TECHNOLOGY-BASED INSTRUCTION AND PUPILS' OFF-TASKS BEHAVIOR MANAGEMENT IN PRIMARY SCHOOLS IN RIVERS STATE

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Abstract
The study investigated the relationship between technology-based instruction and pupils' off-tasks behavior management in primary schools in Rivers State. Three research questions were answered while three hypotheses were tested at 0.05 level of significance. The study was a correlation design with population of 4,812 teachers in 233 public primary schools in Rivers State. The sample for the study was 481 teachers drawn through simple random sampling technique. Technology-Based Instruction Scale (TBIS) and Off-Tasks Behaviour Management Scale (OTBMS) were used for data collection. Three validates face validated the instruments. Internal consistency reliability coefficients of 0.89 and 0.77 were obtained for TBIS and OTBMS through Cronbach alpha method. Linear and t-test associated with regression were used to answer the research questions and t-test associated with linear regression was used to test the null hypotheses at 0.05 level of significance. The study revealed that technology-based instruction can significantly predict the management of off-tasks behaviours. Specifically, the use of interactive whiteboard, video conferencing and virtual field trip can independently account for the management of pupils' off-task behavior. This implied that proper application of technology-based instruction can lead to pupils' off-tasks behavior management. It was recommended among others that Rivers State Government, UNESCO, UNICEF, PTA, Old Students Association wing and the school organization should assist in the establishment of technology-based instruction through financial supports, procurement of facilities and teachers' development as well as capacity building.

Keywords: Technology-Based Instruction (Interactive Whiteboard, Video Conferencing and Virtual Field Trip), Management and Off-tasks Behaviour

Introduction

Off-task behaviour is that behaviour which distracts one or creates an environment that prevents others from learning as well. There is severity and frequent manifestations of off-tasks behaviours among most students in Rivers State. There dimensions of off-task behaviour include tardiness, incomplete homework, ignoring class discussion, playing games during lessons, drawing objectives, watching and commenting on distracting objects in during instructional periods (Morgan, 2010), others are disregarding classroom procedures, avoiding an exercise when it is difficult and avoiding additional work (Uzochukwu, 2019). Students in Rivers state have shown signs and symptoms of not being committed in the school activities. This is properly articulated by the Morgan (2010) and Uzochukwu (2019) that a good proportion of students in Rivers State practice truancy and avoid academic activities to a reasonable extent. This is irrespective of the presence of their teachers.

It is disheartening that most of the teachers do not possess the requisite skills to get students on the task during instructional delivery. It was reported that lack of classroom management skills and competences have high positive relationship with disruptive and distractive behavioural disposition among the students (Rosenberg, 2014). Empirically, it has been shown that during the classroom activities, some students are very busy doing unrelated, unconnected and very distractive task in the classroom (Godwin & Fisher, 2011). Specifically, Rosenberg (2014) submitted that off-task behaviour occurs when students' completely remove themselves from the learning environment and engage in an unrelated activity. In a related development, Godwin and Fisher (2011) reported that classroom environments with relatively large amounts of visual displays (e.g. charts, posters, manipulatives) elicited more off-task behaviour in children compared to visual environments that were more streamlined. In the same vein, Rosenberg (2014) states that students of this contemporary can easily distract each other through conversations, note passing, posters, charts, and even playing games during lessons. It is worthy to note that some of the students sleep, read unconnected material, or perform some other unrelated activity such as working on homework for another class, drawing a picture during classroom activities (Rosenberg, 2014). That is the reason Cai (2014) opined that off-task behaviours can be very distractive to effective teaching and learning and an effective teacher must discover the source of distraction before any effective solution can be devised to address them. From the definition given by Cai, there is the assertion that keeping students focused on learning can be a challenging task. It requires the expertise of a teacher to be able to draw the

attention of the students towards a particular classroom activity. Teachers must strive to make the class activities intriguing, fascinating and attractive to the learners through pragmatic modern methods of instructional delivery. One of the modern methods of instructional delivery is the technology-based instructional delivery strategy (Robert, n.d).

Technology based instruction is the use of technological gadgets in the discharge of teaching responsibility. Technology based instruction implies the use of digital compliant tools in the teaching activities. Technology based instruction is an approach that is deemed suitable in the transformation of educational sector (US Department of Education, n.d). Technology based education has the potentials to transform teaching and learning. Technology education fosters improvements in the teaching professions, skills, knowledge, competence, content and resources (Hunbel, 2014). Technology-based education is improves teachers' classroom management and control (Berg, 2012). Technology education is suggested to be an effective teaching aid which can enhance educational productivity as well as to increase the rate of learning; reduces costs associated with instructional materials or program delivery; and better utilization of instructional time (US Department of Education, n.d). Technology based instruction can be carried out through interactive whiteboard, projectors, video conferencing, virtual field trip and computer networking (Conwell, 2005).

