AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.16 (1), September-December, 2025 https://ajemates.org

GENDER BASED DIFFERENCES ON THE EFFECT OF RUBRICS ON SECONDARY SCHOOL STUDENT'S ACHIEVEMENT AND TRANSFER OF LEARNING IN ECONOMICS IN AGBANI EDUCATION ZONE OF ENUGU STATE

Chinenyenwa Juliet Ezeugwu
chinnykings22@gmail.com; 07033905563
Department of Social Science Education, University of Nigeria, Nsukka, 410001, Nigeria

ABSTRACT

This research examined how gender interacts with the impact of rubrics on students' performance and learning transfer in Economics. The study was guided by two research questions and two null hypotheses. It utilized a non-equivalent pretest posttest control group quasi-experimental design, incorporating one treatment and one control group. The sample comprised thirty-two SSII Economics students from two schools. Two intact classes were randomly chosen and assigned to the experimental and control groups. For data collection, two instruments were used: the Economics Achievement Test (EAT) and the Economics Transfer of Learning Test (ETLT), both developed by the researcher. The validity and reliability of these instruments were established. The reliability of the EAT was assessed using the scorer reliability measure, while the Spearman rank correlation coefficient (r) was used for its calculation. The reliability index for the EAT was found to be 0.70, which was significant at the 0.05% level. The internal consistency estimate for the ETLT was determined using Cronbach's Alpha (α), yielding a value of 0.80. Data obtained were analyzed and interpreted using means, standard deviation, and analysis of covariance (ANCOVA). The findings indicated that gender was a significant factor in student achievement but not in their learning transfer. Male students outperformed female students. There was no significant interaction effect of teaching strategies and gender on students' achievement or transfer of learning in Economics.

Keywords: Gender, Rubrics, Secondary School, Academic Achievement, Transfer of Learning, Economics

Introduction

In Nigeria, both teachers and students view Economics as a vital subject, taught at the senior secondary school level. Economics deals with human behavior, examining how individuals earn a living and make choices among alternatives to meet their needs. It emphasizes the study of businesses and government activities aimed at producing goods and services to satisfy human desires. The subject of Economics focuses on human decision-making in selecting among options. Since Economics was first introduced as a school subject for the West African School Certificate Examination in 1967, the number of schools offering it and the number of

candidates taking the examination have seen substantial growth. Economics is classified as one of the elective subjects to be studied at the Senior Secondary School (SSS) level under the updated National Policy on Education. The curriculum for this subject has been developed by the Comparative Education Study and Adaptation Centre (CESAC) to align with the demands of the new educational framework. The primary guiding principle of this curriculum is to equip Senior Secondary School graduates with essential knowledge and skills to understand the nature of economic challenges in society. Accordingly, the Nigerian Educational Research & Development Council (NERDC) set the following objectives for the Economics course in 2008.

These objectives aim to provide students with fundamental Economic principles needed for practical living and further education, to prepare and motivate students to manage scarce resources wisely and efficiently, to foster respect for the dignity of labor along with an appreciation of the economic, cultural, and social values in our society, and to enable students to acquire knowledge that can practically address the economic issues faced by society.

As noted by Adu (2004), studying Economics fulfills a significant role in contemporary life. It provides us with information and helps predict the potential outcomes of specific behaviors; it aids in determining which of various alternatives to pursue. It encourages individuals to make informed choices that will effectively satisfy their needs in a context of unlimited wants and limited resources. According to Obemeata (2005), Economics holds various benefits for students, which include: Cultural Values: - Economics possesses inherent qualities that make it appealing as an academic subject; for instance, it is highly logical. It connects learners to the essentials of daily life and addresses topical issues such as the International Monetary Fund (IMF) and the Structural Adjustment Programme (SAP). Intellectual Training: - Economics also contributes to intellectual development, as it encourages examining issues from fresh perspectives that may be unfamiliar to many. It is not merely a body of knowledge but a method, a way of thinking that equips individuals to reach sound conclusions. Vocational Training: - The practical aspects of Economics make it appealing to students. The subject offers direct applicability in various sectors of industry and commerce. The fundamental idea behind this is to present Economics as a subject relevant to daily life. Therefore, efforts have been made to connect theoretical principles of the subject with their real-world applications. This curriculum has been structured as a teaching syllabus that includes developed teaching schemes and recommended strategies to enhance the teaching and learning experience.

