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EFFECT OF INTERNET-BASED INSTRUCTIONAL STRATEGY ON STUDENTS' ACADEMIC ACHIEVEMENT IN ECONOMICS: COUNSELLING AND CURRICULUM INFERENCE

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ABSTRACT

The study adopted a quasi-experimental research design. The population of the study was 942 Senior Secondary public-school II students in Kaura, Kaduna State. 187 Economics students were sampled from the population. Two research questions and hypotheses guided the study. Data was collected using a Multiple-Choice economic Achievement Test. The instrument was subjected to face and content validation by three experts. The instrument was trial tested on SSS II students in Government Secondary School Kagoro, Kaduna State. The reliability was determined using the Kuder Richardson (K-R20) formula to establish the internal consistency of the instrument, which yielded a reliability index of 0.85. The collected data were analyzed using the mean and standard deviation to answer the research questions, while the Analysis of Covariance was used to test the hypotheses. The study revealed that using an internet-based instructional strategy has increasing positive effects on students' academic achievement in Economics and that gender is not a significant factor in students' academic achievement in Economics. The study recommends, amongst other things, that Economics teachers should use internet-based instructional strategies in teaching Economics and that teachers and students should be counseled on the need to embrace the internet-based instructional approach.

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1. INTRODUCTION

A social science subject that is essential for both people and society is economics (Rehman et al., 2022; Ozturk & Ullah, 2022). It is a science that examines how human behavior relates to finite resources that can be used for other purposes. A study of economics is essential because it focuses on how to use limited resources to satisfy

endless wants; it enables people to do their part to improve society's well-being; it helps them develop a body of economic principles and equips them with the tools necessary for economic analysis; it helps them develop the capacity for critical thought; and it helps them make informed decisions (Awan & Sroufe, 2022; Tang et al., 2023)

According to the Federal Government of Nigeria through the National Educational Research and Development Council (NERDC), the goals of studying economics in senior secondary schools in Nigeria are to arm students with the fundamental concepts of economics required for practical living and for higher education; prepare and encourage students to be prudent and effective in the management of scarce resources; and increase students' respect for the dignity of labor and their appreciation of economics.

According to the National Policy on Education (FGN, 2012), Economics is a nonvocational elective Social Science subject that should be taught in senior secondary schools across the nation to develop skilled labor that is well-equipped with the knowledge, skills, and abilities to analyze economic problems and offer solutions to solving personal and societal economic problems and policies. According to Ede, Oleabhiele, and Modebelu (2016), the goal of teaching economics is to present it as a subject that is relevant to daily life because it deals with the interactions between different economic sectors. According to Oleabhiele & Oleabhiele (2015), studying economics has a useful application in contemporary life. It provides information and illustrates the outcomes of certain behaviors, which aids in helping us choose between many options. It urged the person who received it to make sensible decisions that would meet their requirements despite having access to an endless supply of resources and wants.

According to Olaniyan, Omosewo, and Nwankwo (2015), the strongest primary academic requirement for a career in business and finance is economics. A solid foundation in economics is also a must for studying economics and other business-related topics. For this reason, entry into Economics Education, Economics, and the majority of business and management programs at the higher level of education in Nigeria requires a credit-level pass in Economics at the Senior Secondary Certificate Examination (SSCE). The number of schools that teach it and the number of students who sit the exam have both increased dramatically since economics was first offered as a topic in the West African School Certificate Examination (WASCE) in 1967. The inconsistently poor academic performance of students in Economics, however, is concerning.

Academic success is intimately correlated with students' knowledge expansion and progress in a teaching- and learning-intensive environment. According to Nneji (2013), it shows how well students performed on tests of performance, skills, and analytical thinking. Over the years, pupils' performance in Economics on the Senior School Certificate Examination has not been encouraging. The Chief Examiners Reports of the West African Examination Council from 2010 through 2020 provide proof of this. According to reports, between 25% and 59% of the candidates earned a credit in economics. The chief examiners also noted that many pupils simply listed their ideas

without expanding on them. They were unable to receive full marks for the questions they attempted, which had an impact on their scores. Some candidates gave responses to the questions without using the proper economic terminology, which led to low marks.

A person's gender, along with race, ethnicity, and class, is a social factor that significantly determines their life chances and shapes how they participate in society (Akunya, 2020). Similarly, Okeke (2007) defined gender as the socially and culturally produced traits and roles that are connected to men and women in any community. He argued that many people think a student's gender, whether they are male or female, affects their academic achievement in a given field. This is corroborated by the finding that female students do much lower in economics than male students, according to Glawala, Ali, and Durkwa (2016). Gender was found to be an unimportant predictor of success in microeconomics by Oriakhi and Igbudu (2015). These opposing viewpoints have also increased the need for the current study. One cannot overstate the importance of finding an effective method of delivering teaching that could eliminate the gender gap in economics. There is a need to ascertain whether an internet-based instructional technique may raise student accomplishment in economics.