Interactive whiteboard is an electronic hardware device. It has the capacity to transmit series of information sent into it to different computers at a very fast pace. This platform enables people to share messages, present information, and engage in collaborative brainstorming and idea development as well as to connect to the Internet and instantly digitize tasks and operations (WhatIs.com, 2020). The interactive whiteboard functions withthe connections of computer, a data projector and an electronic screen (Wood & Ashfield, 2008). Interactive whiteboard is found to be usable in enhancing students' concentration at the tertiary level (Ekhalm, 2002; Glover & Miller, 2002). Teachers who are technologically inclined can make use of interactive whiteboard in keeping the class very competitive if properly applied (Morgan, 2010). Interactive whiteboards can create room for the students to interact with the learning material instead of engaging in frivolities. Interactive whiteboards integrate various learning styles into one experience (Platinum Copier Solutions, 2017). Interactive whiteboard enhances students' attention, comprehension, performance, retention and increase in learning (Platinum Copier Solutions, 2017). To this end, students can learn by what they see, hear as well as having physical interaction with the teaching resources. Interactive whiteboard usage makes the teachers to acquire new, innovative ways to teach

the same subject material. Interactive whiteboard has been reported to help students learn better and remember more (Platinum Copier Solutions, 2017). Interactive whiteboard can function exceptionally well when there is the support of video.

Video conferencing has been proposed to be very important and suitable for teaching enhancement for maximum interaction (Promethean, 2016). The use of classroom video conferencing can be very fascinating (Horton, 2020). Teachers use video conference to aid their instruction especially when the students are dispersed (Greenberg, 2006). Video conferencing meets the need of students irrespective of their locations (Horton, 2020).Video

Apart from video conferencing, Virtual field trip can be effective in classroom enhancement. Virtual field trip is field trip outside the conventional but internet supported. Students can be shown different products posted online without the usual physical visitations of the place (Robert, n.d). The virtual field trip makes the students to be full involved in class instruction as they do not want to mix any piece of information on the display platform (Morgan, 2010). Teachers with proper online skills can proper get the students committed in the classroom activities through adequacy of virtual field trip (Fried, 2008). Through virtual field trip websites students can be properly educated on how to surf for information for enhanced academic activities (Fried, 2008). Virtual field trip can increase students' interest as well as to reduce the time of instruction (Zhu, Kaplan, Dershimer & Bergom, 2012).

Globally, it has been reported that classroom-based instruction is very effective in academic activities in universities (Adamu, 2018). In the Nigerian context, few studies have shown the importance of technology -based in the management of off-tasks behaviour (Chukwuma, 2017; Uwaoma, 2018). It has not been properly documented the prediction of technology-based instruction on off-tasks management in public schools in Rivers. This gap necessitated this study that aimed at investigating the predictive powers of technology-based instruction on off-tasks management in public schools in Rivers.

Research questions

The following research questions raised were answered.

1. What is the predictive power of interactive whiteboard on off-tasks management?
2. What is the predictive power of video conferencing on off-tasks management?
3. What is the predictive power of virtual field trip on off-tasks management?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

1. Interactive whiteboard does not significantly predict off-tasks management.
2. Video conferencing does not significantly predict off-tasks management.
3. Virtual field trip does not significantly predict off-tasks management.

Methodology

The study was a correlation design with population of 4,812 teachers in 233 public primary schools in Rivers State. The sample for the study was 481 teachers drawn through simple random sampling technique representing 10% of the population of teachers. The sample size was arrived at through balloting. Names of the respondents were folded on a piece of paper. At random, any paper picked had the name there as one of the respondents. Two self-report measures titled Technology-Based Instruction Scale (TBIS) and Off-Tasks Behaviour Management Scale (OTBMS) were used for data collection. The measures are designed in line with Likert response options of Very High Extent (4), High Extent (3), Low Extent (2) and Very Low Extent (1). The TBIS has three clusters of Interactive Whiteboard with 7-items, Video Conferencing-8items and Virtual Field Trip-6items respectively. The TBIS has a total of 21-items to measure technology-based instruction. The minimum and maximum response scores are 21(1*21-items) and 84(4*21items). The second instrument OTBMS has 15 items to measure off-tasks behavior management indices. OTBMS was structured alike the TBIS in response options. The minimum and maximum response options are 15(1*15items) and 60(4*15items respectively. The decision rule on the extent of prediction are within the ranges of Very Low Extent (0-25), Low Extent (25.1-50), High Extent (50.1-75) Very High Extent (75.1-100).

