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# Awareness and Utilization of Adaptive Learning Platforms by Economics Education Lecturers for Effective instructional delivery in Imo State

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**Abstract**

The study was conducted to ascertain the extent of awareness and utilization of adaptive learning platforms for effective instructional delivery by Economics education lecturers in Imo state. The study was delimited to Alvan lkoku federal university of education, Owerri, lmo state. The study adopted the descriptive survey design. All the 32 Economics education lectures in the college were used for the study as census sampling was adopted. A researcher-made structured questionnaire was used as instrument for data collection. The data collection instrument was constructed on a four point rating scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE). Meanwhile, the instrument was face validated by three experts two from the Economics Education and the one from Measurement and evaluation. Mean and standard deviation were used to answer the research questions while t-test statistic was used to test the hypotheses at 0.05 level of significance. The findings of the study revealed among others that; Economics education lecturers are not aware of adaptive learning platforms to a high extent and many Economics education lecturers to a high extent do not use designed digitally, Smart Sparrow, Pearson Interactive lab among other adaptive learning platforms for teaching Economics. Based on the findings, it was recommended among others that Economics education lecturers should be encouraged morally and financially to participate in seminars, workshops among others in order to be aware of innovations in the education sector use as the use of different teaching and learning platforms.

**Keywords**: Adaptive Learning Platforms, Economics Education, Economics Education Lecturers, instructional delivery

## Introduction

The world is characterized by an avalanche of social dynamics that warrants an astute responsiveness to so many developments (Bigelow, 2015). There are so many changes that have so far occurred in every sector of the economy especially in the educational system. These changes call for apt innovative measures away from the conventional approaches in order to tame the tide (Rafei, 2015). The introduction of information and communication technology has changed so many traditional approaches to teaching and learning which Economics Education instruction is not an exemption. However, research findings are calling for the adoption of innovative teaching-learning strategies that are students' centred in order to bring out the best learning abilities in them using the leverage made possible by information and communication technology. Such strategy include the adaptive learning strategy.

According to Amuchie (2015), adaptive learning is a consciously organized personalized learning strategy that is basically designed in an entity where there are learners with individual disparities whose felt needs and interest are taken care of. Shawn (2014), opined that adaptive learning is an educational strategy that integrates technology and access to the internet in order to shape the learning experiences to suit learners' felt needs, aspirations, abilities and learning conditions. Furthermore, Opati (2013), maintained that adaptive learning is a learning strategy that systematically agglomerates technology and the available data concerning a learner in order to find the learning experience in a manner as to take care of the learners' learning differences. From the foregoing, therefore, the researcher describe adaptive learning as a technology driven and learners' database learning strategy that streamlines learning in a way to take care of every learners' individual differences. However, adaptive learning leverages on some platforms. According to Obaji (2021), adaptive learning platform is an educational platform that optimizes learning by using learners' data to provide real time feedback in order to provide a better adjustable learning environment where learning can take place irrespective of the differences

in the learners. Again, Gabriel (2019), opined that an adaptive learning platform is an educational arrangement powered by the application of technology to provide learners with the real time performance assessment and make way for the learners' improvement and advancement based on the data contained in their performances. From the foregoing, the researcher saw adaptive learning as that type of educational arrangement established on the pedestal of technology which uses learners' outcome to provide remedial feedbacks that contributes to the overall improvement of the learning experience. This platform can be used by Economics education lecturers to deliver instructions on Economics education contents to students.

Lecturer is a professionally trained person that teaches students of tertiary institutions (Nwachukwu, 2017). More so, a lecturer is a professional researcher who takes care of the teaching and learning of undergraduates as well as postgraduate students in the tertiary institutions of learning. Thus, it is expected that every lecturer should be aware and utilize an instructional delivery platforms for effective instructional delivery of his/her subject area which Economics education is inclusive.

Economics according to Adam Smith in Ede et al. (2016) is an inquiry into the nature and causes of the wealth of nations. On his own perception, Alfred Marshal in Ede et al. argued that Economics is the study of mankind in everyday business of life. Again, Lord Robbins in Ede et al opined that Economics is a branch of social science that studies human behaviour as a relationship between ends and scarce means which have alternative uses. However, from the aforecited definitions, the researcher defined Economics as a behavioural science that uses systematic principles and practices in the maximization of output and the minimization of cost for the enhancement of human welfare. Economics is taught by experts who are trained in the field of Economics education.