This method is intended to facilitate the effective management of the subject in the classroom by novice or untrained teachers while also reinforcing the pedagogical knowledge of trained educators. In the latest review, the prior twenty-six (26) themes have

been reorganized into 16 themes, encompassing 49 topics distributed across the three years of senior secondary based on the complexity of subjects and the total instructional time available each year: SSI includes 16 topics, SSII consists of 18 topics, and SSIII has 15 topics.

The Chief Examiner's report from 2009 noted that students perform poorly on many questions regarding the Concept of Demand and Utility theory, resulting in unsatisfactory outcomes. It was found that a majority of students chose not to answer this question, and among those who did, scores were generally low. In particular, candidates struggled to interpret and calculate values from graphs. Additionally, some students confused the explanation of the law of diminishing marginal utility with that of diminishing marginal returns, as required by the question. Regarding assessment, both continuous evaluation and final exams will serve as sufficient methods of assessment for this subject. Nevertheless, teachers are expected to engage students in discussions about significant Curriculum Innovations in Secondary School Economics during lessons. When economics was first introduced into the secondary school curriculum, its popularity surged due to unexpectedly positive results from the initial schools that participated in the West African Senior School Certificate Examination [WASSCE]. However, currently, there is a high failure rate in the subject, which the WAEC Chief Examiners Report (2009) indicated was consistent with previous years' standards. It mentioned that the questions were straightforward and aligned with the syllabus. Nonetheless, there was no noticeable improvement in the overall performance of candidates compared to those in prior years. A summary of perceived weaknesses among candidates includes poor expression, inadequate presentation of pertinent materials, misinterpretation of question requirements, insufficient knowledge of subject matter, and a lack of ability to create appropriate diagrams (WAEC Chief Examiner Report, 2015).

These weaknesses can be addressed if students understand exactly what is expected of them through the use of rubrics in answering questions. Yet, the learning outcomes in Economics suggest that both teachers and students do not prioritize the teaching and learning of this subject, making mastery a challenging endeavor. As a result, students have consistently underperformed in Economics across various examinations. Examining student performance in public exams, such as the West African Senior School Certificate Examination, indicates that the objectives have not yet been fully met. The poor performance of students in Economics during the senior secondary school certificate exams, as highlighted in the Chief Examiners Report (2015), revealed that the expected knowledge and skills, including graphical analysis, terminology usage, and elaboration of points, have not been completely achieved. It is on this foundation that the researcher aims to conduct this study in order to address the discrepancies perceived by the students.

Occasionally, students pose questions about assignments or tests such as, "I didn't understand what you wanted" or "Why did her paper receive an 'A' while mine got a 'C'?" It is essential for students to comprehend the expectations that teachers have for them in order to succeed in course assignments, and it is crucial to grasp the criteria utilized to assess their success in meeting those objectives. The importance of students knowing what is required of them in exams, assignments, or tests cannot be overstated; hence, rubrics are indispensable in every school subject.

Krashen (1981) states that reduced mental anxiety and physical fatigue lead to increased output. During assessments, students face various challenges, especially when taking exams. Furthermore, when assigned projects or tasks, the mental anxiety students experience can be just as intense as during examinations. This stems from their uncertainty about where to focus, what to seek, and how much importance to assign to different aspects of an assignment. When students understand what needs to be included and what should be excluded, as well as how to prioritize different components, they experience a sense of relief and can produce their best work. It also grants them a feeling of independence and autonomy when they are aware of what they need to do and the reasons behind it. Therefore, this study examines the use of rubrics as an effective method for teaching and evaluating students' performance.

Rubrics serve as a tool for assessing, assisting, facilitating, guiding, coaching, and scoring students' performance or products in response to specific tasks and conditions. Teaching students using rubrics can reveal the standards pertinent to your discipline or field, set benchmarks for quality work for students to aspire towards, assist students in identifying and establishing the attributes of "good" work, establish communication channels between teachers and students, teach students how to give and receive feedback, and encourage reflection on the implications of performing at certain levels within real-life contexts (Huba and Freed, 2000).

