Perceptions of Teachers and Students On the Use of Interactive Learning Instructional Package (ILIP) in Nigeria Senior Secondary Schools in Ondo State, Nigeria

Perceptions des enseignants et des élèves sur l'utilisation de kit d'apprentissage interactif (ILIP) dans les écoles secondaires supérieures de l'État d'Ondo, au Nigeria

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Abstract

This study investigated the perception of teachers and students on the use of Interactive Learning Instructional Package (ILIP) in Nigeria senior secondary schools in Akoko South West Local Government Area, Ondo State. Two research questions were formulated to reveal the perception of teachers and students on the use of ILIP. A purposive sampling method was employed to select 150 participants for the study (100 students and 50 teachers). Questionnaire on Students' Perception in ILIP (QSPILIP) and Questionnaire on Teachers' Perception in ILIP (QTPILIP) was developed by researchers and validated by educators; they were used for data collection. QTPILIP and QSPILIP were built with Google Forms and the link was distributed to the respondents online via social media community; WhatsApp specifically. The instruments were found reliable at r = 0.73 and r = 0.75, using

Cronbach alpha coefficient, respectively. Descriptive statistics were deployed to analyze the research questions using frequency counts, percentages and bar charts. The results of the study revealed that both students and teachers have a positive perception of ILIP innovation in teaching BASIC programming as 94% of teachers and students agree that ILIP is important to teach and learning BASIC in schools. There are many possible setbacks that might hinder the use of ILIP in the future such as epileptic power supply, lack of ICT facilities and insufficient time allocation for computer studies on school's timetable etc. Findings revealed that ILIP as an instrument was found more interesting, interactive and engaging in relating BASIC rules and procedures to assist students in mastering learning programming contents at their own pace. Hence, ILIP is found to be effective in developing and improving students' academic achievement in BASIC programming in schools. The research recommended that government should provide well-equipped computer laboratories and power supply in public senior secondary schools to facilitate the effective use of ILIP tool to teach BASIC programming.

Résumé

Cette étude a examiné la perception des enseignants et des élèves sur l'utilisation du kit d'apprentissage interactif (Interactive Learning Instructional Package - ILIP) dans les écoles secondaires supérieures du Nigeria dans la zone de gouvernement local d'Akoko Sud-Ouest, dans l'État d'Ondo. Deux questions de recherche ont été formulées pour révéler la perception des enseignants et des élèves sur l'utilisation de l'ILIP. Un échantillonnage raisonné a été utilisé pour sélectionner 150 participants à l'étude (100 élèves et 50 enseignants). Le questionnaire sur la perception de l'ILIP par les élèves (QSPILIP) et le questionnaire sur la perception de l'ILIP par les enseignants (QTPILIP) ont été élaborés par les chercheurs et validés par les éducateurs ; ils ont été utilisés pour la collecte des données. Le QTPILIP et le QSPILIP ont été élaborés à l'aide de Google Forms et le lien a été distribué aux répondants en ligne par l'intermédiaire de la

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communauté des médias sociaux, en particulier WhatsApp. Les instruments ont été jugés fiables à r = 0,73 et r = 0,75, en utilisant le coefficient alpha de Cronbach, respectivement. Des statistiques descriptives ont été utilisées pour analyser les questions de recherche à l'aide de comptes de fréquence, de pourcentages et de diagrammes à barres. Les résultats de l'étude ont révélé que les élèves et les enseignants ont une perception positive de l'innovation de l'ILIP dans l'enseignement de la programmation BASIC, puisque 94 % des enseignants et des élèves reconnaissent que l'ILIP est important pour l'enseignement et l'apprentissage de la programmation BASIC dans les écoles. De nombreux obstacles pourraient entraver l'utilisation de l'ILIP à l'avenir, tels que l'épilepsie de l'alimentation électrique, le manque d'équipements TIC et l'insuffisance du temps alloué aux études informatiques dans l'emploi du temps de l'école, etc. Les résultats ont révélé que l'ILIP, en tant qu'instrument, a été jugé plus intéressant, interactif et engageant dans la transmission des règles et procédures BASIC pour aider les élèves à maîtriser les contenus de programmation à leur propre rythme. L'ILIP s'est donc avéré efficace pour développer et améliorer les résultats scolaires des élèves en programmation BASIC dans les écoles. L'étude recommande au gouvernement de fournir des laboratoires informatiques bien équipés et une alimentation électrique dans les écoles secondaires supérieures publiques afin de faciliter l'utilisation efficace de l'outil ILIP pour enseigner la programmation BASIC.

Mots-clés : Kit pédagogique, langage de programmation, perception.

