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Vulnerability of Educationally Atrisk Students on Computer Instructions in English Language

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ABSTRACT

The present study determined vulnerability of educationally at-risk students on computer instructions in English Language. The study was carried out in Owerri Municipal Council. The researcher raised two research questions and formulated two hypotheses. The design of the study was ex-post-facto research design. The population of the study was 160 senior secondary school students from eleven senior secondary school in Owerri Municipal Council. The sample of the study was 100 vulnerable – educationally at-risk students from SS2 strata. These students were purposively selected because of their peculiar features. Instruments used for the study were: Adopted Vulnerability Rating Scale (SVRS) and English Language Continuous Assessment PROFOMA for 2022/2023 assessment year. The instruments were validated by specialists from Faculty of Education, Imo State University. Reliability of the instrument was 0.72. The findings of the study was that vulnerable – educationally at risk students were demotivated in attending computer facilitated instruction, and that vulnerable-educationally at-risk students performed poorly in English Language assessment test for 2022/2023 academic year. Another finding was that female students perform better than male students in the assessment test for 2022/2023 academic year. Impliedly the findings suggest that computer instructions although widely sought for in many institutions of learning its use may not benefit the advantage vulnerable-educationally at risk students. the researcher recommended that educationally at-risk students should not receive instructions through computer facilitated programmes for effective learning to take place.

Keywords: Vulnerability, computer, instruction, risk, students

INTRODUCTION

Modernization and dynamism in educational advancement and the need to fill gaps created by evolving societal demands has introduced the use of artificial strategies to improve educational goals and effective utilization of educational outcomes toward problem solving engagements. Some examples today include the use of robots in delivering instructions in different departments of learning around the world. Another aspect of the phenomenon is the outburst in use of instructional websites, specifically designed to complement classroom activities thus, mediating different competencies from instructional specialists in various countries. Social websites such as WhatsApp, Instagram, Facebook, and U -tube, are consistently bombarded either to extract knowledge or create one for use by students. Through these instructional sites, information is decimated, knowledge created and friendship bonds made stronger. According to Eneogwe (2023) through internet instructions, determined students can build knowledge, acquire experiences and competencies desired to improve learning and future accomplishments.

One advantage of internet civilization in educational outcomes is that learners are exposed to diverse sources of information and instructions thus, advancing collaboration in ideas and knowledge transfer. Another advantage of digital instructions through internet facilitation is that students are privileged to be exposed to different teaching and learning methods. Availability of different sources of information and instruction will also reflect in different approaches and strategies built to accommodate diverse processing skills inherent in complex learning environment (Kola &Olu, 2018). Digital instructions may also check obsolete pedagogies often used by rigid classroom practices in comfort zone of conventional teachers. Therefore, modern internet

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dispatches may replace conventional analog learning, evidence in continued abysmal performance among students in competitive tests. By digital instructions, learning is made fun, inclusive, simple and proactive, confronting challenges of 21st century education.

Stimulations, puzzles games, Scrabble games, creative displacement games and more are available in educational websites and students make themselves busy and productive by utilizing these websites. Geography students may utilize internet application to read contours, locate positions on earth surface along longitude and latitude pathways. Internet services help in locating different places, replacing material compass navigation instruments.

In digital instructions, children do not need to position themselves before a chalkboard with the teacher dictating what, how and content of instructions. According to Petrovich (2019), digital learning encourages interactive collaboration and group activity among learners which are achieved through networking. Friends are made through social media sites and applications are forwarded with ease by applicants seeking for jobs. Students can also enter competitions that may result in monetary consolations or likes. Students can share knowledge through voice notes provided by whatsApp platforms. Documents and files could also be dispatched for educational purposes. Biology students can through photo shot interact with biological habitats, watch different species of organisms and collaborate with others at different locations. Students or groups can embark on zoom Interactions incorporating voice notes hence expanding frontiers of education and learning. Digital learning delivers instructional resources, sharing opportunities on locations away from classrooms through videos, audio, computer, multimedia communication or a combination of all artificial intelligence and digital learning tools. Interchangeably, every form of electronically supported teaching and learning are defined as internet instructions.