Rubrics are frameworks that support the assessment process by clarifying expectations, delivering targeted ongoing feedback, and providing grading (Andrade & Du, 2005). A "rubric" is characterized as a "document that specifies the expectations for an assignment by enumerating the criteria or what is significant and depicting levels of quality ranging from excellent to poor" (Andrade and Du, 2005, p. 1). Beyond being regarded as an "effective" instrument for measuring, evaluating, and reporting student achievement, rubrics are also crafted to direct students' learning, inform teachers' instruction, guide course development, and assist administrators' program evaluations (Glickman-Bond and Rose, 2006). Consequently, rubrics are recognized as direct assessment instruments that contribute to answering the fundamental queries driving outcome assessments: "how students learn, what students learn, how student learning is assessed, and how the results of assessments are utilized" (Glenn, 2005, p. 1).

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.16 (1), September-December, 2025 https://ajemates.org

Rubrics "provide a guideline and clearly outline what is expected." "Students understand the standards when completing assignments" (Bolton, 2006). This aids students in concentrating on essential content while minimizing their efforts to incorporate extraneous material into assignments. Rubrics offer a straightforward means of communicating and developing our objectives with students and the criteria we employ to evaluate how effectively students have achieved them. Although educators and their students have long recognized the benefits of assessment rubrics, most schools have largely overlooked their value. These versatile scoring tools for evaluating student work and performances function in various ways to promote the objectives of an educational program. Furthermore, rubrics enhance teaching, offer feedback to students, contribute to effective assessment, and serve as a valuable resource for program enhancement. Rubrics define evaluation criteria (or grading standards) based on the anticipated outcomes and performances of students. Usually, rubrics are applied in grading written assignments or oral presentations; however, they can also be utilized to assess any form of student performance. Each rubric consists of a set of scoring criteria and point values linked to these standards. In most cases, the criteria are categorized so that instructors and students can distinguish between performance levels within the categories. In a classroom setting, rubrics provide an external benchmark of "objectives" against which students' performance can be evaluated. Nowadays, educators use rubrics to denote a behavioral category that can be employed to assess performance.

Contemporary rubrics entail establishing a standard and a descriptive statement that illustrates how to achieve that standard. For instance, a rubric for evaluating an essay would detail everything a student must include to earn a specific grade on that assignment. Typically, the rubrics would also outline what is necessary to reach varying performance levels, such as the requirements for an A or B, and so on. Rubrics have the capacity to assist students in grasping the objectives for their learning and the standards of quality required for a specific assignment, in addition to helping them make reliable judgments about their own work that can guide revisions and improvements. (Julhas Uddin, 2014).

Assessment is a fundamental concept without which it is impossible to gauge students' achievement. It is equally challenging for a teacher to assess their effectiveness in conveying knowledge to students accurately. Additionally, the utilization of rubrics significantly influences students' performance, particularly in Economics classrooms. It is a well-known fact that no two minds function identically. Students might focus on their particular areas during a performance, while teachers may have different priorities. Thus, rubrics, with their structured guidance, can help minimize these differences in perception. In addition, rubrics assist students in organizing their performance correctly. Moreover, they can save students precious time during

performances by preventing them from concentrating on irrelevant points. Rubrics can enhance the academic achievement of students.

The transfer of learning is crucial and it is essential for researchers, educators, and others to understand how to teach for transfer. The concept of transfer is rarely defined; however, it remains one of the most critical objectives we can impart to our students. The ultimate aim is for students to be capable of applying their knowledge and skills both inside and outside the classroom, particularly to new situations. There are several types of knowledge transfer, but the one relevant to this study is positive transfer, which occurs when learning in one situation enhances related performance in another context.

The ultimate aim of transfer, as stated by the Nigerian Educational Research and Development Council (NERDC) in 2006, is for students to apply the knowledge they acquire in school to real-life situations such as at home, in their communities, and in the workplace. To facilitate this transfer of knowledge to settings outside of school, NERDC (2006) has outlined guidelines to help educators understand the essential skills students need to succeed in these environments, which include: Collaboration: Various research studies indicate that much of the work done outside of school occurs in groups. Students must gain experience in collaborative efforts to effectively transfer their knowledge to non-classroom contexts. Use of tools: Many assignments in school require students to rely on their cognitive abilities, while numerous tasks outside of school necessitate and allow the use of appropriate tools. Increasing students' exposure to practical and relevant tools, such as technology, will enhance their ability to transfer skills to non-classroom environments.