According to research, teaching strategy plays a significant role in determining students' Economics achievement. The employment of awkward teaching methods and instructional materials has reportedly impeded students' attempts to acquire and comprehend academic subjects (Eze, Ezenwafor, & Obidile, 2016). Inuwa and Yusuf (2012) observed that a lacklustre instructional technique can be linked to low academic accomplishment in examinations to bolster this claim.

Teachers who employ instructional strategies keep their students interested in the content they are teaching and encourage them to practice a variety of skills (Study.com, 2022). There are two types of instructional strategies: traditional (teacher-centred) and creative (learner-centred). The term "teacher-centred strategies" refers to conventional teaching techniques where the teacher controls the teaching and learning processes. The students continue to be receptive listeners. An illustration is the lecture approach. Instruction is oriented on the needs, preferences, and interests of the student through learner-centred instructional methodologies. Teachers play the role of learning process facilitators, giving guidance and feedback rather than merely giving instructions while students actively participate in the decision-making process. The internet-based educational technique is one example.

The term "internet-based instructional strategy" refers to a style of learning that employs the internet as a means of delivering instruction for a variety of learning tasks. Depending on the needs and requirements of the curriculum, it may take the form of either pure online learning, where the curriculum and learning are implemented online without the instructor and students meeting in person, or a hybrid, where the instructor meets with the student’s half of the time online and half in the classroom (IGI Global, 2022).

The ability to sift, sort, and select information that can be used efficiently is a skill that economists need to learn in today's knowledge-based society. Our pupils need to

enhance their research skills because they cannot know or learn all of the available information. They must learn where to look for pertinent information and how to use it. The internet is a tool that offers precisely such a chance. The following diverse techniques of effectively using the internet. Students can easily access a wealth of knowledge on the internet by simply clicking their mouse. This knowledge could be applied to projects and assignments or used to further one's understanding of a subject. A student could run across a wealth of additional related information while searching the internet for the answer the teacher is looking for, furthering his or her knowledge (Srinivasan, n.d.).

For pupils, an online assignment brings economics to life. They are actively participating in the learning process, which aids in the crystallization of hazy and ethereal thoughts and notions. As a result, there is an increase in interest and motivation in the subject, which benefits the students' academic performance. Therefore, the study looked into how an internet-based instructional technique affected students' academic performance in Economics.

Concern among those who are involved in education stems from the poor academic performance of pupils taking the Senior School Certificate Examination (SSCE) in Economics over the years. To address the issue of student's poor academic performance, the stakeholders have taken some action. For instance, governments ensure that qualified instructors are hired to teach in schools through the Ministries of Education and school proprietors. By enrolling their children in private lessons, sending them to private schools, and providing them with essential learning resources and materials, parents make sure that their kids receive a high-quality education. Teachers, on the other hand, employ a variety of instructional techniques and approaches to improve students' academic performance. The academic performance of students has generally declined despite the efforts made by various stakeholders to assure improved academic performance. Students' poor academic performance in economics is more obvious in the calculative and graphical analysis-heavy sections of the subject. The Chief Examiners' Reports of the West Africa Examination Council (WAEC) from 2010 to 2020 provide evidence of this. The studies have often highlighted the students' shortcomings, particularly in the areas of math and graphical analysis in economics. What might be the cause of pupils' consistently poor academic performance in Economics? Some interested parties claim that the standard teaching approach utilized by the majority of economists is to blame for students' poor academic performance in the subject and demand for a more effective and cutting-edge approach, such as an internet-based strategy. Research has demonstrated that using the Internet as a teaching tool can significantly improve students' overall academic performance in classroom courses. The lack of internet-based instructional strategies in the teaching and learning of economics may be a contributing factor to the poor academic performance of pupils. Therefore, the study's difficulty was expressed as a question: Would an internet-based instructional technique be a successful means of raising students' academic achievement in Economics?

The study looked into how students' academic performance in Economics was affected by an internet-based instructional technique. The study specifically determined the impact of:

i. Internet-based teaching method for improving students' academic performance in economics.
ii. internet-based teaching method on the academic success of male and female students in economics.

The study was influenced by the following research inquiries:

1. What impact does an internet-based instructional technique have on students' academic performance in Economics?
2. What impact does an internet-based teaching technique have on the academic success of male and female students in Economics?