Introduction

Information and communication technology (ICT) is a tool that has tremendously transformed many sectors and has affected the way people work, think, and live. It plays a massive role in many disciplines like architecture, business, law, medicine, banking, engineering, tourism, travel, and education. In education, computer among other ICT gadgets is used to design instructional packages for teaching and learning, lesson delivery, creation of e-books, registration of entrance examinations, and examination grading. These gadgets are also used to keep students' records and make learning more interactive. Based on the immense and immeasurable impact of computers on education, several nations across the globe incorporated computer studies into their educational system at all levels (primary, secondary, and tertiary levels) to empower their young ones and the next generation to meet international standards.

In 1987, Nigeria adopted computer studies into secondary schools' curriculum so that students can catch up with the increasing trends in technology (FGN, 2004). In order to achieve this innovation, Beginners' All-purpose Symbolic Instruction Code (BASIC) programming was included as part of the topic to be learned by the students undergoing training in the subject. It is aimed at developing problem-solving skills in these learners. According to David (2013), the programming language is defined as a vocabulary or a set of grammatical rules for instructing a computer to perform specific tasks. It is designed to communicate instructions to a machine, particularly a computer. It can be used to create programs to control the behavior of a machine or to express algorithms. Acquisition of programming skills, therefore, has been described as a vital instrument for developing problem-solving skills (Ambrosio, Costa, and Franco, 2011), higher-order thinking skills (Fessakis et al., 2013) and creative thinking skills in the individual (Gao, 2011). Programming necessitates the acquisition and thorough knowledge of various rules by the student, including semantic and syntactic knowledge (Chen and Du, 2012) as well as coding and algorithmic knowledge (Govender, 2009). Coding is a skill that involves the typing of rigid syntactic rules and, whilst acquiring this skill, students often make errors. BASIC occupies a

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central position in the teaching and learning of computer programming
at the Secondary Schools level where computer education is offered
(Olelewe, 2009).

It is unfortunate that students at the secondary school level invariably
find it difficult to understand some of these concepts. Ogundele and
Ajobiewe (2020) revealed that many students find programming
difficult and disheartening at the secondary school level in Nigeria.
Since BASIC programming is the basic skill required of computer
programmers or computer science students, the negative impact of a
solid background in BASIC may be harmful consequences on the
learner's attitude towards programming. Computer programming
especially BASIC programming requires a higher level of knowledge,
it includes the need for meta-cognitive skills, such as understanding
"When" and "Why" certain tasks are needed. This can be difficult for
students to grasp; as multiple studies have shown.

Various studies (Gomes and Mendes, 2007; Govender, 2009) have
confirmed that learning to program is considered hard work which is
sometimes boring and often difficult to grasp. Lack of understanding
and high levels of abstract teaching of programming (Koulouri, Lauria,
and Macredie, 2015; Bergersen and Gustafsson, 2015), gender and
mathematics knowledge (Lau and Yuen, 2010; Sullivan and Bers,
2016; Yurdugül and Aşkar, 2013), problem-solving skills (Yurdugül
and Aşkar, 2013) as well as programming inexperience (Jegede, 2009),
the idiosyncratic nature and complex syntax of programming (Altadmri
and Brown, 2015; Topalli and Cagiltay, 2018) have been affirmed as
the factors contributing to students' difficulties in learning BASIC
programming.

There are gaps or deficiencies in students' knowledge of computer
programming in each phase of the programming processes; the lack of
skills in analyzing problems, ineffective use of problem representation
techniques for problem-solving, ineffective use of teaching strategies
for problem-solving and coding, the difficulty in mastering
programming syntaxes and functions, and unavailability of adequate
materials were the identified problems (Ogundele and Ajobiewe,
2020). Effects of these difficulties highly contribute to students'

repeated failure, and loss of interest in programming (Law, Lee, and Yu, 2010; Tan, Ting, and Ling, 2009). This problem calls for immediate attention because the nature of this topic has made it difficult for students to comprehend when taught in a traditional classroom setting (Gomes and Mendel, 2007).

Therefore, there is a need to incorporate teaching methods that will introduce the reality of concepts into the learning environments. BASIC programming requires the application of different techniques to teach it effectively and to make it interesting and meaningful (Olelewe, 2009). Muhammad and Fadzlliyati (2010) suggested that teachers need to engage the students in an experiential learning environment so that they are able to experience learning with some level of enjoyment. Munawaroh (2015) opined that organized quality interactive learning which is inspiring, fun, and challenging, motivates the students to actively participate in the teaching process and provides enough space for innovation, creativity and independence according to their talents, interests and physical and psychological development of students. The use of Interactive Learning Method activates the student's cognitive self-reliance (striving and being able to think critically and independently, being able to find pathways in a new situation, express thoughts in clearer ways, easy-to-understand, and concise manner, come up with an approach of his/her own to resolving an issue and be willing to help others enrich their array of competencies – Samal et al, 2016).

