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Observational Studies of Learners' Impulse on Literacy and the Covid-19 Pandemic in the Changing World

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Abstract

This study investigated observational studies of learners' impulses on the COVID-19 Pandemic and literacy in the changing world. The study adopted an observational research procedure of controlled observation methodology. Step one involves the researchers' appearance in the classroom, seated with the students as teaching was going on in the classroom while the teachers were teaching and the researchers were observing and taking rigorous notes. The researchers were coding the data collected after the observation. The second step involved researchers' observations on controlling the participants, location, study time, and other circumstances surrounding the research. The researchers ask questions, create codes and write a detailed report which classifies learners' impulses into different categories. Participants were 240 students and four teachers teaching Basic Science and Mathematics in Junior Secondary class two (JSSII) which were randomly selected across the four Local Government areas in Ekiti States, Nigeria. The reliability was determined using the results of observation obtained by the co-researchers and this yielded a correlation coefficient of 0.75 at a 0,05 level of significance. The researchers analyzed using descriptive Analysis of frequent count and percentage of the observational learning impulses of students. Findings revealed that students have a positive learning impulse towards learning Basic Science and Mathematics during COVID-19 Pandemic and that the majority of the teachers treated the knowledge contents effectively despite the COVID-19 outbreak. The study also showed that systems adopted by the teachers contributed to the literacy level of students in a positive way. It was recommended that the learner's impulse be maintained with good mastery of the subject matter regardless of environmental conditions. Teachers should always be ready to impact knowledge with effective teaching in the classroom. The planning strategy adopted by the teacher should determine the success acquired by students in the teaching and learning processes. It was also recommended that students should endeavour to work examples and perform better in the task assigned to them independently. Teachers should exhibit positive learning impulses towards teaching that can influence students learning impulses.

Keywords: Observational studies, Learners Impulse, Covid-19, Literacy, Changing World

Introduction

Schools across the nation on earth are shutting down in an attempt to slow the spread of the Covid-19 pandemic. The World Health Organization decided to curb the spread of the novel coronavirus as a pandemic on March 11, which prompted all the universities in the nations to close down their activities to reduce the spread of the virus including Nigeria. This effort was made to prevent Covid -19 from entering the University populations and communities. In view of this, all Universities' programmes such as physical interaction between lecturers and students, funded international travel for conferences, international travel study-abroad programs, and University administration and student activities among others were put on hold. The pandemic affected almost all the countries in the world and killed over 35,000 people. This has taught many citizens lessons which have made students, teachers, and parents look for a better way that can provide a foreseeable bright future. The chaos of current school closures necessitated the development of alternative approaches to the teaching processes. For example, the quick turn to platforms like Zoom, virtual and teaching on television was introduced. But this appears disrupting curricula in many ways particularly the professors who are less equipped to navigate the internet. Many schools implemented distance learning which connects students and teachers through an online platform in many other countries. Also, national and local governments partnered with broadcasting service providers to deliver educational content via television and radio during dedicated hours. Under these unexpected circumstances, teachers and parents have had to quickly adapt to teaching in this new reality to ensure that students engage in learning.

Prior to the COVID-19 crisis, all learning processes were strongly dependent on students' physical presence in the classroom. But, the sudden arrangement in the management of a classroom which is mediated by a screen and microphone seems strange to some students and lecturers and this created a fuss of commotion for individual students which later placed them on hold (Hallenbeck, 1995). Although, University internet services are supposed to focus efforts on providing professors and students with how-to webinars on using online platforms due to the various benefits of a virtual classroom. Notwithstanding, Universities in most of the developed countries such as New York were able to continue participating in classroom discussions online unlike Nigeria Universities which are unable to have access to online teaching due to some problems of network and inability to connect due to electricity saga. No wonder, students performed woefully in the recent West African Examination Council of which they recorded 25.7 % in English, Mathematics, Basic Science and other subjects. However, not all subjects are easy to teach online. For example, Science practical, biochemistry and introductory economics can be taught virtually more than any other subject such as music or dance. The planning strategy adopted by the teacher was to determine the success or failure of

teaching and learning (Seweje, 2004).

Bandura's1986 explained social learning theory as a continuous interaction between cognitive, behavioural, and environmental influences. This implies that for effective teaching and learning to take place, several conditions need to be fulfilled such as students pay attention to relevant elements in the learning environment; need to store and transform information in memory, they also need to translate mental conceptions into actions and be motivated to function well. Shunk and Zimmerman (1997) elaborated Bandura's theory into a social cognitive model of self-regulation in reading and writing. This model influences the learning of a new task to occur in four phases; observation, emulation, self-control, and self-regulation. Learning impulse is the first step in the learning process as it is the act of observing the behaviours of others. It is a form of social learning that takes various forms in various processes (Wikipedia).