The following null hypotheses were developed and evaluated at a significance level of 0.05.

HO1: The use of the Internet as a teaching tool has no appreciable impact on student's academic performance in Economics.

HO2: Neither gender's academic performance in economics is significantly impacted by an Internet-based instructional technique.

2. METHOD AND DISCUSSION

Researchers used a non-randomized, non-equivalent pre-test and post-test control group design in a quasi-experimental study (Creswell & Creswell, 2017). Because intact classes were employed and randomly allocated to both the treatment and control groups, the design was appropriate for the study (Gotip, Onuoha, & Iorliam, 2021). Nigeria's Kaura Local Government Area serves as the study's geographic focus. All 942 Senior Secondary School II pupils in the public Senior Secondary Schools in Kaura, Kaduna State, made up the study's population.

The study's sample included 187 Economics students from four public co-educational secondary schools in Kaura LGA, Kaduna State, with 96 in the experimental group (44 males and 52 females) and 91 in the control group (42 males and 49 females). Utilized was a multi-stage sampling. In the initial phase, four schools were chosen for the study using purposive sampling. Finally, the four sampled schools were divided into groups using a basic random sampling method that relied on balloting without replacement. Government Secondary School Manchock and Government Secondary School Kagoro received the experimental group assignment, whereas Government Secondary School Fadan Attakar and Government Secondary School Kadarko received the control group designation. The sampled schools were purposefully chosen based on the following standards: co-educational; have a good number of students offering Economics; are government owned; and have more than one stream of SS II classes offering Economics. The sampled schools also had to meet the following requirements: have qualified and experienced Economics teachers; have been presenting students for

the Senior Secondary School Certificate Examination in Economics for the past 10 years.

The Multiple-Choice Economics Achievement Test (MEAT) was the tool utilized to collect the data. The researchers created this instrument, which originally contained 70 multiple-choice questions with choices between A and D. To ensure proper coverage of the contents/topics and maintain an even distribution throughout the various levels of the cognitive domains, the MEAT items were created using a table of specifications.

Three experts face-validated MEAT. They also included a test and measurement expert from Science Education Veritas University Abuja, as well as two experts in economics education from the Department of Educational Management at the Michael Okpara University of Agriculture, Umudike. To do this verifies received copies of the 70-item MEAT, marking scheme, table of specifications, research questions, and hypotheses. Based on the study themes chosen, the instrument was examined for relevance, clarity, and content coverage. To ensure the suitability of each item of the instrument in terms of its difficulty, discrimination, and distracter index, the items were submitted to item analysis as well as content validation utilizing test blueprints. This led to the items being reduced to 50 questions.

Twenty SSS II Economics students who were not involved in the current study were used to trial test MEAT. The reliability coefficient was calculated using Kuder-Richardson's formula 20 (K-R20), which produced a result of 0.82. This reliability coefficient was deemed sufficient for the instrument's degree of internal consistency.

MEAT was given as a pre-test to both the experimental and control groups before the trial began. The kids' test results were recorded and stored at the conclusion. Additionally, the MEAT II test, which was the same test as MEAT but rearranged and reorganized, was given to the two grafters of the treatment to respond to the study's research questions and test its hypotheses, the scores received were marked, noted, and assessed.

The researchers created two educational materials. The first was based on an instruction strategy based on newspapers, whereas the second was based on a traditional teaching strategy. The eight-week experiment was conducted. While Analysis of Covariance (ANCOVA) was employed to test the null hypotheses at the 0.05 level of significance, mean and standard deviation were used to provide answers to the study questions.

3. RESULTS AND DISCUSSION

Results

The result from the data analysis was presented in the tables below:

Research Question 1: What is the effect of internet-based instructional strategy on students' academic achievement in Economics?

Table 1. Mean Achievement Scores of Students in Experimental and Control Group

Group	N	Pre-test	Post-test

		X	SD	X	SD	Mean Gain Score
Experimental	96	49.94	3.81	67.96	6.65	18.02
Control	91	49.78	4.17	59.78	6.66	10.00
Effect		**0.16**		**8.18**		**8.02**

Table 1 reveals that the pre-test mean academic achievement scores of both experimental and control groups are 49.94 and 49.78 respectively, while the standard deviations are 3.81 and 4.17 respectively. The mean difference between both groups is 0.16. This means that the students in the experimental and control groups have similar academic achievement (negligible difference) in both groups before the commencement of treatment (experiment). The post-test result showed that the students in the experimental group had a mean score of 67.96 with a standard deviation of 6.65, while the control group had a mean score of 59.78 with a standard deviation of 6.66. The result also shows that the experimental group had a mean gain of 18.02 while those in the control group had a mean gain of 10.00. The table showed that the internet-based instructional strategy had a greater increasing mean effect of 18.02 on the student's academic achievement in Economics. This showed that students in the experimental group had higher academic achievement scores as a result of the internet-the-based instructional strategy than their counterparts in the control group where the conventional teaching method was used.