Economics education is a clearly definite programme of study designed solely for the preparation of professional Economics teachers (Uzoma, 2018). Economics education is a programme that is patterned into a segmented cum sequential processes which inculcates in an individual the pedagogy of Economics (Larry, 2020). Economics education is that branch of knowledge that is deeply concerned with the development and training of sound Economics teachers who must have mastered the inherent rudiments of Economics pedagogy (Azu, 2023). More so, the Economics pedagogy has been made easy owing to the establishment of these adaptive learning platforms. These adaptive learning platforms include: SC training, adaptemy, knewton, cogbooks, realizeit, smart sparrow, pearson interactive labs, designed digitally, whatfix, impelsey among other platforms.

SC training (previously called EdApp) is one of the first established adaptive learning platform that has an authorizing tool, e-learning templates, gaming components and analytical tools (Yusus & Balogu 2011). SC training has an inbuilt enabling avenue called create with AI which gives the user the leverage to create an AI course. It enables one to generate a lesson within few seconds by just entering the topic in relation to the course you want it to generate for you. Another adaptive learning platform is the Adaptemy.

Adaptemy uses its learning engine to help a learner create a better and more suitable learning experience into an already existing learning platform. It accommodates and adapts easily to an earlier contents and platforms (Rampersad, 2012). While trying to use the Adaptemy platform, the user needs to make a curriculum map and add information to it. Then proceed by using XAPI standards to stream learning data to the learning engine. One can also create a tailored learning experience by using the learners' data base and their profile for recommendations. Another Adaptive learning platform is Knewton.

Knewton is a New York oriented adaptive learning platform created in the year 2008 with the mantra "data, if knowledge is power, Knewton is aiming to provide as much information to higher education as possible". Knewton is so tailored technically owing to the fact that it extracts relevant information from course materials with the view to determine which content is most effective and more engaging (Shittu & Shittu 2013). Cogbook is another veritable type of Adaptive learning platform.

Cogbooks an adaptive learning platform helps one to create a low cost product that enhances learning outcomes through giving one-on-one support to all learners irrespective of where they are taking the course. Cogbook could be taken as an online version of a textbook that changes owing to the learners' recorded progress in the course. The cogbook platform measures and reacts to each performance of a student in relation to the content being supplied by the instructor (Oluwarobi, 2012).Another Adaptive learning platform is the Realizeit.

Realizeit is that type of adaptive learning platform that promotes the impact of one-on-one learning encounters across the whole company. This kind of adaptive learning platform adjusts to the dynamic abilities of each student and controls it. Realizeit intermittently assesses learners' knowledge and abilities with the view to map, shape and control a customised learning experience (Adomi & Imangban 2010). In a nutshell, Realizeit takes care of work force and their academic requirement by also allowing educators to customise and personalise their grooming pattern in order to assist learners attain their highest potential. Smart sparrow is also a notable type of Adaptive learning platform.

Smart Sparrow adaptive learning platform is seen as the platform with an exceptional difference. Half platform, and half service provides educators with the mixture of platform and the assistance needed to construct their primordial plan. Many adaptive learning platforms base

its activities on algorithms that eliminate special personalization for instructors. Another type of Adaptive learning platform is the Pearson interactive lab.

Pearsons interactive lab is an adaptive learning platform that provides the learners with a more likely natural environment owing to the fact that students can participate in genuine scientific arrangement, receive feedback and prepare for a physical lab. This platform is best for scientific understanding by showing how to learn from their mistakes rather than just receiving the correct answers. The Pearsons interactive lab provides students with novel tools or a hybrid lab alternative by replacing in-person wet lab. Instructors give students customizable tasks that are adapted to their respective needs (Kalu, 2021). The Pearsons interactive labs provide the learners with guidance on how to navigate through risks. It prepares the learners also on how to formulate scientific hypotheses and apply their knowledge through guided feedbacks. Again, Designed digitally is another notable type of Adaptive learning platform.