In Nigeria, it seems the unexpected appearance of the COVID-19 pandemic has interrupted learners' observation of major important things to learn creatively (Gwenen, Tanja, Gert and Huubvan (2013). Observational impulse is therefore needed to involve an expert model externalising internal processes for learners to observe. This encourages the learner to internalize the skill and finally use the teacher's strategy independently and in various contexts. Observation provides strategic knowledge to the learner and also changes students' conception of all the modelled skills involved in learning. For example, in working out a certain problem in calculus, students may not understand the expert way of solving this problem, but observation seems to enhance awareness. Observation is also an effective way of writing synthesised texts (Braaksma et al., 2002; Raedts et al., 2007). Rummel and Spada (2005) supported that the effectiveness of observation for learning helps in collaborating the computer-mediated settings. Schworm and Renkl (2007) also found beneficial effects in the domain of argumentation through observation. Observation is essential for cooperative revision tasks. In view of this, Van Steendam et al (2010) added that observational learning is effective for relatively structured tasks, such as mathematics and science. In line with this, studies of (Rourke & Sweller, 2009; Van Gog, Paas, & VanMerrienboer, 2004; 2006; 2008) found that students who studied through observation to work examples of a task performed better than students who practised this task independently. In support of this, (Finke, Ward, & Smith, 1992) said observing models may lead to the imitation of products. However, observation of cognitive models is directed at developing a clear idea of how a task can be performed. Therefore, the learning impulse of students is supposed to help the observation of any learner during the COVID-19 Pandemic provided that such student thinks aloud while engaging in creative work that is supposed to affect future activities observed.

Literacy is a set of skills, applied practice and social situations as well as a learning process and text in the changing world. Literacy gives room for observation and approaches to practice and policy. Literacy is perceived as an instrument of power which

provides local knowledge to people especially when the perspective of people about a certain situation is not conducive to matching up with the changing world. Literacy helps to raise an important caution regarding the ultimate vision and direction of the literacy project (Fransman 2005). It is an important variable in compliance with the rules guiding the prevention of COVID-19, especially in the classroom. The attitude developed to control this deadly virus in the changing world is associated with the level of knowledge and skills possessed to combat the virus. Someone has to maintain a higher level of education on the information received to achieve positive while following COVID-19 preventive practices (Zhong, Luo, Zhang, & Liu, 2020). A positive attitude is developed to either influence or suppress any situation if adequate knowledge is acquired. Strict observation contributes greatly to the probability of being vulnerable to the infection of any disease. The literacy skill which is the cognitive approach acquired by teachers and students helps them to read and understand COVID-19 and its control measure. Recently, the perspectives which emphasize meaning have given way to scientific attention to the control of COVID-19. Literacy serves as a mediator factor through which this virus can no longer spread amongst students. The knowledge possessed about the infection process and its prevention seems to help both the teachers and students in the classroom to follow all the necessary guidelines lay down as quarantine measures (Adrian, Brenda, & Rita 2020). COVID-19 Pandemic has highlighted that poor health literacy among a population is an underestimated public health problem globally.

The observational studies of learners' impulses became a concern to everyone. Students experience difficulties with issues of learning and motivation in the classroom during the COVID-19 pandemic. In light of a substantive experience with student motivation, this disease came as a surprise to both teachers and learners. Many students have been antithetical to key motivational principles identified in this current issue for instance, classroom motivation such as task involved rather than ability-involved classroom goal orientations, intrinsic, rather than extrinsic rewards, complex and challenging work rather than fact-focused, low-level thinking, interactions and tasks that enhance perceived self –competence, opportunities that promote perceived self-determination rather than perceived control, interactive, personal, and informal rather than individualistic, competitive, and formal learning settings (Oldfather & McLaughlin, 2016). During COVID-19 Pandemic, it was difficult to find solutions to structural students' motivational problems such as teaming and scheduling practices and interdisciplinary approaches in the changing world. Though, there has been progress in the use of online teaching motivation through television for final-year students. This was noted to impede the movement of creating effective classroom practices. In spite of teaching arranged to motivate students online, inadequate attention has been given to subjective experiences of learning. Research showed that students' voices and perceived empowerment in the classroom may contribute to their motivation and learning. The