An instructional package is a solution for learning needs and problems, it is used to simplify learning for the user (Alshahad, 2018). It makes the learning process engaging and increases students' motivation toward the concept/subject; as well as increases students' achievement. Interactive learning modules can be used in the classroom environment for effective learning (Goldee, 2012).

Many findings have found that Interactive Learning Instructional Packages are effective and suitable in teaching BASIC programming in other fields like economics, mathematics etc. Akinyemi and Ologunada (2022) revealed that Interactive Learning Instructional Package has a more significant beneficial influence on the learners of

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BASIC programming than the conventional lecture method. Its usage does not discriminate against genders in academic achievement. Students who were taught arithmetic progression with computer-assisted instructional packages achieved a higher score than those with the lecture method (Koni, Zephaniah and Okoro, 2019). Students taught using the simulation method achieved higher than those taught with the traditional method (Odo, 2016). The web-Quest package influenced students' performance levels because a large number of students performed better (Babatunde, Chukwuemeka and Godwin, 2020).

Perception can be defined as the process of interpreting sensory information in order to form a meaningful experience of the world. It describes the process of gaining an understanding or awareness of something through the use of the five senses. Perception is an important factor to consider in this finding. Perception is affected by the way information is presented, which can ultimately determine the level of acceptance and interaction with the material. Studies conducted (Adebayo 2008 and Ogunsumi 2015) found that students had more positive perceptions of interactive learning instructional packages when presented in an engaging way. Teacher perceptions also vary. Oluwole and Oluji (2014) found that teachers often lack confidence in their ability to use and effectively incorporate interactive learning instructional packages into their teaching. However, they also found that teachers often lack confidence in their ability to use and effectively incorporate interactive learning instructional packages into their teaching.

Therefore, it is essential to understand the various perceptions associated with the use of interactive learning instructional packages, as they can have a significant effect on the level of student engagement and success. Hence, this research focused on investigating the perception of teachers and students on the use of Interactive Learning Instructional Package (ILIP) and its challenges in Nigerian senior secondary schools in Akoko South West LGA.

Research Questions

1. What are the perceptions of teachers and students on the use of Interactive Learning Instructional Package (ILIP) in secondary school?
2. What are the possible challenges that Nigerian teachers and students will face in using Interactive Learning Instructional Package (ILIP) in the classroom?

Theoretical Framework

Learning theories depict how learning takes place among human being and animals. Selection of any of the learning theories by the teacher of computer has great influences on the instruction. Learning theories that was applicable to this study which are in agreement with theories suggested by Olelewe (2009) in teaching and learning of computer programming are: Connectionism, Gestalt Learning and Cognitive Flexibility.

Connectionism proposes that learning is a process of forming simple associative connections between stimuli and responses. In this context, perception of teachers and students in the use of interactive learning instructional package in Nigeria Senior Secondary School could be understood in terms of the activation of specific connectionist networks through the presentation of stimuli, such as the interactive learning package and the student's response to it. Through repeated exposure, a student's response to the instructional package can be modified, eventually leading to a change in their perception. Ultimately, this could lead to a positive attitude towards the use of the package.

Gestalt Learning is a cognitive theory that suggests that individuals learn best when they are able to form meaningful patterns out of related items. It is essential for students to be able to identify the part-whole relationships between objects and concepts in order to acquire meaningful knowledge. In this study, Gestalt learning could help teachers and students in the use of interactive learning instructional package in Nigeria Senior Secondary Schools by helping them to make

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meaningful connections between concepts and objects within the package, thus allowing them to learn more effectively.

Cognitive Flexibility is the ability to switch between different perspectives or tasks when engaging in problem-solving or learning. In the context of this study, cognitive flexibility would refer to the ability of both teachers and students to recognise different approaches to using the interactive learning instructional package in Nigeria Senior Secondary School. This could include the ability to switch between different learning strategies, consider different perspectives, and recognise the impact of the instructional package on different types of learners.

Methodology

The research design adopted for the study was survey research design. Purposive sampling technique was employed to select participants (100 students and 50 teachers) from Government Senior Secondary Schools in Akoko South West Local Government Area of Ondo State. The schools selected were those who offered Computer Studies, had well-equipped computer laboratory, electricity/generator and were willing to participate.

The instrument "Interactive Learning Instructional Package (ILIP)" was developed by the researchers which serve as treatment to the students. This package was developed with authoring tool called Articulate Storyline version 3. The course contents were articulated and published for students' consumption. The students have access to the instruction through a mouse click on the package and it launch through any browser a learner chooses to use. ILIP can be published on Learning Management System (LMS) through which students can access the package anywhere, anytime over internet. That means ILIP can be accessed offline and online by the users. The package is cross-platform accessible; that is its contents can be accessed on any internet-based devices.

Questionnaire on students' perception on ILIP (QSPILIP) and questionnaire on teachers' perception on ILIP (QTPILIP) were

developed by the researchers and validated by educators; they were used to gather data on the perception of students and teachers on the use of Interactive Learning Instructional Package (ILIP) and its future possible challenges.