Designed digitally, this platform aims to collaborate with any company with the view to designing employee performance enhancement solutions in the corporate learning arrangement. The team of design digitally helps to create technology–enhanced imaginative and scalable learning arrangements. The digital learning solutions are fully concerned with XAPI tracking, allowing one to quantify and evaluate the entire impacts of your training solutions. The platform is not completely hands off as you have to interact with them. It is still uncertain on the extent to Economics Education lecturers are aware and utilize adaptive learning platforms for effective instructional delivery of Economics. Hence, this study.

**Purpose of the Study**

The purpose of the study was to investigate the extent of the awareness and utilization of adaptive learning platforms by Economics education lecturers for effective instructional delivery in Imo State. Specifically, the study sought to:

1. determine the extent of awareness of adaptive learning platforms by Economics education lecturers for effective instructional delivery,
2. ascertain the extent of utilization of adaptive learning platforms by Economics education lecturers for effective instructional delivery.

**Research Questions**

The two questions raised for the study include:

1. What is the extent of awareness of adaptive learning platforms by male and female Economics education lecturer for effective instructional delivery?
2. To what extent do male and female Economics education lecturers utilize adaptive learning platforms for effective instructional delivery?

**Hypotheses**

The study was guided by the following hypotheses which were tested at 0.05 level of significance.

**$HO_1$**: There is no significant difference between the mean responses of male and female Economics education lecturers on the extent of awareness of adaptive learning platforms for effective Economics instructional delivery.

**$HO_2$:** There is no significant difference in the mean responses of male and female Economics education lecturers on the extent of utilization of adaptive learning platform for effective Economics instructional delivery.

**Methods**

The study centred on the awareness and utilization of adaptive learning platforms by Economics education lecturers for effective instructional delivery. However, the study adopted a descriptive survey research design. Descriptive survey research design was used in this study based on the fact that this study was only to describe a given phenomenon (Abonyi, 2011). All

the 32 lecturers in the Department of Economics of Alavn Ikoku Federal University of Education were all used which was made up of 26 males and 6 female lecturers.

Purposive random sampling and census sampling techniques were used in the selection of the institution as well as the lecturers for the study because the institution offers Economics Education with adequate number of Economics Educators that can be involved in the study. The data collection instrument used for this study was the researcher – developed structured questionnaire with a four point rating scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE). The reliability of the instrument used for this study was determined using Cronbach alpha which produced a coefficient of 0.81.

The data collected was analysed using mean and standard deviation were used to answer the research questions while t-test statistic was used to test the hypotheses at 0.05 level of significance. Results from the Research questions were interpreted using real limit of numbers of 3.50-4.00 as VHE, 2.50 – 3.49 as HE, 1.50 – 2.49 as LE while 0.50 – 1.49 as VLE.

## Results

The results of this study were presented in tables according to their respective research questions and their corresponding hypotheses.

**Research Question 1:** What is the extent of awareness of adaptive learning platforms by male and female Economics education lecturers for effective instructional delivery?

**Table 1: Male and female Economics education lecturers' mean responses on the extent of awareness of adaptive learning platforms for effective instructional delivery**

**Male = 26, Female = 6, N= 32**

| S/No | Item statements | $\overline{X}^1$ | $SD^1$ | $\overline{X}^2$ | $SD^2$ | $\overline{X}^3$ | $SD^3$ | Rem |
|---|---|---|---|---|---|---|---|---|
| 1. | I am not aware of any type of adaptive learning platforms for my instructional delivery. | 3.00 | 0.95 | 3.13 | 0.90 | 3.06 | 0.92 | HE |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2. | I do not know the potential benefits of using adaptive learning platforms in Economics education. | 2.78 | 0.90 | 3.08 | 0.88 | 2.94 | 0.89 | HE |
| 3. | I am not aware of how adaptive learning platform can be used to enhance effective instructional delivery of Economics education. | 3.22 | 0.90 | 3.42 | 0.93 | 3.32 | 0. 91 | HE |
| 4. | I have not heard about adaptive learning platform in a seminar/workshop. | 2.96 | 0.88 | 3.29 | 0.86 | 3.13 | 0. 88 | HE |
| 5. | I do not have the confidence to get into any instructional method that is tech-driven. | 2.96 | 0.93 | 3.25 | 0.89 | 3.11 | 0. 91 | HE |
| 6. | I am yet to understand how to use any of the adaptive learning platforms for my instructional delivery | 2.96 | 0.93 | 3.42 | 0.58 | 3.19 | 0. 79 | HE |
| | **Cluster mean** | **2.98** | **0.92** | **3.27** | **0.84** | **3.13** | **0.88** | **HE** |