learner's understanding is supposed to be facilitated through scaffolding by interactions with both teachers and classmates (Wood, Brunner, & Ross in Oldfather and McLaughlin, 2016). This appears to be absent during the COVID-19 pandemic amongst students. The engagement of students in learning is supposed to propel and focus on thoughts and feeling that emerge from the learners' processes of constructing meaning; which is supposed to be characterized by intensive involvement, curiosity, and a search for understanding, as the learners' experience learning as a deeply personal and continuing agenda in the classroom (Oldfather, 1992). The continuing impulse to learn brings about enhanced competence. But, during COVID-19 Pandemic, it seems that students' competence goals are not being focused on the actual learning associated with the quality of intrinsic motivation. It also appears that students learn mostly from well-known learning styles concept which categorizes learners into visual versus verbal learners. Therefore, it was assumed that interaction between learners and teachers in the classroom benefits more than teaching online. However, learning seems to be much better when combining different ways of taking in information (An & Carr, 2017).

Purpose of the study

The purpose of this study is to carry out impulse "observational studies of learners on COVID-19 pandemic and literacy in the changing world". It is also to find out if students' performance frequency still remains as it was before the pandemic. It is to determine the impulse of students towards learning in the changing world.

Observational Questions

What are the observational learning impulses of students in Basic Science and Mathematics learning during the COVID-19 Pandemic?

What are the observational learning impulses of teachers in teaching Basic Science and Mathematics during the COVID-19 pandemic?

To what extent does the COVID-19 pandemic influence the Learning impulse of students in Basic Science and Mathematics?

What are the observational learning impulses of students towards learning Mathematics?

What are the observational learning impulses of students towards learning Basic Science?

Will the effects of the COVID-19 pandemic influence students' learning impulses in Mathematics and Basic Science in the changing world?

Will there be any positive effect of COVID-19 on learners' impulses in Mathematics and Basic Science in the changing world?

Research Hypotheses

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

There is no significant influence of COVID-19 on the learning observational impulse of students in Basic Science and Mathematics in the classroom in the changing world.

There is no significant influence of the COVID-19 pandemic on the observational learning impulses of students towards learning Basic Science.

There is no significant influence of the COVID-19 pandemic on the observational learning impulses of students towards learning Mathematics.

There is no significant positive effect of the COVID-19 Pandemic on Basic Science students' learning impulses in the changing world.

There is no significant positive effect of the COVID-19 Pandemic on Mathematics students' learning impulses in the changing world.

There is no significant negative effect of the COVID-19 pandemic on Mathematics students' learning impulses in the changing world.

There is no significant negative effect of the COVID-19 pandemic on Basic Science students' learning impulses in the changing world.

There is no significant influence of COVID-19 on Mathematics students' observational learning impulse in the changing world.

There is no significant influence of students' literacy and observational learning impulse on the COVID-19 pandemic in the changing world.

Research Method

Research Design

The study adopted an observational research procedure of naturalistic and controlled observation methodologies. These designs are suitable because they will help the researcher to gather relevant information needed using a qualitative measure of survey.

Sample and Sampling Techniques

The sample for this study consisted of 240 Basic Science and Mathematics students and eight teachers teaching Basic Science and Mathematics in Junior Secondary Schools which were randomly selected across the four Local Government areas in Ekiti State, Nigeria.

The first stage was the selection of four local government areas in Ekiti State out of sixteen local government areas in the state, using a simple random sampling technique.

The second stage involved the random selection of one school in each of the local government areas (making a total of four schools). The third stage is the random selection of sixty students (Basic Science and Mathematics) in each of the schools (making a total of 240 students). The fourth stage was the selection of two teachers (a Basic Science teacher and a Mathematics teacher) in each of the schools (making a total of eight teachers). In all, the total samples of 240 Basic Science and Mathematics students and eight teachers (four Basic Science teachers and four mathematics teachers) were selected for the study.

A model adopted (Vicarious processes table which includes target subject/ treatment focus observation/results/ conclusion) was used to elicit information from the respondents which include the use of observational research note of naturalistic and controlled observational notes. These two notes were coded later. This was used to observe and collect information from the teacher and students towards the teaching and learning of Basic Science and Mathematics.