QTPILIP and QSPILIP were built with Google Form and the links were distributed to the respondents online via social media community; WhatsApp specifically. The instruments were found reliable at r = 0.73 and r = 0.75 using Cronbach alpha coefficient, respectively. Descriptive statistics using frequency counts, percentage and bar charts were used to analyze the research questions.

Results

Analysis of Research Questions
Research Question 1: What is the perception of teachers and students on the use of ILIP in secondary schools?

Table 1.1: Perception of students on the use of ILIP in secondary schools

S/N	ITEMS	Students (100)				
		SA	A	D	SD	Remarks
1.	ILIP is good for BASIC programming	60 (60%)	34 (34%)	4 (4%)	2 (2%)	**Agreed**
2.	ILIP is important for students in learning BASIC programming in schools than conventional method	51 (51%)	43 (43%)	4 (4%)	2 (2%)	**Agreed**
3.	The use of ILIP is time consuming/inefficient	7 (7%)	4 (4%)	48 (48%)	41 (41%)	**Disagreed**
4.	Students can easily learn programming skills effectively via ILIP	64 (64%)	28 (28%)	5 (5%)	3 (3%)	**Agreed**
5.	ILIP is very interactive	62 (62%)	31 (31%)	6 (6%)	1 (1%)	**Agreed**
6.	ILIP is easier to access without special training	65 (65%)	30 (30%)	3 (3%)	2 (2%)	**Agreed**
7.	It is easy to navigate through the ILIP environment	56 (56%)	36 (36%)	3 (3%)	5 (5%)	**Agreed**

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8.	The use of ILIP can increase the interest of students toward learning programming BASIC programming	61 (61%)	31 (31%)	3 (3%)	5 (5%)	**Agreed**
9.	The use of ILIP can make the students more productive	61 (61%)	32 (32%)	5 (5%)	2 (2%)	**Agreed**
10.	Students can actively pursue learning new and advanced programming language in higher institution after using ILIP	45 (45%)	47 (47%)	6 (6%)	2 (2%)	**Agreed**
11.	The developer of ILIP knows the knowledge of BASIC programming very well.	61 (61%)	33 (33%)	5 (5%)	1 (1%)	**Agreed**
12.	Students get my programming tasks done quickly with ILIP	52 (52%)	43 (43%)	3 (3%)	2 (2%)	**Agreed**
13.	ILIP is tasking	53 (53%)	39 (39%)	7 (7%)	1 (1%)	**Agreed**
14.	ILIP enhances interaction among students	54 (54%)	38 (38%)	4 (4%)	4 (4%)	**Agreed**
15.	Students concentrate more on learning activities in ILIP	49 (49%)	43 (43%)	4 (4%)	4 (4%)	**Agreed**
16.	ILIP makes learners lose control over the learning process	7 (7%)	4 (4%)	59 (59%)	30 (30%)	**Disagreed**
17.	ILIP increases students' academic achievements	67 (67%)	25 (25%)	7 (7%)	1 (1%)	**Agreed**

Table 1.1 revealed that the perception of students on the use of
Interactive Learning Instructional Package (ILIP) and how it can
impact effective learning of BASIC was largely positive. It indicated
that all the items were positively worded with higher percentage
acceptance. The findings revealed both students agreed that the use of
ILIP is important to teaching and learning of BASIC programming.