As a result, this study aims to demonstrate how students can apply what they have learned about the theory of demand to utility theory. The academic success of a child in any subject can be attributed to various factors. According to the studies by Uwameiye, Guobadia, Olaitan, Obiaha, and Nwachukwu, as referenced in Idialu (2013), factors responsible for low achievement may include socio-economic status, gender, the school environment, ineffective teaching methods, insufficient resources, and limited funding. These factors, as identified by these researchers, can have a positive or negative impact on a child's academic success.

One factor of particular interest in this study is the students' gender. Gender is a variable that this research will focus on. The concept of gender is socio-cultural and is shaped by societal expectations based on being male or female. Gender has a significant psychological basis and refers to specific cultural behaviors that are linked to each sex. It does not solely denote male or female but encompasses the cultural characteristics associated with both. According to Nnach (2007), individuals are influenced by the behaviours society anticipates from them according to their gender. In reality, traditional beliefs lead to differences in expectations between males

and females. Consequently, these expectations can vary significantly between the sexes. Therefore, gender pertains to social roles, cultural expectations, and beliefs about the inherent differences between males and females. Numerous debates have arisen among researchers regarding whether gender impacts student performance. Building on this comprehensive explanation, the researcher seeks to investigate the interaction between gender and its influence on students' achievement and learning transfer in Economics. Thus, this study represents a timely effort to assess whether rubrics affect students' performance.

Statement of the Problem

Numerous studies have explored the effectiveness of rubrics in higher education; however, there is a lack of research at the secondary school level in Nigeria that is accessible to the researcher. The secondary school level serves as a foundational stage for students preparing for higher education. Alleviating mental anxiety prior to and during examinations can enhance students' academic performance. The researcher observed a continuous decline in the number of students registering for Economics in the West African Examination Council (WAEC) within the Agbani Education Zone, attributed to poor performance in the subject. This situation arises from students' uncertainty regarding where to focus their efforts, what aspects to prioritize, and how much emphasis to place on different components of an assignment. The use of rubrics could eliminate this confusion that exists in students' minds. Teachers often do not clearly communicate the essential requirements for success in Economics examinations. When students understand what they need to include, what they can exclude, and the relative importance of different elements, they experience a sense of relief and are better able to perform at their highest potential. In the absence of students' awareness of these criteria or expectations, their performance will likely continue to deteriorate. Thus, it is crucial to provide a sustainable solution. This study aims to investigate the impact of rubrics on secondary school students' achievement and their ability to transfer learning in Economic concepts. Therefore, this research is intended to address this gap.

Purpose of the Study

The main purpose of this study is to find out the effects of the use of rubrics on secondary school students' achievement and transfer of knowledge in Economics in Agbani Education Zone. Specifically, the study seeks to determine:

1. The interaction effect of method and gender on students' achievement.
2. The interaction effect of method and gender on students' transfer of learning.

Research questions

This study aims at investigating the effect of rubrics on secondary school student achievement and transfer of learning in Economics. The following are the research questions that guide this study;

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.16 (1), September-December, 2025 https://ajemates.org

1. What is the interaction effect of method and gender on students' achievement in Economics?

2. What is the interaction effect of method and gender on students' transfer of learning in Economics?

Hypotheses

HO_1; There is no significant interaction effect of method and gender on students' achievement.