Adolescents have unique characteristics which are curiosity, imitation, emotional instability, mental immaturity and copying mates. Many students in the age bracket of adolescents operate handsets or smart phones therefore can easily access websites that float educational instructions. Those with laptops or desktop are predisposed to internet inquiries that may add value to learning. Students are effectively utilizing availability of educational websites in advancing knowledge and extending educational resources across cultures.

Despite these numerous advantages explained in this text, there are challenges of inclusiveness in utilizing digital technology among students in secondary schools, other challenges inherent in internet instructions are: large vacuum between the instructor and adherents, absence of action proactive research which may quickly address hindrances to learning, feedback from learners in response to instruction grey areas. Description in facilities used in internet instructions, sudden disconnect between learning objectives and instruction outcomes may be one of the notable disadvantages of internet classroom. According to Atsua and Umaru (2016) diverse classes of students display different problem situations that require immediate attention from a teacher, ranging from evaluating the nature of the difficulty physically before critical problem solving strategy. There are some learning challenges that computer instructions may find difficult to address for example, issues as students making noise when the teacher is addressing the class, disconnect in emotions challenging concentration, adverse use of education websites and other distractions. On a private note, students may decide to be distracted by watching films, listening to music or even, watching pornographic pictures without been monitored or questioned for the fact that the classroom teacher is absent.

The worst hit in computer instructions is the vulnerable or educationally challenged students. According to Ufuoma and Ojiamaoji (2020), Nnadozie and Otolehi (2017) vulnerable children are those in a state of being distracted due to feelings of tension, strain, conflicts, overuse, domestic abuse and social alienation. Students exposed to petty trading at tender age, hawking goods during school hours, students involved in drug misuse and those from conflict ridden homes. From the assumptions of Nnaji (2019) students who are not well taken care of may be in danger of prostitution, drug trafficking, shop lifting, picking pockets, truancy and alcoholism. These groups are considered vulnerable or educationally challenged because, they desire carefulness, rapt attention in class, support, encouragement and mentorship. Vulnerable children may therefore need the direct attention and support of the classroom teacher to be able to follow and understand instructions in different subjects. Children who lack concentration may not find help in a website rather may need formal

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monitoring and supervision which can only come from the teacher. Some students learn best in a group via, discussions, exchange of ideas and sharing observations. Computer instructions may not provide such ideal environment needed for some group of students to learn. Slow learners may need the teacher's help and follow peers more than programmed artificial intelligence (computer instructions). Note that vulnerable students are preoccupied by negative feelings, feeling of rejection, low aspirations and lack motivation towards a better tomorrow.

In the views of Eneogwe (2023), what makes the class teacher exceptional in learning is because he/she is at hand to observe, evaluate and formatively provide solutions to educational challenges. Chikwe (2015) criticized the process where programmed instructions delivered through computers are used to deliver lectures. According to Okorie and Ngeremi (2018), the machine (computers) may not assess the mood of the learner neither would it read the emotions. It cannot provide or assess body language of students or eye contact to direct learners. Computers cannot provide plan B when comprehension from learners are low (Ofojebe-Olibie and Chukwuma, 2015). The computer can only give out what was programmed and nothing more. The teacher is the go-between-parents and learners, if need be, he gives report to parents on the behaviour of their wards in school. He directs and recommends possible processes that may provide the needed reformative strategy and promote learning skills.

In guaranteeing quality educational outcome, the emotions of the child must be evaluated and the teacher is responsible for this. There is a potential disconnect between the computer and the learner emotionally because learning process is an attribute of three domains, behaviour attitude and academic achievement. Internet educational website can only facilitate academic achievement, whereas the teacher molds behaviour. Behaviour is a general concept of one's conduct and dispositions. The quality of one's behaviour and attitude to learning is a product of home and the teacher. The emotion of the child is built by home and school environment, and it is only when it is well fashioned that accessing the internet correctly may occur.