Figure 1.1 showed the clustered bar chart to represent data collected on the perception of students on the use of ILIP to teach BASIC programming. The chart is to make easy understanding of the results.
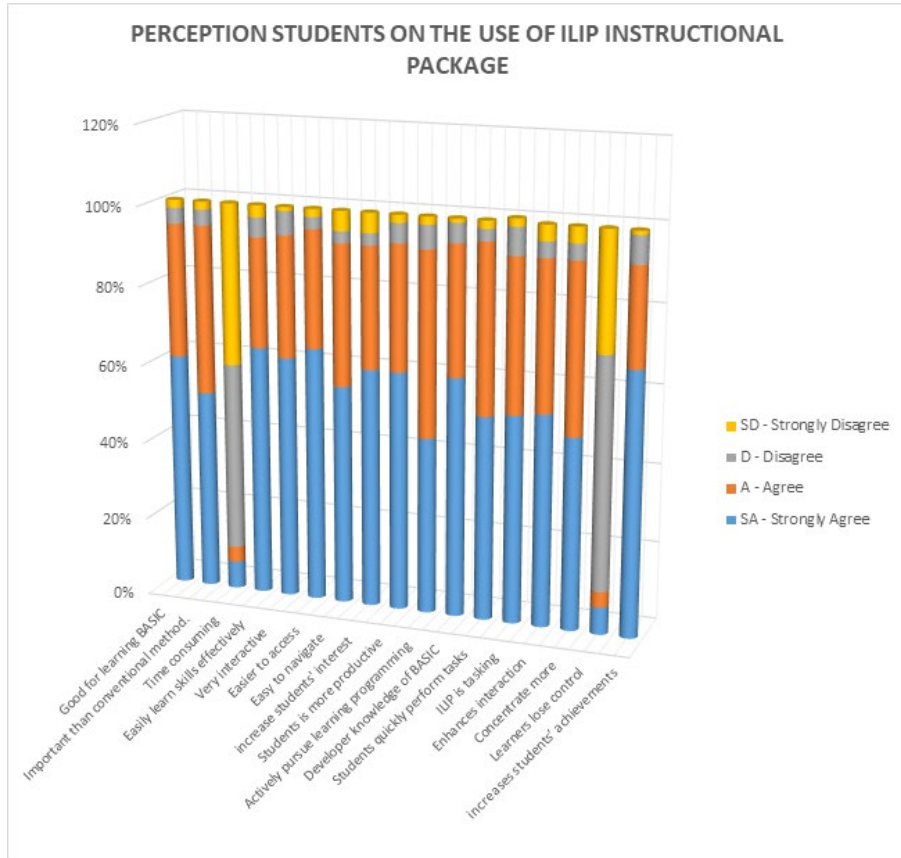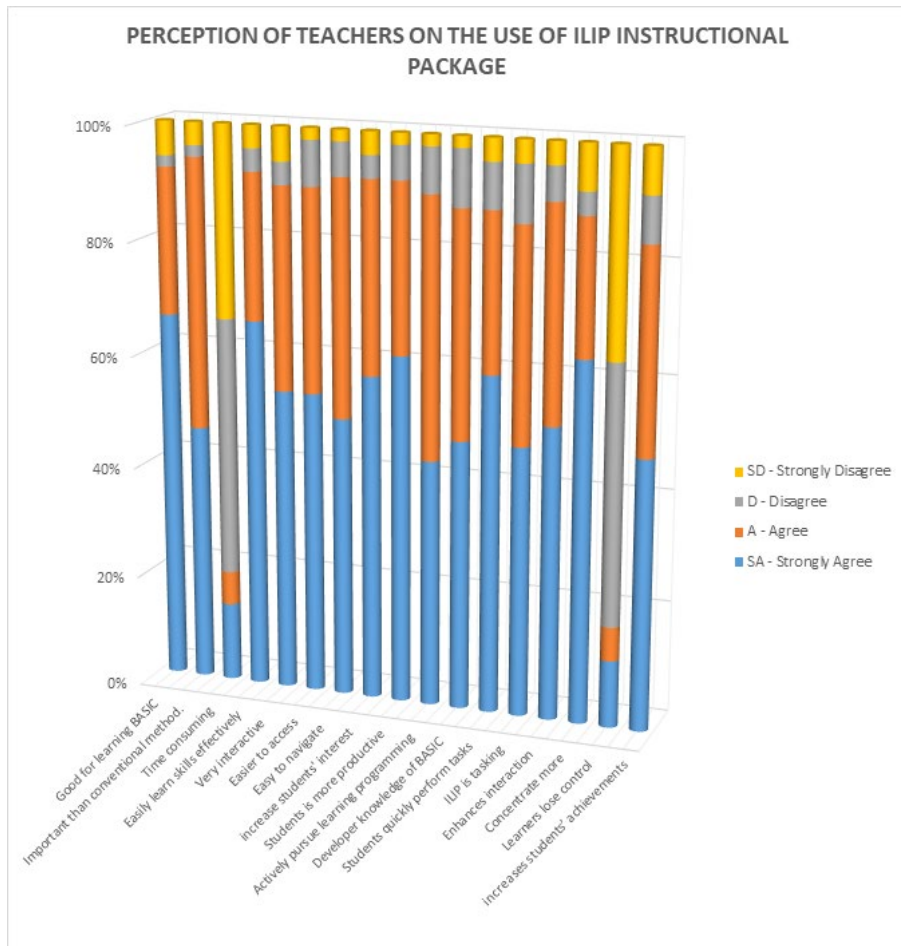
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Table 1.2: Perception of teachers on the use of ILIP in secondary school

