



**Lecturers' perception on the use of Instructional Scaffolding as a Teaching Strategy in the 21<sup>st</sup> Century Classroom**

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**Abstract**

The study was conducted to investigate lecturer's perception on the use of instructional scaffolding as a teaching strategy in the 21<sup>st</sup> century classroom. The study was conducted at Federal College of Education (Technical) Omoku, Rivers State, Nigeria. Three research objectives and three research questions were used for the study. The population of the study comprised all lecturers in Faculty of Science, Federal College of Education (Technical) Omoku. A sample of 45 lecturers were used for the study. Mean scores and standard deviation were the statistical tools used for the study. Simple stratified random sampling techniques was used for the study and the instrument used to collect data was a structured questionnaire titled Lecturers Perception on the use of Instructional Scaffolding as a Teaching Strategy in the 21<sup>st</sup> Century Classroom (LPISTSCC) with 25 items. The instrument was given to experts in the field of measurement and evaluation to ensure its validity. Test retest was applied to ensure reliability of the instrument and a reliability coefficient of 0.84 was gotten. The study found that Lecturers use Modelling teaching strategy, assess prior knowledge, include cooperative learning, incorporate visual aids and check for understanding as their teaching strategy. It was also found that scaffolding has great benefits as a teaching strategy. Furthermore, it was found that the use of advance organizers, cue cards, concept and mind maps are some of the ways instructional scaffolding can be used in the classroom. Based on these finding the researchers recommend that more scaffolding strategies should be encouraged and used in the classroom and Lecturers need to be exposed to other ways they can use and benefit from using scaffolding to teach in their classrooms.

**Key Words: Scaffolding; teaching strategies, 21<sup>st</sup> century classroom.**

## **Introduction**

Similarly, to the scaffolding used in construction to support workers as they work on a specific task, instructional scaffolds are temporary support structures faculty put in place to assist students in accomplishing new tasks and concepts they could not typically achieve on their own (Larkin, 2002). Once students are able to complete or master the task, the scaffolding is gradually removed or fades away the responsibility of learning shifts from the instructor to the student (Piper, 2005).

In education, scaffolding refers to a variety of instructional techniques used to move students progressively towards stronger understanding and, ultimately greater independence in the learning process (edglossary.org, 2017). The term itself offers the relevant descriptive metaphor: teachers provide successive levels of temporary support that help students reach higher levels of comprehension and skill acquisition that they would not be able to achieve without assistance. Like physical scaffolding, the supportive strategies are incrementally removed when they are no longer needed, and the teacher gradually shifts more responsibility over the learning process to the student.

Scaffolding is widely considered to be an essential element of effective teaching, and all teachers to a greater or lesser extent almost certainly use various forms of instructional scaffolding in their teaching. In addition, scaffolding is often used to bridge learning gaps. One of the main goals of scaffolding is to reduce the negative emotions and self-perceptions that students may experience when they are frustrated, intimidated, or discouraged when attempting a difficult task without the assistance, direction, or understanding they need to complete it.

One of the main goals of teaching is to help students retain and apply new knowledge. Scaffolding is a teaching technique that supports students acclimate to new learning. Scaffolding refers to a method in which teachers offer a particular kind of support to students as they learn and develop a new concept or skills (Grand Canyon University, 2021).

One of the main benefits of scaffolded instruction is that it provides for a supportive learning environment, students are free to ask question, provide feedback and support their peers in learning new material. When scaffolding is incorporated in the classroom, the teacher becomes more of a mentor and facilitator of knowledge rather than the dominant content expert (Hogan, Pressley, 1997).

There are four main types of scaffolding used for learning online: conceptual scaffolding which helps students decide what to consider in learning and guide them to key concepts. Procedural scaffolding: helps students use appropriate tools and resources effectively. Strategic scaffolding: helps students find alternative strategies and methods to solve complex problems. Metacognitive scaffolding: prompts students to think about what they are learning throughout the process and assists students reflecting on what they have learnt (self-assessment) (Rimor and Kalay, 2008).

This teaching style provides the incentive for students to take a more active role in their own learning. Students share the responsibility of teaching and learning through scaffolds that require them to move beyond their current skill and knowledge levels. Through this interaction, students are able to take ownership of the learning event (Hogan, Pressley, 1997).