Studies from Nnadozie and Otolehi (2017) spelt out correctly the essence of internet sites in building English vocabulary of students but did not attribute students conduct (behaviour and attitude) as being facilitated by internet sites. Nwaji (2019) reported in her study that negative emotions result in poor academic achievement of students in secondary schools in Imo State. Otolehi (2017) also reported that the affective response of students towards Mathematics subject was affected by their emotions. The outcome of the enumerated studies suggest that emotional disconnect may have negative effect on academic achievement of vulnerable students. Studies have shown that digital learning may only appeal to the cognitive domain conversely, ignoring the affective domain which asserts definite influence on learning. The present study is determined to investigate the vulnerability of educationally at-risk students on computer instructions in English Language among senior secondary school students in Owerri Municipal Council. Owerri Municipal Council presents large body of students who are vulnerable through embarking on petty trading, hawking and loitering while learning are taking place in schools. In the same vein, many secondary schools in Owerri Municipal Council are furnished with computer facilities, hence providing succinct environment needed for the study. Vulnerable studies are weighed against others in computer education subject and their academic achievement determined.

The study also examined the moderating influence of gender on the academic achievement of vulnerable at-risk students. Gender according to Chuka-Okonkwo(2019) is an issue in vulnerability. Girls are more susceptible to childhood sexual abuse which frequently impacts in their relational capacity with the opposite sex. According to Orji(2025) the parenting style of many African homes gives males an-edge in healing from past experiences and abuses. Males are likely to cope from implications of child labour, hawking goods, abuses and insufficient school provisions than females.

Girls often become victims of further abuse while trying to fend for themselves in school (Otolehi, Agulenna and Okwara-kalu. 2021).

Statement of the Problem

Vulnerability among students has been recognized to retard progress made in educational outcomes as attitude, behaviour and academic achievement. Effective school engagement, classroom participation and collaboration

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among students may have been hampered by vulnerability of students in economic and social endeavours. Students' who are overused, forced to house chores, demand educational provision or sent away from homes are disadvantaged in studying through computer programme because of the absence of a facilitator such as teachers. Teachers read the mood of students, interact with them to find out their personal problems, dictate their areas of weakness, provide action plan for immediate solution to problems discovered and provide support to facilitate good learning strategy. The computer is not programmed to monitor the affective domain/response of students. Instructions are programme for a robust achievement in academic tasks. But studies have shown that emotions predict academic achievement if teachers are not readily at hand to monitor and support vulnerable children in senior secondary schools, there is the tendency that effective learning may not take place through computer instructions because of the tendency of being emotionally distracted.

The present study is anchored on the theory of systems propounded by Bertanlaffy in 1956. The theory states that any organization established or government is a whole with its relationship and interactions with other systems as a mechanism of growth and change. The theory is a science of wholeness propounding the components of the whole continually generate, elaborate and restructure a pattern of meaning, a pattern of action and a pattern of interaction. A system is according to the theory regarded as interdependent parts and if a part is malfunctioning. It affects the whole system. System theory according to Von Bertanlaffy has to do with components, elements, parts of sub-groups that come together to interact for the attainment of a set goals. The theory addresses some questions of compatibility of vulnerable students with computer instructions. It also provides ways of ensuring efficiencies and criteria to choose from alternatives.

Purpose of the Study

The main purpose of the study was to determine vulnerability of educationally at risk students to computer instructions. Specifically, the study sought to:

Determine affective response of vulnerable students to computer instructions

Ascertain academic achievement of vulnerable students in English Language delivered through computer instructions.

Ascertain gender difference in academic achievement of vulnerable students in computer instructions.

Research Questions

The following research questions guided the study.