The measures were validated by three validators, one in Measurement and Evaluation and two in Educational Foundations all from University of Nigeria, Nsukka. The internal consistency reliability coefficients of 0.89 and 0.77 were obtained for TBIS and OTBMS respectively through Cronbach alpha method. Linear regression was used to answer the research questions while t-test associated with linear regression was used to test the hypotheses.

Results

Research question 1: What is the predictive power of interactive whiteboard on off-tasks management?

Table 1: Lear regression analysis of the predictive power of whiteboard on off-tasks management

Model Summary				
Model	R	R Square	Adjusted R Square	Decision
1	.892[a]	.795	.794	High Extent

Decision: Very Low Extent (0-25), Low Extent (25.1-50), High Extent (50.1-75) Very High Extent (75.1-100)

The coefficient of determination R^2 (.795) showed the extent of prediction. This revealed that interactive whiteboard predicts off-tasks management to a high extent. This implied that interactive whiteboard accounted for 79.5% off-tasks management while the remaining 20.5% were accounted by other variables not used in this study.

Research question 2: What is the predictive power of video conferencing on off-tasks management?

Table 2: Linear regression the predictive power of video conferencing on off-tasks management

Model Summary				
Model	R	R Square	Adjusted R Square	Decision
1	.812[a]	.659	.658	High extent

Decision: Very Low Extent (0-25), Low Extent (25.1-50), High Extent (50.1-75) Very High Extent (75.1-100)

The coefficient of determination R^2 (.659) showed the extent of prediction. This revealed that Video conferencing classroom technology can predict management of off-tasks behaviour to a high extent. This implied that Video conferencing classroom technology can account for 65.9% off-tasks behavior management while the remaining 34.1% were accounted by other variables not used in this study.

Research question 3: What is the predictive power of virtual field trip on off-tasks management?

Table 3: Linear regression the predictive power of virtual field trip on off-tasks management

Model Summary				
Model	R	R Square	Adjusted R Square	Decision
1	.883[a]	.780	.779	High extent

Decision: Very Low Extent (0-25), Low Extent (25.1-50), High Extent (50.1-75) Very High Extent (75.1-100)

The coefficient of determination R^2 (.780) showed the extent of prediction. This revealed that Virtual field trip can predict off-tasks management to a high extent. This implied that Virtual field trip accounted for 78.0% off-tasks management while the remaining 22.0% were accounted by other variables not used in this study.

Hypothesis 1: Interactive whiteboard does not significantly predict pupils' off-tasks management

Table 4: t-test analysis of the predictive power of interactive whiteboard on off-task behavior management

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.549	1.044		4.357	.000
	Whiteboard	.882	.030	.892	29.693	.000

Table 4 revealed that the t-test associated with linear regression is 29.693 with probability value of 0.00. Since the probability value of .00 is less than the alpha level of .05, the null hypothesis is rejected. Therefore, interactive whiteboard can significantly predict off-tasks behavior management in public primary schools in Rivers State.

Hypothesis 2: Video conferencing does not significantly predict off-tasks management.

Table 5: t-test analysis of the prediction of video conferencing technology on off-tasks behavior management

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.541	1.382		4.733	.000
	Video conferencing technology	.830	.040	.812	20.965	.000

Table 5 revealed that the t-test associated with linear regression is 20.965 with probability value 0.00. Since the probability value of .00 is less than the alpha level of .05, the null hypothesis is rejected. Therefore, Video conferencing classroom technology can significantly predict off-tasks behavior management in public primary schools in Rivers State.

Hypothesis 3: Virtual field trip does not significantly predict off-tasks management.

Table 6: t-test analysis of the prediction of virtual field trip on off-tasks behavior management

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.067	1.040		5.835	.000
	Virtual field trip	.837	.029	.883	28.364	.000

Table 6 revealed that the t-test associated with linear regression is 28.364 with probability value of 0.00. Since the probability value of .00 is less than the alpha level of .05, the null hypothesis is rejected. Therefore, Virtual field trip can significantly predict off-tasks behavior management in public primary schools in Rivers State.