HO_2; There is no significant interaction effect of method and gender on students' transfer of learning

Methods

This research utilizes a quasi-experimental research design. The investigation was conducted in Secondary Schools within the Agbani Educational Zone in Enugu State. The Agbani Educational Zone includes three Local Government Areas: Enugu South, Nkanu West, and Nkanu East. There are a total of 43 secondary schools located in this educational zone. The researcher selected this zone due to the students' unsatisfactory performance in Economics in the area. The population for this study consisted of 5,160 Senior Secondary II (SSII) Students from the 2017/2018 academic session, comprising 2,545 males and 2,615 females across 43 secondary schools in Agbani Educational Zone. Among the 43 secondary schools, there are 15 schools in Enugu South, 11 in Nkanu West, and 17 in Nkanu East. The sample size for the study was 65 Senior Secondary Students who were enrolled in Economics. Intact classes of the SSIIA and SSIIB students of Economics from two senior secondary schools were used to represent the sample size. Army Day Secondary School, Awkunanaw was intentionally selected as the experimental group, while Model Secondary School, Agbani served as the control group. The sample sizes were based on the number of students present in the intact classes.

For data collection, two instruments were employed: the Economics Achievement Test (EAT) and the Economics Transfer of Learning Test (ETLT). The EAT consists of three theory questions adapted by the researcher from past questions of the West African Examination Council (WAEC) spanning from 1995 to 2016. It focused on the concepts of Demand and Utility theory. The questions addressed different levels of knowledge, comprehension, application, and evaluation as outlined in Bloom's taxonomy of educational objectives. A scoring guide for the EAT was provided (see Appendix IV). The concepts of Demand and Utility theory were selected for this study as students often struggle with these topics and tend to avoid them in exams (according to the WAEC Chief Examiners Report, 2015).

The ETLT also comprises three theory questions adapted from past WAEC examination questions. This instrument aims to assess whether knowledge of Rubrics can assist students in transferring what they have learned to a different concept—Utility theory—that they learned through lectures. During the experiment, both the experimental and control groups will be taught the

concepts of Demand and Utility theory, which is intended to evaluate the learning outcomes. The EAT and ETLT were administered as pre-tests and transfer tests to gauge students' cognitive academic achievement and their capacity to transfer knowledge in Economics.

Two lesson plans were crafted by the researcher for the selected topics: one designed for the control group and the other for the experimental group. The researcher used analytical rubrics as the instructional framework for the experimental group, whereas the lecture method guided the lesson plan development for the control group. The lesson plans were prepared, and the research assistant (the class teacher) aligned them with their respective instructional guides.

Three specialists assessed the instruments for face validity. One of these specialists is in Science Education, while the other two are in Social Science Education, all from the Faculty of Education at the University of Nigeria, Nsukka. These items underwent careful examination and proofreading by the experts to ensure that their concepts aligned with the study's objectives and research questions. The evaluators were asked to assess the EAT and ETLT items based on the instrument's appropriateness, clarity, suitability for this level of students, structure, and to provide any other observations or corrections (such as spelling and sentence structure), as well as suggestions for enhancing the study.

To determine the reliability of the research instruments, a pilot study was conducted at Community Secondary School, Akwuke, Enugu State. This school is considered to be of a comparable standard to the school chosen for the main study and was not involved in it, as both are within the same educational zone in Enugu State. Two types of reliability testing were performed to evaluate internal consistency using scorer reliability and temporal stability through the test-retest method utilizing Spearman Rank Order correlation. Therefore, the Economic Achievement Test (EAT) and Economic Transfer of Learning Test (ETLT) consisted of three theoretical questions administered to sixteen SS IIA Economics students at Community Secondary School, Akwuke. The reliability of the EAT was evaluated using the scorer reliability measure. The Spearman rank techniques (r) were applied for this calculation, yielding a reliability index of 0.70 for the EAT, which was significant at the 0.05% level. The internal consistency estimate for the ETLT was determined using Cronbach Alpha (α), which stood at 0.80. The acceptable range is between 0.5 and 1.00, indicating that the ETLT demonstrates higher internal consistency. Cronbach Alpha is suitable since the scoring of the ETLT tool is not dichotomous. Thus, the internal consistency reliability measure for the ETLT is deemed high and reliable.

The study followed a structured experimental procedure comprising a pre-test, treatment, post-test, and transfer test. At the outset, both the experimental and control groups were administered an Economics Achievement Test (EAT) as a pre-test to determine their prior knowledge and ensure group homogeneity. A scorer reliability test

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.16 (1), September-December, 2025 https://ajemates.org

was applied to maintain consistency in scoring, especially since the assessment involved subjective responses. This pre-test phase enabled the researcher to establish a baseline before introducing any instructional intervention.