What are the mean affective response score of educationally at risk children taught through computer instructions in English Language?

What are the mean achievement score in English Language of students taught in computer instructions for an academic year?

What is the mean achievement score by gender in English language ?

Hypotheses

The following hypotheses were formulated and tested at 0.05 level of confidence.

The affective response of vulnerable educationally at risk students is significant at 0.05 level of confidence.

The academic achievement mean score of vulnerable educationally at risk students is significant at 0.05 level of confidence.

The academic achievement mean score of vulnerable educationally at risk students is not significant by gender.

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METHOD

The design of the study was ex-post-factor design. This design was adopted because by the definition of ex-post-facto design, the traits of vulnerability were already existing in the participants and the researcher determined how it interact with affective responses and academic achievement in computer instructions among students in secondary schools in Owerri Municipal Council. The study was carried out in a location with geographical coordinates of latitude 5.476310 and longitude 7.025853. The geographical location covers an area of 100sqm kilometers (40sq mi) in area. Population of the area is 1,401,873 as at 2016.

The population of the study was sixteen thousand senior secondary school students. The sample was 400 female and male senior secondary school students selected by adopting purposive simple random technique. Male students were 200 and female students 200 giving a sample of 400 students. The participants have distinguishing traits from others hence specially selected for the study. Students selected were in SS2 strata. The findings of the study will influence the use of computer in teaching vulnerable educationally at risk students in SS2 as they have an additional one year to implement the findings will be of the benefit to students before the final senior secondary school certificate examination.

Instrument adopted in selecting vulnerable educationally at risk children was called Students Vulnerability Rating Scale (SVRS) and English Language Continuous Assessment Test for an academic year (ECAT). The academic year under review was 2023/2024 school year. The instruments were found suitable because 'SVRS' was adopted from Nnadozie and Otolehi (2017) while the ECAT was a PROFOMA record certified by school authorities for the exercise. SVRS has reliability coefficient of 0.72 hence, qualified for the study.

Validation of the instruments were carried out at the Faculty of Education, Imo State University by specialists in English Language and Education Psychology. The final document was produced based on their guidelines and observations. The achievement test in English Language has a ceiling mark of 100% whereas the affective response mean score had a ceiling mark of 80 points. The scores derived from the assessment test for three terms are divided into three to achieve definite score for the study. Instruments were administered on designated locations in the schools selected through the approval of head teachers/principals.

Data collected were analyzed by adopting mean and standard deviation for the research questions. The hypotheses were tested by adopting t-test of statistics which establishes decision by comparing and contrasting the values of t_{cal} (calculated t) and t_{cal} (table value). If t_{cal} is greater than tcal, the null hypothesis is rejected and alternative accepted while the opposite is the case when t_{tab} is greater than t_{cal}. On research questions 2.5 mean scores and above signify high response to computer. Computer instruction while 2.49 and below are low responses or lack of interest.

RESULTS

Research Question 1: What are mean affective response score of vulnerable educational at risk students taught in computer instructions?

Table 1: Mean response scores on item questions bordering affective responses of vulnerable educationally at-risk students.

Always (ALW), Some Times (SMT), Seldom (SL), Not At All (NAL)

S/N	Item Statement	N	ALW	SMT	SL	NAL	EfX	$\bar{X}$
1	Computer lessons are boring	100	60	30	5	5	345	3.45
2	I hardly understand the instructor's intonation	100	70	10	10	10	340	3.40
3	I can't ask questions after lessons	100	100	-	-	-	400	4.0

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4	Examples are made with alien characters	100	70	10	10	10	340	3.4
5	The school depend on public electricity for computer instructions	100	60	20	10	10	330	3.30
6	I prefer our teacher teaching us	100	70	10	10	10	340	3.40
	Pooled Mean		**3.49**					

In table 1 above, vulnerable educationally at-risk students responded poorly to computer instructions stating that computer lessons are boring, with foreign intonation, alien examples, interruption from power outage and poor electricity supply and soliciting that teachers instructions should replace computer powered instructions pooled mean from deductions made from individual mean ascribed to each item question was 3.49. This score suggest complete denial and rejection of computer instructions by vulnerable educationally at-risk students in secondary schools in Owerri Municipal Council.