S/N	ITEMS	Teachers				
		SA	A	D	SD	Remarks
1.	ILIP is good for learning BASIC programming	33 (66%)	13 (26%)	1 (2%)	3 (6%)	**Agreed**
2.	ILIP is important for students in learning BASIC programming in schools than conventional method	23 (46%)	24 (48%)	1 (2%)	2 (4%)	**Agreed**
3.	The use of ILIP is time consuming/inefficient	7 (14%)	3 (6%)	23 (46%)	17 (34%)	**Disagreed**
4.	Students can easily learn programming skills effectively via ILIP	33 (66%)	13 (26%)	2 (4%)	2 (4%)	**Agreed**
5.	ILIP is very interactive	27 (54%)	18 (36%)	2 (4%)	3 (6%)	**Agreed**
6.	ILIP is easier to access without special training	27 (54%)	18 (36%)	4 (8%)	1 (2%)	**Agreed**
7.	It is easy to navigate through the ILIP environment	25 (50%)	21 (42%)	3 (6%)	1 (2%)	**Agreed**
8.	The use of ILIP can increase the interest of students toward learning BASIC programming	29 (58%)	17 (34%)	2 (4%)	2 (4%)	**Agreed**
9.	The use of ILIP can make the students more productive	31 (62%)	15 (30%)	3 (6%)	1 (2%)	**Agreed**
10.	Students can actively pursue learning new and advance programming language in higher institution after using ILIP	22 (44%)	23 (46%)	4 (8%)	1 (2%)	**Agreed**
11.	The developer of ILIP knows the knowledge of BASIC programming very well.	24 (48%)	20 (40%)	5 (10%)	1 (2%)	**Agreed**
12.	Students get my programming tasks done quickly with ILIP	30 (60%)	14 (28%)	4 (8%)	2 (4%)	**Agreed**

13.	ILIP is tasking	24 (48%)	19 (38%)	5 (10%)	2 (4%)	**Agreed**
14.	ILIP enhances interaction among students	26 (52%)	19 (38%)	3 (6%)	2 (4%)	**Agreed**
15.	Students concentrate more on learning activities in ILIP	32 (64%)	12 (24%)	2 (4%)	4 (8%)	**Agreed**
16.	ILIP makes learners lose control over the learning process	6 (12%)	3 (6%)	23 (46%)	18 (36%)	**Disagreed**
17.	ILIP increases students' academic achievements	24 (48%)	18 (36%)	4 (8%)	4 (8%)	**Agreed**

Table 1.2 revealed the perception of teachers on the use of Interactive Learning Instructional Package (ILIP) and how it can impact effective learning of BASIC. It indicated that all the items are positively worded with higher percentage acceptance. The findings revealed both teachers agreed that the use of ILIP is important to teaching and learning of BASIC programming.

Figure 1.2 below showed the clustered bar chart to represent data collected on the perception of teachers on the use of ILIP to teach BASIC programming. The chart is to make easy understanding of the results.

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Research Question 2: What challenges will students and teachers face in using ILIP in classroom in the future?

Table 2.1: Challenges that students and teachers will face in using ILIP in classroom in the future

S/N	ITEMS	Students (100)			Teachers (50)		
		Yes	No	Remarks	Yes	No	Remarks
1.	Insufficient time allocation for computer studies in school's timetable	93 (93%)	7 (7%)	Yes	47 (94%)	3 (6%)	Yes
2.	Shortage of computer such as laptop and desktop	91 (91%)	9 (9%)	Yes	46 (92%)	4 (8%)	Yes
3.	Epileptic or lack of power supply	95 (95%)	5 (5%)	Yes	45 (90%)	5 (10%)	Yes
4.	Lack of students' interest in using ILIP	69 (69%)	31 (31%)	Yes	27 (54%)	23 (46%)	Yes
5.	Lack of computer laboratory, seminar room or audio-visual room	87 (87%)	13 (13%)	Yes	47 (94%)	3 (6%)	Yes
6.	Inefficient number of media (Projector, UPS, Mouse etc.) for effective use of computer to access ILIP platform	73 (73%)	27 (27%)	Yes	27 (54%)	23 (46%)	Yes
7.	Absence of motivation to use ILIP	66 (66%)	34 (34%)	Yes	34 (68%)	16 (32%)	Yes
8.	Inadequate use of	91 (91%)	9 (9%)	Yes	39 (78%)	11 (22%)	Yes

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	computer by learners						
9.	Adoption of new trending programming language	14 (14%)	86 (86%)	No	7 (14%)	43 (86%)	No
10.	Inability of students to purchase personal computer	90 (90%)	10 (10%)	Yes	44 (88%)	6 (12%)	Yes
11.	Lack of technical staff to support students while using ILIP	66 (66%)	(34%)	Yes	33 (66%)	17 (34%)	Yes

In Table 2.1 the findings showed that both students and teachers attested that insufficient time allocation for computer studies in school's timetable can hinder effective use of ILIP in the future, shortage of computer such as laptop and desktop will not make the method effective in the future, epileptic or lack of power supply which is the common problem affecting Nigeria can serve as bottleneck to the use of ILIP in schools, lack of interest of students can also be one of the challenges in using ILIP in the future.

In the same vein, student and teachers agreed that lack of computer laboratory, seminar room or audio-visual room can also serve as problem to the use of ILIP in the future, inefficient number of media (Projector, UPS, Mouse etc.) can serve as setback for effective use of computer to access ILIP platform while absence of motivation among teachers and NGOs can serve as the problem facing the use of ILIP.