The treatment phase lasted three weeks. During this period, the experimental group received instruction using a Rubrics Instructional Guide, where students were taught the meaning, purpose, and application of rubrics under the teacher's direction. The control group, in contrast, was taught the same Economics curriculum content using conventional teaching methods typical of standard classroom environments. After completing the instructional phase, both groups took the EAT as a post-test to evaluate learning outcomes, with the same lessons taught to both groups to maintain uniformity. Scores from each group were collected independently and analyzed statistically to determine the effect of the instructional method.

Two weeks after the post-test, both groups undertook a transfer test without any additional teaching, assessing how well they retained and could apply what they had learned. The performance of the experimental group, taught with analytical rubrics, was compared with that of the control group taught conventionally. Various strategies were implemented to control extraneous variables, including preventing treatment awareness, avoiding researcher involvement in test administration, separating the groups by school to prevent interaction, using intact classes, and employing ANCOVA to address non-randomization issues. Lesson plans were standardized to reduce variability in lesson delivery, ensuring the integrity and reliability of the experimental process.

The mean and standard deviation were employed to address the two research questions, while Analysis of Covariance (ANCOVA) was utilized to examine the hypotheses at a significance level of p=<0.005 (5%). Therefore, any hypotheses with a p-value greater than 5% (P>0.05%) was deemed acceptable, while those with a p-value less than 5% (P<0.05%) was rejected.

Results

Table 1: Mean and Standard deviation of the interaction effect of method and gender on the mean achievement scores of students in Economics.

Variables		N	Pretest Scores		Posttest Scores		
Method	Gender		$\bar{x}$	SD	$\bar{x}$	SD	Mean gain
Exp	Male	25	27.12	6.17	70.68	10.25	43.56
	Female	30	25.73	7.32	70.03	9.12	44.30
Cont	Male	23	29.57	7.67	55.57	10.23	26.00
	Female	27	25.96	7.66	54.89	9.68	28.93

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.16 (1), September-December, 2025 https://ajemates.org

The result presented in Table 1 shows the interaction between method and gender on the mean achievement scores of students in Economics. Result shows that the male group had a pretest mean of 27.12 with a standard deviation of 6.17 and a posttest mean of 70.68 with a standard deviation of 10.25. The difference between (mean gain) the pretest and posttest for male group is 43.56. The female group had a pretest mean of 25.73 with a standard deviation of 7.32 and a posttest mean of 70.03 with a standard deviation of 9.12. The difference between (mean gain) the pretest and posttest mean for the female group is 44.30. For each of the two groups, the posttest achievement means were greater than the pretest achievement means with the female group having higher mean gain. This shows that Rubric appears to have improved the achievement score of both male and female students. Result in Table 1 also shows that the male group taught with lecture method had a pretest mean of 29.57 with a standard deviation of 7.67 and a posttest mean of 55.57 with a standard deviation of 10.23. The difference between the pretest and posttest mean (mean gain) for male group is 26.00. The female group had a pretest mean score of 25.96 with a standard deviation score of 7.66 and a posttest mean of 54.89 with a standard deviation of 9.68. The difference between the pretest and the posttest mean (mean gain) for the female group was 28.93. For each of the two groups, the posttest mean score were greater than the pretest means scores. The male group in both the experimental and control group gained more scores than their female counterpart; this means there was an interaction between method and gender on students` achievement in Economics.

H_{O1}: There is no significant interaction effect of method and gender on the mean achievement scores of students taught Economics.

Table 2: Analysis of covariance (ANCOVA) of the significant difference in the mean achievement scores of male and female students taught Economics using Rubric

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	10549.301[a]	4	2637.325	51.429	.000
Intercept	9563.731	1	9563.731	186.497	.000
Pretest	4544.636	1	4544.636	88.622	.000
Method	6906.005	1	6906.005	134.670	.000
Gender	68.746	1	68.746	1.341	.250
Method * Gender	26.470	1	26.470	.516	.474
Error	5128.090	100	51.281		
Total	434062.000	105			
Corrected Total	15677.390	104			

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.16 (1), September-December, 2025 https://ajemates.org

The result in Table 2 shows that an F-ratio of 0.516 with associated probability value of 0.474 was obtained with respect to the interaction effect of method and gender on students` achievement scores in Economics. Since the associated probability (0.474) was greater than 0.05 level of significance set as the criterion for taking a decision, the null hypothesis was not rejected. Thus, the conclusion drawn was that there is no significant interaction effect of method and gender on the mean achievement scores of students in Economics.