As a general instructional strategy, scaffolding shares many similarities with differentiation, which refers to a wide variety of teaching techniques and lesson adaptations that educators use to instruct a diverse group of students, with diverse learning needs, in the same course, classroom, or learning environment. Because scaffolding and differentiation techniques are used to achieve similar instructional goals i.e., moving student learning and understanding from where it is to where it needs to be the two approaches may be blended together in some classrooms to the point of being indistinguishable. That said, the two approaches are distinct in several ways. When teachers scaffold instruction, they typically break up a learning experience, concept, or skill into discrete parts, and then give students the assistance they need to learn each part.

The need to implement a scaffold will occur when you realize a student is not progressing on some aspect of a task or unable to understand a particular concept. Although scaffolding is often carried out between the instructor and one student, scaffolds can successfully be used for an entire class (Alibali, 2006).

Instructional scaffolding is a process through which a lecturer adds supports for students in order to enhance learning and aid in the mastery of task. The lecturer does this by systematically building on students' experience and knowledge as they are learning new skills. The teaching strategy used in the classroom by lecturers includes the following: modelling, assessing prior knowledge, including cooperative learning, incorporating visual aids and checking for understanding. Some of the benefits of scaffolding in the classroom is that it allows for a free-flowing lesson that is structured, focus and where glitches have been minimized or eliminated prior to initiation, scaffolding can act as a possible early identifier of a student who is gifted and talented. Scaffolding can be used in the classroom in the following ways: the use of advance

organizers, cue cards, concept and mind maps, examples, explanation, handouts, stories, prompts, question cards and visual scaffolds.

Scaffolding is breaking up the learning into chunks and providing a tool, or structure, with each chunk. According to Alber (2014), the following strategies are used in teaching students:

1. Tap into prior knowledge: it is good to ask students to share their own experiences, hunches, and ideas about the content or concept of study and have them relate and connect it to their own lives. Sometimes the teacher may have to offer hints and suggestions, leading the students to the connections a bit, but once they get there, they will grasp the content as their own. Launching the learning into the classroom from the prior knowledge of the students and using this as a framework for future lesson is a scaffolding technique.
2. With modeling, the teacher engages students by showing them how to perform a skill while describing each step with a rationale. This provides students with both a visual and verbal example of what they will be expected to do (College of Education & Human Development, 2021). Modelling is also an instructional strategy in which the teacher demonstrates a new concept or approach to learning and students learn by observing and making learning notes. The different types of modelling include:
  - a. Task and performance modelling: task modelling occurs when the teacher demonstrates a task students will be expected to do on their own. This type of modelling would precede activities such as science experiments, foreign language communication, physical education tasks, and solving mathematical equations. This strategy is used so that students can first observe what is expected of them, and so that they feel more comfortable in engaging in a new task or activity.
  - b. Metacognitive modelling: demonstrates how to think in lessons that focus on interpreting information and data, analysis statements, and making conclusions about what has been learned. This type of modelling would be useful in mathematics class when teachers go through multiple steps to solve a problem.
  - c. Student-centered modelling: teachers engage students who have mastered specific concepts or learning outcomes in the task of modelling for their peers. This type of modelling makes the class less teacher-centered which, in some cases, provides a more supportive learning environment for students
  - d. Modelling as a scaffolding technique: when using modelling a scaffolding technique, teachers must consider students' position in the learning process (Chaucer School, 2020).

3. **Cooperative Learning:** a cooperative learning lesson involves students working in small groups to accomplish a learning task. The task is assigned by the teacher with clear directions. Students then work on the task together with defined roles. Cooperative learning groups typically allow for more social interaction and can enhance students' collaborative skills. Cooperative learning groups force students to interact socially and practice collaboration (Foster, 2020).
4. **Visual Aids:** Graphic organizers, pictures, and charts can all serve as scaffolding tools. Graphic organizers are very specific in that they help students visually represent their ideas, organize information, and grasp concepts such as sequencing and cause and effect.
5. **Check for Understanding:** when students are expected to perform a task entirely on their own from the beginning, they often become discouraged, especially if they do not understand the subject matter. Scaffolding allows student to build confidence that helps them tackle more difficult tasks (Resilient Educator, 2021).