The researchers met with the heads of science departments of each school who linked the researchers with the Basic Science, Mathematics teachers and students respectively for the administration of the instruments. The instrument was jointly administered by the researcher and research assistants to observe teachers and students. Teachers and students were required to fill the Observation on Basic Science teachers (OBST), Students observation learning impulse (SOLI), Observation on Mathematics teachers (OMT), and teachers and students Bio-data. The researcher and research assistant seated with the students as teaching is done by the teachers while the researcher and assistant observe and take rigorous notes and later code the data collected. The researcher also controls the participants, location, time of the study, and circumstances surrounding the research. The researcher asks questions, creates codes and writes a detailed report which classifies behaviour into different categories of the vicarious table.

Data Analysis

The data collected will be analyzed using inferential statistics of Multiple Regression.

Results

Descriptive Analysis

Observational Question 1: What are the observational learning impulses of students in Basic Science and Mathematics on learning during the COVID-19 Pandemic?

Table 1: Descriptive Analysis of the observational learning impulses of students in Basic Science and Mathematics on learning during the COVID-19 Pandemic

S/N	Items	Agree		Disagree	
		Freq.	%	Freq.	%
1	I am interested in learning Basic Science/Mathematics	180	75.00	60	25.00
2	I love to be attentive while the teacher is teaching us	204	85.00	36	15.00
3	I feel that the subject is of no use to me	113	40.08	127	52.92
4	I feel more competent in the subject	140	58.33	100	41.67
5	I dislike Basic Science/Mathematics as a subject	106	44.17	134	55.83
6	I am always desiring to learn more about the subject	195	81.25	45	18.75
7	I always avoid the class when a difficult topic is taught	39	16.25	201	83.75
8	I feel bored anytime the Basic Science/Mathematics Teacher is teaching us	110	45.83	130	54.17
9	I am impressed with the good mastery of the subject by the Basic Science/Mathematics teacher	125	52.08	115	47.92
10	The method used by my Basic Science/Mathematics teacher makes the subject impressive to me	203	84.58	37	15.42

Table 1 shows the frequency counts and percentages of the observational learning impulses of students in Basic Science and Mathematics on learning during the COVID-19 Pandemic. 204 (85.00%) of the students said that they love to be attentive while the teacher is teaching them while 203 (84.58%) of them said that the method used by their Basic Science/Mathematics teacher makes the subject impressive for them. I am

always desiring to learn more about the subject, this was the response of 195 (81.25%) of the students while 140 (58.33%) of them said that they feel more competent in the subject. Only 125 (52.08%) of the students said that they are impressed with the good mastery of the subject by the Basic Science/Mathematics teacher. It could be inferred from the above that students have a positive impulse towards learning Basic Science and Mathematics during COVID-19 Pandemic

Observational Question 2: What are the observational learning impulses of teachers in teaching Basic Science and Mathematics during the COVID-19 pandemic?

Table 2: Descriptive Analysis of the observational learning impulses of teachers in Basic Science and Mathematics on learning during COVID-19 Pandemic

S/N	Items	Excellent		Good		Fair		Poor	
		Freq.	%	Freq	%	Freq	%	Freq	%
1	Adequate knowledge of the subject matter	3	37.50	2	25.00	3	37.50	0	0.00
2	The teacher uses a variety of reinforcement for desirable performance	1	12.50	3	37.50	2	25.00	2	25.00
3	The teacher presents instruction with clarity to ensure students' understanding	4	50.00	1	12.50	2	25.00	1	12.50
4	The teacher asks questions clearly enough for students' comprehension	3	37.50	2	25.00	2	25.00	1	12.50
5	The teacher uses a variety of skills for proper presentation of topic	1	12.50	3	37.50	3	37.50	1	12.50
6	The teacher uses good and relevant instructional materials	4	50.00	1	12.50	1	12.50	2	25.00
7	Teacher captures students' attention readily	3	37.50	2	25.00	1	12.50	2	25.00
8	The teacher appreciates the techniques used in the teaching of the topic	2	25.00	2	25.00	3	37.50	1	12.50

	taught								
9	The teacher gives appropriate feedback on students' responses	5	62.50	1	12.50	0	0.00	2	25.00
10	Teacher communicates clearly	3	37.50	2	25.00	1	12.50	2	25.00

Table 2 shows the frequency counts and percentages of the observational learning impulses of teachers teaching Basic Science and Mathematics during the COVID-19 pandemic. The ratings of the teachers are presented above from excellent to poor. The majority of the teachers rated the items in a positive way as presented in the table above.