Table 3: Mean and standard deviation of the interaction effect of method and gender on the mean transfer scores of students in Economics.

Variables		N	Posttest		Transfer Test		
Method	**Gender**		$\bar{x}$	**SD**	$\bar{x}$	**SD**	**Mean gain**
Exp	**Male**	25	70.68	10.25	60.52	8.54	-10.16
	Female	30	70.03	9.12	60.10	10.55	-9.93
Cont	**Male**	23	55.57	10.23	49.22	6.68	-6.35
	Female	27	54.89	9.68	49.70	9.44	-5.19

The result presented in Table 3 shows the interaction between method and gender on mean transfer scores of students in Economics. Result shows that the male group had a posttest mean of 70.68 with a standard deviation of 10.25 and a transfer test mean of 60.52 with a standard deviation of 8.54. The difference between (mean gain) the posttest and transfer test mean of the Rubric male group is -10.16. The female group had a posttest mean of 70.03 with a standard deviation of 9.12 and a transfer test mean of 60.10 with a standard deviation of 10.55. The difference between (mean gains) the posttest and the transfer test mean of the Rubric female group is -9.93. For each of the two groups, the transfer mean scores of both groups were less than the posttest achievement scores with the female group having higher mean gain. Result in table 3 also shows that the male group taught with lecture method had a posttest mean of 55.57 with a standard deviation 10.23 and a transfer test mean of 49.22 with standard deviation of 6.68. The difference between the posttest and transfer test for male group is -6.35. The female group had a posttest mean of 54.89 with a standard deviation of 9.68 and a transfer test of 49.70 with standard deviation of 9.44. The difference between the posttest and transfer test mean for the female group was -5.19. For each of the two groups, the posttest mean score were greater than the transfer mean scores. This result shows that students taught with Rubric transfer knowledge than those taught with lecture method. In conclusion, there was an interaction between method and gender on students` transfer of learning in Economics.

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.16 (1), September-December, 2025 https://ajemates.org

H_{o2}: There is no significant interaction effect of method and gender on the mean transfer scores of students in Economics.

Table 4: Analysis of covariance (ANCOVA) of the significant difference in the mean transfer scores of male and female students taught Economics using Rubric

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	6189.570[a]	4	1547.392	30.027	.000
Intercept	883.983	1	883.983	17.154	.000
Pretest	3123.195	1	3123.195	60.606	.000
Method	81.655	1	81.655	1.585	.211
Gender	4.345	1	4.345	.084	.772
Method * Gender	5.539	1	5.539	.107	.744
Error	5153.288	100	51.533		
Total	330620.000	105			
Corrected Total	11342.857	104			

The result in Table 4 shows that an F-ratio of 0.107 with associated probability value of 0.744 was obtained with respect to the interaction effect of method and gender on students transfer of learning in Economics. Since the associated probability (0.744) was greater than 0.05 level of significance set as the criterion for taking decision, the null hypothesis was not rejected. Thus, the conclusion drawn was that there is no significant interaction effect of method and gender on students` transfer of learning in Economics.

Discussion

Results show that there is a slight difference between the mean achievement scores of male and female students in Economics when using rubrics. The male students score was slightly higher than the female students score with the female students having higher mean gain over the male students. This finding is not in line with Umoduagwu (2005) whom findings revealed that gender as a factor have a significant influence on students` achievement in integrated science but in line with Okebuokola and Iyan (1990) whose finds revealed that gender as a factor does not have a significant influence on students` achievement. It has been established in this study that there is no significant interaction effect of method and gender on the mean scores of students in the academic achievement test. The result shows an F-cal of 0.516 with associated probability value of 0.474 was obtained with regard to the interaction effect between method and gender on mean achievement of students in Economics. Since the associated probability 0.474 was greater than 0.005, the null hypothesis was accepted. This finding is in agreement with Uwamelye (1998) who found no interaction effect between method and gender on the influence of gender on

students` achievement in Basic technology. These are generalizations for male and female and they do not apply individually to all males and females. It thereby stands that; male and female learners are capable of competing and collaborating in Economics. In addition, this finding showed that performance is a function of teaching method adopted and orientation, not gender.