### **Statement of the problem**

Instructional scaffolds promote learning through dialogue, feedback and shared responsibility. Through the supportive and challenging learning experience gained from carefully planned scaffolder learning, instructors can help students become lifelong, independent learners. The challenges of instructional scaffolding for lecturers includes: planning for and implementing scaffolds is time consuming and demanding, selecting appropriate scaffolds that match the diverse learning and communication styles of students, knowing when to remove the scaffolds so the student does not rely on the support and not knowing the students well enough (their cognitive and affective abilities) to provide appropriate scaffolds. Therefore, the study intends to find out lecturers' perception on the use of instructional scaffolding as a teaching strategy in the 21<sup>st</sup> century classroom.

### **Aim of the study**

The aim of the study is to investigate Instructional Scaffolding as a teaching strategy in the 21<sup>st</sup> century classroom.

### **Objective of the study**

1. Assess teaching strategies to use in scaffolding
2. Examine benefits of scaffolding in classroom
3. Evaluate ways scaffolding could be used in an instructional setting to improve retention.

## Research Question

1. What are the teaching strategies to use in scaffolding in classroom?
2. What are the benefits of scaffolding in classroom?
3. What is the ways scaffolding could be used in an instructional setting to improve retention?

## Research Methodology

This study is a descriptive survey research designed to investigate the use of instructional scaffolding as a teaching strategy in the 21<sup>st</sup> century classroom. The population of the study comprises of all lecturers in the faculty of science, Federal College of Education (Technical) Omoku. A sample of 45 lecturers was used for the study. Simple random stratified sampling technique was used for the study. The Instrument used to collect data from respondents is a structured questionnaire titled Lecturer's perception on the use of instructional scaffolding as a teaching strategy in the 21<sup>st</sup> century classroom (LPISTSCC) with 25 items. To ensure validity, the designed instrument by the researchers was given to experts in the field of measurement and evaluation. This was done to help the researchers assess the quality of each item in the context of clarity, ambiguity and generality of the items. Their various comments and assessment gave the researchers the conviction that the instrument is appropriate and valid for the research.

To determine the reliability of the instrument, test-re-test was applied; 20 copies of the instrument were administered on some lecturers at two different occasions within three weeks. Their responses to the questionnaire item in the two separate responses were correlated to attain the reliability co-efficient of 0.64. Their responses from the questionnaire were weighted on the four- point Likert type scale of strongly agreed, agreed, strongly disagreed and disagreed. Data obtained were analyzed with mean and standard deviation.

## Data Presentation

### Research Question 1: What are the strategies for scaffolding in classroom?

**Table 1.1: Strategies for scaffolding in classroom**

S/N	Items	Mean	Standard Deviation
	<b>Strategies for scaffolding in classroom</b>		
1.	Modeling teaching strategy	3.71	0.45
2.	Assess prior knowledge	3.68	0.46

3.	Include cooperative learning	3.68	0.46
4.	Incorporate visual aids	3.68	0.46
5.	Check for understanding	3.62	0.49
	<b>Total</b>	<b>3.67</b>	<b>0.46</b>

Table 1.1 revealed that lecturers accepted all the items as their teaching strategy on the use of scaffolding for classroom. This is because all the item mean was above the criterion mean of 2.50. Therefore, the study found that modeling teaching strategy, assess prior knowledge, include cooperative learning, incorporate visual aids and check for understanding are the strategies for scaffolding in classroom.

**Research Question 2: What are the benefits of scaffolding in classroom?**

**Table 1.2: Benefits of Scaffolding in classroom**

S/N	Items	Mean	Standard Deviation
	<b>Benefits of scaffolding in classroom</b>		
1.	Create momentum within the classroom, where students are on task, and less time is spent searching for information and rather is on learning and discovering.	3.55	0.50
2.	Allow for a free-flowing lesson that is structured, focus and where glitches have been minimized or eliminated prior to initiation.	3.55	0.50
3.	Scaffolding can act as a possible early identifier of a student who is gifted and talented.	3.68	0.46
4.	It provided individualized instruction and as a result increase the likelihood for students to meet instructional objective.	3.60	0.49
5.	Scaffolding engages students in meaningful and dynamic discussion	3.60	0.49
6.	Students are challenged through deep learning and discovery.	3.57	0.50
7.	Learners feel engaged and motivates to learn	3.57	0.49
8.	Provides a welcoming and supportive learning environment	3.64	0.48