Students and teachers believed that inadequate use of computer by learners like using the computer to play game or surfing internet during class can serve as one of the major problems that will hinder the use of the package in the future, adoption of new trending programming language will not hinder the use of ILIP in the future, inability of students to purchase personal computer for self-learning can be a major

problem to the use of ILIP in the future. Finally, both students and teachers showed that lack of technical staff to support students will be challenge to the use of ILIP in the future.

For better understanding, Fig 2.1 and Fig 2.2 below showed the descriptive distribution of the data collected about the challenges of ILIP in the future
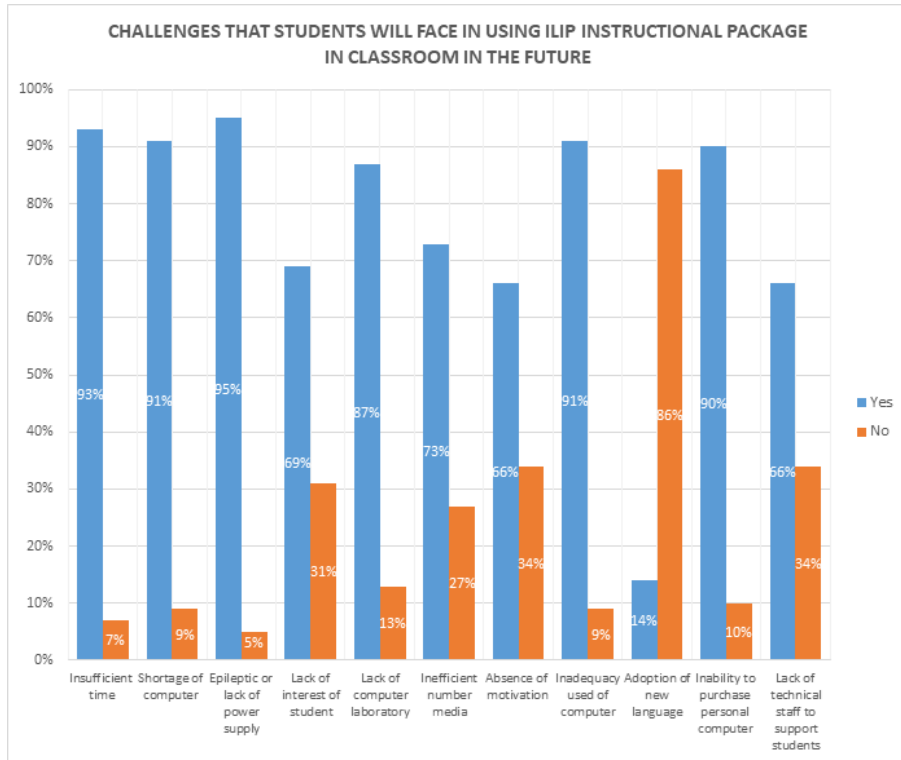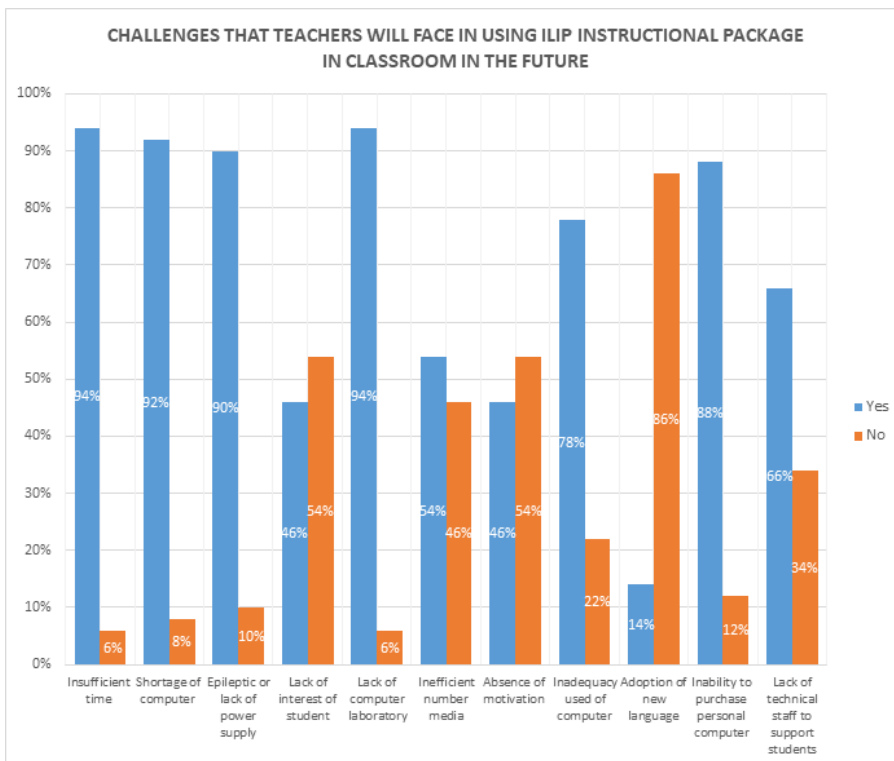