Research Question 2: What are the academic achievements of vulnerable educationally at-risk students in English Language based on computer instructions?

Table 2: Mean analysis on the academic achievement scores in English Language of students in SS2 in Owerri Municipal Council

Variables	**N**	**English Achievement**						**Remarks**
		1st	**Std. Dev.**	**2nd**	**Std. Dev.**	**3rd**	**Std. Dev.**	
Educational at-risk students	100	39.32	2.01	46.21	2.06	40.71	2.13	42.08

In table 2, educationally at-risk students had an achievement score in English Language for an academic year as 42.08. The score not being up to 50% with a ceiling mark of 100% in each test was seen as a poor performance. In line with the responses received in research question 1, vulnerable educationally at-risk students may have not been motivated by the computer instructions.

Research Question 3: what are the mean achievement scores by gender in English Language based on computer instructions?

Table 3: mean analysis on academic achievement score in English Language of vulnerable ss2 students in Owerri Municipal Council by gender.

English Language Achievement Score by Gender								
Variables	N	1st Term $\bar{X}$	Std. dev.	2nd Term $\bar{X}$	Std. dev.	3rd Term $\bar{X}$	Std.	Remarks
Male	200	35	2.02	46	2.03	40.00	2.01	
Female	200	48	2.06	46	2.01	40.71	2.04	

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In table 3 girls had higher achievement scores in English language in first term and third term while both sex had equal scores in second term. Marginally girls were better in computer mediated instructions in the present study.

Hypothesis 1: The affective response scores of vulnerable educationally at-risk students is not significant at 0.05 level of confidence.

Table 4: t-test analysis on significance of affective response scores of vulnerable educationally at-risk students in secondary schools in Owerri Municipal Council.

Variables	**N**	**$\bar{X}$**	**df**	**LS**	**t_{cal}**	**t_{crit}**	**Remark**
Vulnerable educationally at-risk	400	3.49	398	0.05	9.84	1.960	Reject Ho_1

In table 4, mean affective response score was 3.49, degree of freedom, 98, level of significance 0.05, while tcal (calculated 5) was 9.84tcrit (table value) was 1.960. When tcal is greater than tcrit the hypothesis is rejected and alternative accepted hence. the affective response of vulnerable educationally at risk students is significant at confidence level.

Hypothesis 2: The academic achievement mean score of vulnerable educationally at-risk students is not significant at 0.05 confidence level.

Table 5: t-test analysis on significance of academic achievement of vulnerable educationally at-risk students in secondary schools in Owerri Municipal Council

Variables	**N**	**$\bar{X}$**	**df**	**LS**	**t_{cal}**	**t_{crit}**	**Remark**
Academic achievement 2022/2023	400	42.08	398	0.05	1.801	1.960	Accept Ho_2

In table 5, the mean achievement score of students considered educationally at-risk students was 42.08 out of a ceiling mark of 100%, the degree of freedom was 98, level of significance was 42.08 whereas the calculated 't' of 1.80 was less than tcrit of 1.960. This resulted in accepting the null hypothesis that the academic achievement of vulnerable educationally at-risk students is not significant at 0.05 level of confidence. Substantially achievement of vulnerable students in English Language does not deserve commendation and may have been because of computer/internet instructions adopted in teaching English Language.

Hypothesis 3: The academic achievement mean score of vulnerable educationally at-risk students by gender is not significant at 0.05 confidence level.

Table 6: t-test analysis on significance of academic achievement of vulnerable educationally at-risk students in secondary schools in Owerri Municipal Council count by gender.