Table 3: Descriptive analysis of the observational learning impulses of students towards learning mathematics

S/N	Items	Agree		Disagree	
		Freq.	%	Freq.	%
1	I love asking questions about the topic taught by my Mathematics Teacher	156	65.00	84	35.00
2	The approach of my Mathematics teacher makes the lesson irritating to me	183	76.25	57	23.75
3	I don't like asking questions from my Mathematics teacher	36	15.00	204	85.00
4	I tried to avoid mathematics lesson	40	16.67	200	83.33
5	I don't play with mathematics lessons	189	78.75	51	21.25

Table 3 shows the frequency counts and percentages of the observational learning impulse of students towards learning mathematics. 189 (78.75%) of the respondents said that they don't play with mathematics lessons while 183 (76.25%) of them said that the approach of their Mathematics teacher makes the lesson irritating to them. 156 (65.00%) of the respondents said that they love asking questions about the topic taught by their Mathematics Teacher. From the above indications, it could be said

that students have both positive and negative impulses towards learning mathematics.

Table 4: Descriptive analysis of the observational learning impulses of students towards learning Basic Science

S/N	Items	Agree		Disagree	
		Freq.	%	Freq.	%
1	I can joyfully apply the knowledge gained from the Basic lesson	193	80.42	47	19.58
2	My understanding of Basic Science helps me to develop more love for it	215	89.58	25	10.42
3	I like Basic Science as a subject	197	82.08	43	17.92
4	I always want to know more about Basic Science	213	88.75	27	11.25
5	I make myself available for Basic Science Lessons	196	81.67	44	18.33

Table 4 shows the frequency counts and percentages of observational learning impulses of students towards learning Basic Science. 215 (89.58%) of the respondents indicated that their understanding of Basic Science helps them to develop more love for it while 213 (88.75%) of them said that they always want to know more about Basic Science. I like Basic Science as a subject, this was the response of 197 (82.08%) of the students while 196 (81.67%) of them indicated that they make them available for Basic Science Lessons. About 193 (80.42%) of the students said they can joyfully apply the knowledge gained from the Basic lesson. From the above statements and indications, it could be said that students have a positive impulse towards learning Basic Science during the COVID-19 pandemic

Discussion

The result of the study indicated that students have a positive impulse towards learning Basic Science and Mathematics during COVID-19 Pandemic. The study revealed that the students said that they are impressed with the good mastery of the subject by the Basic Science/Mathematics teacher. The result is consistent with the findings of Van Steendam et al (2010) who postulated that observational learning is effective for relatively structured tasks, such as mathematics and science. The finding is

also in agreement with the studies of (Rourke and Sweller, 2009; Van Gog, Paas, and VanMerrienboer, 2004; 2006; 2008) who found that students who studied through observation to work examples of a task performed better than students who practised this task independently. The finding also revealed that the majority of the teachers rated the items in a positive way. The finding was in line with Adrian, Brenda and Rita (2020) that the knowledge possessed about the infection process and its prevention seems to help the teachers in the classroom to carry out their teachings effectively. The finding revealed that students have both positive and negative impulses towards learning mathematics. The finding is also in agreement with the assertion of Seweje (2004) that the planning strategy adopted by the teacher was to determine the success or failure of teaching and learning. The finding revealed that (78.75%) of the respondents said that they don't play with mathematics lessons while (76.25%) of them said that the approach of their Mathematics teacher makes the lesson irritating to them also (65.00%) of the respondent said that they love asking questions about the topic taught by their Mathematics teachers. The finding was in line with An and Carr (2017) that learning seems to be much better when combining different ways of taking in information. The result obtained also revealed that students have a positive impulse towards learning Basic Science during the COVID-19 pandemic. This result is consistent with the findings of Zhong, Luo, Zhang, and Liu (2020) who found that someone has to maintain a higher level of education on the information received to achieve positive when following COVID-19 practices. This implies that a positive attitude is developed to either influence or suppress any situation if adequate knowledge is acquired.

Conclusion

It can be concluded from the findings of this study that students have positive learning impulse literacy towards Basic Science and Mathematics during the COVID-19 Pandemic. The majority of teachers also rated the items taught on knowledge content adequately.

Recommendations

The following recommendations were made based on these findings:

Teachers should live ready and have a good mastery of the subject they teach at all times for effective teaching and learning in the classroom. The planning strategy adopted by the teacher should determine the success acquired by students in the teaching and learning processes. Students should endeavour to work on examples of a task and perform better in the task assigned to them independently. Teachers should exhibit positive learning impulses towards teaching that can influence the learning impulse on literacy of students in the classroom.

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