Results also has shown that there is a slight difference between the mean knowledge transfer scores of male and female students in Economics when using rubrics. The male students score is slightly higher than the female students score with the male students having higher mean gain over the female students. This finding is in line with Heidi and Ying Du (2005) which findings revealed that there is no significant difference in the use of rubrics based on gender in educational psychology. The result shows an F-cal of 5.539 with associated probability value of 0.107 was obtained with regard to the interaction effect between method and gender on mean transfer of learning of students in Economics. Since the associated probability 0.107 was greater than 0.005, the null hypothesis was accepted. This finding is in agreement with Gonzalez (2012) who found no interaction effect between gender and method.

Conclusion

The study concluded that gender influenced students' achievement and transfer of learning in Economics. The male group taught Economics using rubrics mean achievement score and transfer of learning scores were slightly higher than their female counterpart but was not statistically significant. There is no significant interaction effect of method and gender on the mean achievement and transfer of learning scores of the students.

REFERENCES

Adu, E.O (2004). An introduction to Economics Education; A basic Text for Tertiary Institutions Students, Ibadan: ERSG.

Andrade, H., and Y. Du. (2005). Student's perspective on rubric-referenced assessment. *Practical Assessment, Research and Evaluation* 10 (3), 1 – 11.

Bolton, C. F. (2006). Rubrics and adult learners: Andragogy and assessment. Assessment. Assessment Update 18 (3), 5-7.

Glenn, C. (2005) *Outcomes Assessment in higher Education: Using Assessment Instruments to Improve Business Curriculum and Instruction at Association of Collegiate Business Schools and Programs (ACBSP)* (Thesis) Philadelphia, PA: Saint Joseph's University.

Glickman-Bond, J. and Rose, K. (2006) *Creating and Using Rubrics in Today's Classrooms*, Norwood, MA: Christopher-Gordon Publishers, Inc.

Gonzalez, John A., (2012). Mechanisms of Transfer of Learning; Modelinh

Motivational and Self Regulatory Processes that promote Transfer of Learning. Instructional Design, Development and Evaluation-Dissertations. Paper 54. Retrieved from http://surface . syr.edu/cgi/viewcontent. Cgi? Article =1053&context=idde_etd.

Heidi., and Ying. Du. (2005). Students' perspectives on rubric-referenced assessment. Practical Assessment, Research and Evaluation 10 (3), 1 – 11.

Idialu, J. (2013). Influence of gender, school location and students' attitude on academic achievement in basic technology in Delta State. M.Ed Thesis. University of Nigeria, Nsukka.

Julhas, U. (2004). Impact of the use the Rubrics of the performance of students. M.Ed Thesis. Brack University.

Krashen, S. (1981). Second language acquisition and second language learning, Oxford, pergamon.

Nigerian Educational Research Development Council (NERDC) (2006). National Curriculum for Senior Secondary School.

Nigerian Educational Research Development Council (NERDC) (2008). National Curriculum for Senior Secondary School.

Nnachi, R. O. (2007). Advanced Psychology of Learning and Scientific Enquires. Enugu: John Jacobs Classic Publishers.

Nworgu, B.G. (2006). Educational research, basic issues and methodology. University Trust Publishers, Nsukka, Enugu State.

Obemeata, J.O. (2005). Effective Teaching of Economics in Senior Secondary School, West Africa Journal of Education. 1(1).9-13.

Petkov, D. and Petkova, O. (2006) Development of Scoring Rubrics for IS Projects as an Assessment Tool. Issues in Informing Science and Information Technology 3, 499-510.

Schafer, N. D., Swanson, G., Bene, N. and Newbery, G. (2001) Effects of Teacher Knowledge of Rubrics on Student Advancement in Four Content Areas. Applied Measurement in Education 14, 2, 151-170.

West African Examination Council (2009). Chief Examiners Report. May/June, 2009, Lagos: WAEC.