Fig 2.1

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Fig 2.2

Discussion

Table 1.1 and Table 1.2 indicated the percentage of students' and teachers' perceptions of the use of the Interactive Learning Instructional Package (ILIP) in the classroom in teaching and learning BASIC programming. Students and teachers agreed that ILIP is important to the teaching and learning of BASIC. And as well demonstrated a high level of efficiency in the ease of use of ILIP as it is not time-consuming. In essence, students can easily learn BASIC programming skills effectively via ILIP. The majority of the respondents revealed that ILIP is very interactive and easy to access without special training.

This can be supported by Augustine et al (2017) that teachers have a high level of perceived usefulness and perceived ease of use of

technology materials. It is also supported by Yanti et al (2017) who stated that teachers showed 65% higher positive perception of perceived usefulness and 55% positive perception of perceived ease of use of E-learning in educational activities.

The respondents from Tables 1.1 and 1.2 revealed that ILIP has the capacity to increase students' academic achievement in BASIC programming. This is in agreement with Odo's (2016) submission that students taught with computer simulation have higher achievement scores than the conventional method. The finding revealed that students concentrate more on learning activities. The majority of the respondents disagreed with variable 16 which says ILIP makes learners lose control over the learning process. This means ILIP captures the attention of students while learning BASIC programming. This is supported by The Access Center (2021) which stated that computer captures the students' attention because the programs interact with and engage students' spirit of competitiveness to increase their scores.

Also, the finding revealed that students increased toward learning BASIC programming via ILIP, because it makes students more productive and at the same time enhances interaction among students. This idea conforms to Odo's (2016) view that the Simulation Method of Instruction (SMI) helps to create meaningful learning and at the same time students taught with SMI show more interest in a programming language than those taught with the Traditional Method of Instruction (TMI).

The study also found that ILIP is easy to navigate through its environment, very interactive, easy to access without special training and enhances interaction among students. This is in line with the finding by Akinyemi (2013) that LOGO was child-friendly, not difficult but easily accessible, enjoyable, and could be learned and used in an easy and natural way.

Table 2.1 revealed that both students and teachers for this study attested to the following possible challenges that can affect the application/usage of ILIP in the teaching and learning of BASIC programming in the future: Insufficient time allocation for computer

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studies in the school's timetable, shortage of computers such as laptop and desktop, epileptic or lack of power supply, lack of interest of the student in using ILIP, lack of computer laboratory, seminar room or audio-visual room, inefficient number of media (Projector, UPS, Mouse etc.) for effective use of a computer to access ILIP platform, absence of motivation to use ILIP, inadequate use of the computer by learners, Inability of students to purchase a personal computer and lack of technical staff to support students while using ILIP.

The above result is confirmed in Awotokun's (2016) submission that lack of ICT literacy among teachers, unstable electricity supply, high cost of ICT facilities, inappropriate funding etc., affect the use of ICT in schools. The result is also in line with Murtala and Norazrena's (2019) report which emphasizes that the factors that hinder the use of ICT materials in school are lack of training among teachers and lack of access to technological materials.

Conclusion

Based on the results of this finding, Interactive Learning Instructional Package has been found to be a greatly beneficial educational tool in Nigerian Senior Secondary Schools. Both teachers and students have expressed positive perceptions of the package, citing potential benefits to student learning outcomes, increased engagement levels, and improved teacher-student relationships. Despite these observations, there are still areas of improvement that can be addressed, such as providing adequate training for teachers and ensuring that the package is tailored to the needs of individual students. With these considerations in mind, an interactive learning instructional package can remain an effective and beneficial tool for Nigeria Senior Secondary Schools.

Recommendation

In view of the findings of this study, the following recommendations were made:
(a).   Teachers of Computer Studies should use Interactive Learning Instructional Package (ILIP) in the schools to teach BASIC programming.

(b). Well-equipped computer laboratories and power supply should be made available in public senior secondary schools by the government or NGOs to enhance easy use of Interactive Learning Instructional Package (ILIP) strategy.

(c). The use of ILIP strategy should be given greater emphasis in the curriculum. That it, Curriculum planners, instructional designers and developers in Nigeria should emphasize on the need to continuously use ILIP strategy to improve instructional delivery.

(d). Seminars, workshops should be organised by relevant bodies to educate and sensitize the teachers on the use of ILIP in teaching and learning of BASIC programming in Computer Studies

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