Research Question 2: What is the effect of internet-based instructional strategy on male and female students' academic achievement in Economics?

Table 2. Mean Interest Scores of Male and Female Students in Experimental Group

Gender	N	Pre-test		Post-test		
		X	SD	X	SD	Mean gain Score
Male	44	50.04	3.69	68.04	6.63	18.00
Female	52	50.03	4.18	67.96	6.78	17.93
Mean Difference		**0.01**		**0.08**		**0.07**

Table 2 reveals that the pre-test academic achievement mean score of both males and females were 50.04 and 50.03 respectively while the standard deviations were 3.69 and 4.18 respectively. The mean difference between both male and female students is .01 this means that male and female students have similar academic achievement scores (negligible difference) in Economics.

The post-test result showed that male and female students in the experimental group had a post-test academic achievement mean score of 68.04 with a standard deviation of 6.63 while the female students in the experimental group had a post-test academic achievement mean score of 67.96 with a standard deviation of 6.78. The mean difference between male and female students is 0.07. This showed that male and female students in the experimental group up not have much difference in academic achievement scores.

Test of Hypotheses

HO_1: Internet-based instructional strategy has no significant effect on students' academic achievement in Economics.

Table 3. Analysis of Covariance of Instructional Strategy on Students' Academic Achievement in Economics

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	970.926[a]	2	88.266	38.157	.000
Intercept	64.556	1	64.556	27.907	.000
Pretest	810.311	1	810.311	350.295	.000
Group	48.019	1	4.802	2.076	.000
Error	182.745	93	2.313		
Total	231060.000	96			
Corrected Total	1153.670	95			

a. R Squared = .842 (Adjusted R Squared = .820)

Table 3 shows that treatment has a direct effect on students' achievement in Economics. This is because the F (1, 93) = 2.076, p = 0.000 value at 2.076 in respect of treatment main effect is shown to be significant at 0.000. Therefore, at a 0.05 level of significance, the P-value of 0.000 < 0.05 is statistically significant. It indicates strong evidence against the null hypothesis, as there is less than a 5% probability the null is correct. Therefore, the researcher rejects the null hypothesis and accepts the alternative hypothesis. Therefore, an internet-based instructional strategy has a significant effect on student's academic achievement in Economics.

HO_2: Internet-based instructional strategy has no significant effect on male and female students' academic achievement in Economics.

Table 4. Analysis of Covariance of Instructional Strategy on Male and Female Students' Academic Achievement in Economics

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	530.603[a]	2	53.060	1.200	.304
Intercept	612.080	1	612.080	13.840	.000
Pretest	174.715	1	174.715	3.951	.050
Gender	455.243	1	50.583	1.144	.343
Instructional Strategy*Gender	3537.968	93	44.225		
Total	421324.000	96			
Corrected Total	4068.571	95			

a. R Squared = .130 (Adjusted R Squared = .022)

Table 4 shows that treatment has no significant effect on male and female students' achievement in Economics. This is because the F (1, 93) = 1.114, p = 0.343 is shown to be insignificant at 0.343. Therefore, at a 0.05 level of significance, the P-value of 0.343 < 0.05 is not statistically significant and indicates strong evidence for the null

hypothesis. This means we retain the null hypothesis that internet-based instructional strategy has no significant effect on male and female students' academic achievement in Economics.

The Results should include the rationale or design of the experiments as well as the results of the experiments. Results can be presented in figures, tables, and text. The Results should include the rationale or design of the experiments as well as the results of the experiments. Results can be presented in figures, tables, and text.

Discussion

The findings show that the internet-based instructional strategy yielded a significant difference in students' achievement in Economics than the conventional expository, instructional strategy. The implication is that an internet-based instructional strategy being child centered and involving a deluge of information, helps students to sift, sort and cull out information which enhances their knowledge of Economics. This is in line with Onyepunuka (2016) who calls for a shift from the conventional (lecture) method of teaching to innovative methods of teaching and in line with Cheng-Jui and Tzu-Chia (2020) who demonstrated that the use of internet-based instructional strategy teaching a substantial impact on improving academic achievement. Therefore, students can learn Economics better when they are taught using internet-based instruction because it is organized in the form of hypertext documents on the Internet such that it incorporates text with graphics, videos, or audio.