**$X^1$**= Male mean, $X^2$= Female mean, $X^3$= Aggregate mean

From Table 1 above, it is evident that items 1-6 had a cluster mean of 2.98 for male Economics education lecturers and 3.27 for the female Economics education lecturers with the aggregate cluster mean score of 3.13. The result indicated that all the items had mean scores that fall within the range of 2.50 to 3.49 which indicates high extent. This further shows that male and female Economics education lecturers were not aware of adaptive learning platforms for effective instructional delivery. Furthermore, the Table also showed that cluster standard deviation of the items 1-6 was 0.92 for male Economics education lecturers and 0.84 for female Economics education lecturers with the grand standard deviation of 0.88. These show that the respondents (male and female Economics education lecturers) were not far from the mean opinion of each other on the extent of awareness of adaptive learning platform for effective Economics instructional delivery by Economics education lecturers.

**$Ho_1$:** There is no significant difference in the mean responses of male and female Economics education lecturers on the extent of awareness of adaptive learning platform for effective instructional delivery.

**Table 2: t-test analysis on the mean rating of Male and female Economics education lecturers on the extent of awareness of adaptive learning platform for effective instructional delivery**.

| Respondents | N | $\bar{X}$ | SD | Df | t-cal | p-value | Decision |
|---|---|---|---|---|---|---|---|
| Male | 26 | 2.98 | 0.92 | | | | |
| | | | | 30 | -0.74 | 1.16 | NS |
| Female | 6 | 3.27 | 0.84 | | | | |

From the information as contained in Table 2, it indicates a significant p-valve of 1.16. Since the p-value of 0.16 is greater than 0.05 alpha value, the null hypothesis is therefore accepted. Hence, there is no significant difference in the mean rating of male and female Economics education lecturers on the extent of awareness of adaptive learning platforms for effective instructional delivery.

**Research Question 2:** To what extent do male and female Economics education lecturers utilize adaptive learning platform for effective instructional delivery?

**Table 3: Male and female Economics education lecturers' mean score on the extent of utilization of adaptive learning platform for effective instructional delivery. Male = 26 female = 6 = 32**

| S/No | Item statements | $\bar{X}^1$ | $SD^1$ | $\bar{X}^2$ | $SD^2$ | $\bar{X}^3$ | $SD^3$ | Remar |
|---|---|---|---|---|---|---|---|---|
| 7. | I rarely use the interactive simulations provided by smart sparrow during instructional deliveries. | 2.5 | 0.95 | 2.96 | 0.81 | 2.77 | 0.89 | HE |
| 8. | I do not use designed digitally's adaptive assessment for tailor quizzes and exams for individual students. | 2.87 | 0.92 | 3.17 | 0.87 | 3.02 | 0.89 | HE |
| 9. | I have never used pearson interactive lab's personalized feedback to help students during instructional delivery. | 2.70 | 1.02 | 3.17 | 0.87 | 2.94 | 0. 97 | HE |
| 10. | I find it complex utilizing realizeit's interactive contents for assessing students during instructional delivery. | 3.06 | 0.88 | 3.08 | 0.78 | 3.06 | 0. 82 | HE |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11. | The intuitive interface of cogbook does not make my economics content delivery easier. | 2.74 | 1.01 | 3.00 | 0.83 | 2.87 | 0. 92 | HE |
| 12. | Personalized learning experiences provided by adaptemy is difficult for me to use | 3.22 | 0.79 | 3.42 | 0.65 | 3.32 | 0. 73 | HE |
| | **Cluster mean** | **2.86** | **0.93** | **3.13** | **0.80** | **3.00** | **0.87** | **HE** |

