrotra as cited in Suraji (2016) examined the relationship between intelligence, socioeconomic status, anxiety, personality modification and academic success and reported a favourable correlation between academic success and the adjustment level of the participants. To further buttress the result of this study, Nair in Suraj (2016) who examined the impact of several adjustment domains on secondary school students' poor performance in biology concluded that emotional, social, and home adjustment had an impact on students' biology performance. This result also agreed with Raya et al. (2023) but disagreed with Sivakumar (2020).

**Conclusion**
The findings of the study showed that male and female students do not differ in terms of their adjustment to media platform instruction, and they do not also differ significantly in their mathematics achievement due to their adjustment to media platform instruction. Hence, it was concluded that adjustment to media platform instruction is a learning strategy or platform through which male and female students can compete favourably with one another, as well as be at par in their achievement scores in mathematics in particular.

**Recommendations**

The following recommendations were made:

1. All students irrespective of gender should embrace media platform instruction as a means of expounding their learning opportunities for enhanced academic achievement, especially during the pandemic.
2. Schools should incorporate media platform instruction in their academic calendar for continuous learning and improvement in mathematics achievement among students.

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