ACHIEVEMENT BY GENDER							
Variables	**N**	**X**	**df**	**LS**	**t_{cal}**	**t_{crit}**	**Remark**
Male	200	38.6					
			198	0.05	1.620	1.960	Accept
Female	200	44.68					

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In Table 6: the mean achievement scores of male and female students in English Language was not significant at 0.05 level of significant. This was because t_{cal} (calculated't') was less that t_{crit} (table t). this means accepting the hypothesis.

DISCUSSION OF FINDINGS

The study sought to determine vulnerability of educationally at-risk secondary school students in internet instructions in English Language. The result of the study was that educationally at risk students were demotivated by the Instructional Modus Oparendi (Internet Instructions) hence poor academic achievement records. The result means that internet instructional mode did not meet the need of educationally at-risk students hence the poor academic result floated in 2022/2024 academic year. The reason for this poor result may be because of the absence of moderating personality such as the teacher who aptly diagnoses the mood, temperament, emotions and environmental suitability of designated learning conditions. Most vulnerable students have learning problems possibly taking root from home challenges, physical abuse, challenges of participating in petty trading, over use and consequent parental lapses. Many exhibit other behavioral problems such as truancy, absenteeism, attention issues, lack of concentration, loitering when lessons are on and poor teacher student relation class competences.

The result of this study is aligned to Nnadozie and Otolehi (2017) findings that vulnerable students may have problems of attention and concentration in classroom instruction consequent to poor academic achievement. The result of the study aligns to Enegwo (2024) where the researcher opined that students who were confirmed to be vulnerable had problems with computer instructions without the presence of classroom teacher who may have the advantage of directing or providing the emotional needs of vulnerable students. The affective response were considered in this study to be inadequate for productive educational outcome although it was significant. In like manner, their academic achievement scores were not significant at 0.05 level of confidence.

The result revealed that female students were slightly better their female counterparts in assessment test in English language. This result means that girls although vulnerable either gave more attention while the computer instruction was used in delivering lecture. Their attention translated in a better achievement score. The reason for this marginal improvement may have been because female students according to studies are good in language courses because of their interest. The result of this study aligns to chuka-okonkwo (2019), whose study revealed that vulnerable and educationally at risk girl child show more interest in learning when given the opportunity. A contrasting result was revealed in the findings of orji (2025), whose study revealed that male vulnerable students performed better than girls in class assessment test. The difference the findings of both studies could be as a result of the class of students used in both studies. While chukka – okonkwo (2019) used primary school pupils, Orji (2019) used senior secondary school students. The understanding of different classes of responds give rise to the difference in findings.

Educational Implications from the Finding

The researcher from the findings of the study deduced that educational outcomes from computer instructions may remain unfavourable to vulnerable and educationally at-risk students except teachers professionally trained in the subject of study are allowed to present the instructions, answer questions that may have not been available in the programme and also observe the body language of students for support.

The present study did not take stock or note in the differences in the availability of computer facilities at the schools selected for the present study. In sufficient computers in the selected schools may constitute a secondary learning challenge were many vulnerable Students may not have been opportune to participate in the instructions abinitio. This may have compounded the inattention and lack of concentration problem for the whole academic year 2023/2024.

Vulnerability may have gender implication but the researcher did not in this study seek to determine the moderating effect of gender in the internet instruction challenges on educationally at-risk students.

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CONCLUSION

Computer instruction has expounded the frontier of education to locations hitherto would have been alienated. In considering the significance of this tool in the 21st century education, maintaining societal problems which students are parts may have subtle adverse effect on some group of students tagged educationally at-risk. The finding of this study significantly proved that classrooms conventional method is apt for educationally at-risk students.

RECOMMENDATIONS

Education at risk students should be taught by conventional method to enable the teacher moderate the learning process.

Stakeholders in education should employ professional teachers to handle students who are challenged and vulnerable.

The government should promote inclusive education by including special education classes in mainstream education in Imo State. This will take care of the problems of vulnerable and educational at risk students.

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