Discussion of Findings

Interactive Whiteboard and Off-tasks Behaviour Management

The study revealed that interactive whiteboard can significantly predict the management of off-tasks behaviours to a high extent among primary school pupils in public primary schools in Rivers State. This result is not suppressing based on earlier report that technology based instruction implies the use of digital compliant tools in the teaching activities because it is suitable in the transformation of educational sector (Conwell, 2005). Technology education mostly the use of interactive whiteboard is an effective instrument that helps teachers have great transformation in their teaching professional, skills, competence, content and resources (US Department of Education, n.d). Interactive whiteboard was significant in the management of off-tasks behaviours it exposes the teachers to open educational resources and other technologies which can make interaction interesting (Hunbbel, 2014).

Supporting the finding of this study was the report that interactive whiteboard has the capacity of engaging the learners since it enables the teachers to share messages, present information, and engage in collaborative brainstorming and idea development as well as to connect to the Internet and instantly digitize tasks and operations (WhatIs.com, 2020). Corroboratively, previous study revealed that interactive whiteboard is found to be usable in enhancing students' concentration (Ekhalm, 2002; Glover & Miller, 2002). Still in tandem with the finding of this was the submission that teachers who are technologically inclined can make use of interactive whiteboard in keeping the class very competitive (Morgan, 2010). It is undisputable to note that interactive whiteboards creates room for the students to interact with the learning material instead of engaging in frivolities thereby increase their level of on-task activities. With the promotion of various learning styles into one experience, interactive whiteboard makes the students to want to learn more (Platinum Copier Solutions, 2017). Concurring to the importance and workability of the interactive whiteboard in management of classroom behavioural problem is that it increases students' attention, comprehension, performance, retention and increase in learning (Platinum Copier Solutions, 2017). To this end, students can learn by what they see, hear as well as having physical interaction with the teaching resources.

Video Conferencing and Off-tasks Behaviour Management

The study showed that video conference can significantly predict the management of off-tasks behaviours to a high extent among primary school pupils in public primary schools in Rivers State. The importance of video conference in the management of unsupportive classroom behavioural problems has been adjudged. In conjunction with the finding of this study was the empirical report that Video conferencing is very important and suitable for teaching enhancement for maximum interaction and concentration among the students (Promethean, 2016). This is based on the fact that the use of classroom video conferencing in teaching and learning is very fascinating (Horton, 2020). Classroom management and control can be achieved in making the students to be learning ready and active irrespective of their locale (Greenberg, 2006). Interesting on the attributive importance of Video conferencing is that it meets the need of students irrespective of their attention challenges (Horton, 2020).

Virtual Field Trip and Off-tasks Behaviour Management

The study showed that virtual field trip can significantly predict the management of off-tasks behaviours to a high extent among primary school

pupils in public primary schools in Rivers State. The role physical field trip in the learning achievement is commendable but is more when it is done virtually (Horton, 2020) because students can be shown different products posted online without the usual physical visitations of the place (Robert, n.d). Buttressing this finding is the report that virtual field trip makes the students to be fully involved in class instruction as they do not want to miss any piece of information on the display platform (Morgan, 2010). Teachers with proper online skills uses virtual field trip to get students properly committed in the classroom activities (Fried, 2008), as well as to be very inquisitive on how to surf for information for enhanced academic activities (Fried, 2008). Above all, Virtual field trip can increase students' interest as well as to reduce the time of instruction (Zhu, Kaplan, Dershimer & Bergom, 2012).

Conclusion

Based on the findings of this study, it was concluded that technology-based instructional can significantly predict the management of off-tasks behaviours pupils in public primary schools in Rivers State. Specifically, it was concluded that technology-based instructional with emphasis on the use of interactive whiteboard, video conferencing and virtual field trip can independently significantly predict the management of off-task behaviours in primary schools in Rivers State.

Recommendations

Based on the findings of this study, it was recommended that:

1. The Rivers State Government and the host communities should ensure that classrooms are equipped with functional interactive whiteboards. More so, the teachers should also be sent to capacity development programmes by the head teachers in order to ensure effective use of interactive whiteboard.
2. The Rivers State Government in conjunction with United Nations Educational, Scientific and Cultural Organization (UNESCO) and United Nations Children's Fund (UNICEF) should make available computers, projectors, internet connectivity, power supply, printers and flash drive that can encourage video conferencing.
3. Old students' association in conjunction with Parents Teachers' Association (PTA) should be supportive through finance and platforms/sites that can provide the needed information and learning through the virtual field trip platform.

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