$X^1$= Male mean, $X^2$= Female mean, $X^3$= Aggregate mean

In Table 3 above it was observed that the cluster mean for the male Economics education lecturers was 2.86 while that of the female Economics education lecturers was 3.13 with the overall cluster mean score of 3.00. However, the result indicated that all the items had mean scores that fall within the range of 2.50 to 3.49 hence high extent. By implication, it shows that Economics education lecturers do not use adaptive learning platform for effective instructional delivery to a very high extent. The Table also depicts that the cluster standard deviation for male Economics education lecturers was 0.93 while that of the female Economics education lecturers was 0.80 with the overall standard deviation of 0.87. These showed that the respondents were not far from the mean opinion of each other in their responses on the extent of utilization of adaptive learning platforms by Economics education lecturers for effective instructional delivery.

**Hypothesis 2:** There is no significant difference in the mean responses of male and female Economics education lecturers on the level of utilization of Adaptive learning platforms for effective instructional delivery.

**Table 4: The t-test analysis on the mean rating of male and female Economics education lecturers on the extent of utilization of Adaptive learning platforms for effective instructional delivery**

| **Respondents** | **No** | $\overline{X}$ | **SD** | **Df** | **t-cal.** | **p-value** | **Decision** |
|---|---|---|---|---|---|---|---|
| Male | 26 | 2.86 | .93 | | | | |
| | | | | 30 | -0.73 | 1.73 | NS |
| female | 6 | 3.13 | .80 | | | | |

The results in the Table 4 shows a p-valve of 1.73 which is greater than 0.05 alpha value, hence the null hypothesis was therefore accepted. This means that there is no significant difference in the mean responses of male and female Economics education lecturers on the extent of utilization of Adaptive learning platforms for effective instructional delivery. It further indicated that gender had no interaction effect on the mean rating of Economics education lecturers' utilization of Adaptive learning platforms for effective instructional delivery.

**Discussion of Findings**

The results in Table 1, showed that to a high extent, Economics education lecturers were not aware of any of the Adaptive learning platforms and some of the Economics education lecturers did not know the application of Adaptive learning platform. More so, some of the lecturers were not aware that Adaptive learning platform can be used to engage students meaningfully to promote their effective achievement. Again, most of the lecturers to a high extent had not heard of the concept of Adaptive learning platform. Furthermore, some of the lecturers to a high extent were not familiar with some of the types of Adaptive learning platforms such as; smart sparrow, designed digitally, Pearson interactive lab among others.

In Table 3, it was found that many of the Economics lecturers to a high extent do not use Adaptive learning platforms such as interactive simulations as provided by smart sparrow platform. Again, to a high extent, most of the lecturers of Economics education do not use Adaptive assessments in order to tailor lesson and enhance individualized achievement. More so, to a high extent, Economics education lecturers do not use feedback as contained in designed digitally to identify students' weaknesses. It was also discovered that to a high extent, most. Economics education lecturer found it very difficult utilizing some of the interactive contents as contained in Pearson interactive lab in order to adequately engage students. Furthermore,

most of the Economics education lecturers found it difficult in creating and managing Economics course contents using the realizeit platform. Finally, Economics education lecturers to a high extent do not use the personalized learning experiences as provided in cogbook and adaptemy in order to create confidence in the students.

## Conclusion

However, from the findings of this study, it could be concluded that Economics education lecturers were not aware of Adaptive learning platform. The findings further warrants the conclusion that to a high extent, Economics education lecturers do not make use of designed digitally, smart sparrow, realizeit, cogbook among other Adaptive learning platforms for effective instructional delivery.

## Recommendations

Based on the findings and the conclusions, it was recommended that:

1. Economics education lecturers should be encouraged morally and financially to participate in seminars, workshops among others in order to be aware of innovations in the education sector use as the use of different teaching and learning platforms.
2. School authorities should ensure that some of these contemporary learning platforms are made affordable to lecturers to acquire and use by subsidizing the cost.

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