The findings show that gender as a variable had no significant effect on students' achievement in Economics. The study result shows that the interaction effect of internet-based instructional strategy and gender was not significant on students' academic achievement in Economics. The implication is that internet-based instructional strategy has similar effects on both male and female students. This is in line with (Akinsola 2007; Amosun 2011; Onuoha & Enogu 2014) that there is no significant gender difference in the academic achievement of students when exposed to treatment and that academic achievement does not depend on gender but rather on instructional strategy. However, this is not in agreement with that of Onah and Omenuko (2011) whose study revealed that male and female students' academic achievements using cooperative instructional strategy differ with male students achieving better than female students. This is an indication that with some instructional strategies, gender differences in academic achievement could persist but with internet-based instructional strategy, these differences can be neutralized which agrees with the position of Ibe in Onyepunuka, (2016) who stressed that education for the future should equip the individual with the power to adapt to change irrespective of gender should be the most important goal of education of any society that wants to progress. In this s, the internet-based instructional strategy enhances the academic achievements of both male and female students evenly.

Implication for Counselling

The finding of this study has shown the relevance of Internet Instructional Strategy in the teaching of economics, supporting the assertion of (Eze, Ezenwafor & Obidile, 2016). Students taught with the approach in the experiment had a great improvement in

their mean performance and its sustainability, has implications for counselling. School counsellors should ensure a strong network for internet-based instruction by liaising with the ICT staff to make a checklist of required facilities, for instance; a workable internet, computer, constant source of power, mode modem e-classroom. A situation where any is not available or not functioning well should be reported to the principal and the counsellors will follow up the request. A follow-up service is very important in guidance and counselling services because it ensures procedural implementation. The provision of the list above will enhance effective internet-based instructional strategies and improve academic achievement among Economics students. Inuwa and Yusuf (2012) pointed out that poor academic achievement is traceable to poor instructional strategy.

Group counselling is also required for both teachers and students. The findings of this study should be communicated to teachers to motivate them to use the Internet instructional strategy in teaching Economics. This can be done through internet capacity building in the use of different aspects of google classroom and other educative social media platforms for teaching and learning. Group counselling will avail the counsellors of the hindrances the teachers encounter in embracing the teaching approach, which solution will accelerate the teachers' expertise, desire, and interest in the use of internet-based instructional strategy to provide teaching and learning. On the part of students, either the group or the individual counselling will assist to identify the student's challenges in the use of internet-based instruction strategy, which may include the provision of laptops, smartphones, personal data, and the lack of the needed capacity. Counsellors should counsel them on the need to adapt to their environment and meet the requirements of their curriculum (IGI Global, 2022). Students generally are observed to surf the internet on daily basis, though not necessarily for education purposes (Gurmu et al., 2022). As a result, counsellors should expose the students to Acceptance and Commitment Therapy (ACT), this will help them to accept change-change of visiting the internet for learning. Enem et al. (2020) reinstated the efficacy of the therapy in making changes to circumstances. This strategy will help them to embrace the internet to learn and as well appreciate the internet-based instructional strategy.

Curriculum Inference

The success of internet-based instructional strategy influenced the improvement of students' achievement in Economics. Therefore, to improve students' achievement, the quality of the Economics curriculum instructional strategy like the internet-based instructional strategy needs to be improved. The government, particularly the Ministry of Education and other educational stakeholders need to take appropriate policies that will improve better implementation of internet-based instruction, and provide higher support to the improvingseen from the side of funds, infrastructure or human resources for the implementation of internet-based instruction and Improving the ability of human resources is the main step to increase students' academic achievement in Economics and the success of internet-based instruction in teaching and learning Economics in schools.

4. CONCLUSION

The Internet-based instructional strategy proved effective in enhancing students' academic achievement in Economics. The conventional instructional strategy had been proven to be ineffective in enhancing students' academic achievement in Economics. Therefore, the set goals of the Economics curriculum in secondary schools will be easily achieved using an internet-based instructional strategy and it will be difficult to achieve using the conventional instructional strategy.

Also, gender is an important factor in determining the instructional strategy to be adopted in teaching Economics in schools. This is confirmed by the available data that internet-based instructional strategy has similar or equal effects on students' academic achievement in Economics irrespective of gender. Based on the findings and conclusion drawn from the study, the following recommendations were made:

1. To enhance students' academic achievement in Economics, Economics teachers should use internet-based instructional strategies in teaching Economics.
2. Schools should provide adequate facilities that will ensure an effective internet-based instructional strategy.
3. Government and secondary school administrators should organize training and re-training programmes through intensive seminars and workshops on the effective ways of using an internet-based instructional strategy for in-service Economics teachers.

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