9.	Students feel free to ask questions and support one another through new learning	3.62	0.49
10.	The level of frustration is minimized for the learner.	3.57	0.49
	<b>Total</b>	<b>3.59</b>	<b>0.48</b>

Table 1.2 revealed that lecturers accepted all the items as their benefits for scaffolding their classrooms. This is because all the item mean was above the criterion mean of 2.50. Therefore, the study found that scaffolding can act as a possible early identifier of a student who is gifted and talented.

**Research Question 3: What is the ways scaffolding could be used in an instructional setting to improve retention?**

**Table 4.3: Ways scaffolding could be used in an instructional setting to improve retention**

S/N	Items	Mean	Standard Deviation
	<b>Ways scaffolding could be used to improve retention</b>		
1.	The use of advance organizers	3.40	0.49
2.	Cue cards	3.51	0.50
3.	Concept and mind maps	3.46	0.50
4.	Examples	3.51	0.50
5.	Explanations	3.60	0.49
6.	Handouts	3.55	0.50
7.	Stories	3.60	0.49
8.	Prompts	3.60	0.49
9.	Question cards	3.53	0.50
10.	Visual scaffolds	3.57	0.49
	<b>Average mean</b>	<b>3.53</b>	<b>0.49</b>

Table 1.3 revealed that lecturers accepted all the items as possible ways scaffolding could be used in an instructional setting to improve retention. This is because all the item mean was above the criterion mean of 2.50. Therefore, the study found that visual scaffolds, prompts, stories, explanations, advance organizers, cue cards, concept and mind maps, examples, handouts and



question cards are excellent ways scaffolding could be used in an instructional setting to improve retention

## **Discussion of Findings**

### **Research Question 1: What is the strategy for scaffolding in classroom?**

The study found that lecturers accepted all the listed strategies as the strategies they apply in classroom for instructional scaffolding. Modeling teaching strategy, assess prior knowledge, include cooperative learning, incorporate visual aids and check for understanding are the strategies for scaffolding in classroom. The lecturers sampled in the study were accurate in their agreement for improved students learning. The use of modeling to scaffold several types of student activities involves the modeling strategies for the learning of key ideas is mentioned as a means to scaffold the metacognitive activities of students together with the intention of direction maintenance. The modeling of key ideas is described as a means to scaffold the cognitive activities of students together with the intention of cognitive structuring or reduction of the degree of freedom.

The result of the present study is in agreement with those of Mertzman (2008) examined the ways in which four elementary school teachers scaffolded the literacy of their pupils (5-8 years old) and reported the following scaffolding techniques: Modeling, scolds, praise, repetition, explanations of the answer, convergent questions, focus on meaning, and focus on word recognition and phonics.

### **Research Question 2: What are the benefits of scaffolding in classroom?**

The study found that scaffolding can act as a possible early identifier of a student who is gifted and talented. The lecturers sampled in the study were accurate in their agreement for improved students learning. Young children naturally seek scaffolding in their day-to-day experiences, and their behavior in a learning context naturally elicits support from teachers. They start out as testing novices and may benefit from an assessment procedure that mimics the more familiar instructional setting.

The study is in agreement with those of Knestrick (2013) who found that scaffolding reduces anxiety and uncertainty. An assessment that offers scaffolding in response to incorrect answers maximizes learning and eliminates the potential anxiety caused by a too difficult task. Moreover, scaffolding serves as feedback about correctness, preventing misconceptions from taking hold and resolving uncertainty that may otherwise pervade the assessment experience.

### **Research Question 3: What is ways scaffolding could be used in an instructional setting to improve retention?**

The study found that lecturers accepted that the use of advance organizers, cue cards, concept and mind maps etc are various ways scaffolding could be used in an instructional setting to improve retention.

The study is in agreement with those of Williams (2015) who found that students may need to have a structured response, pictorial choice, or concrete manipulatives in order to participate in an instruction. Structured responses may take the form of a sentence starter, a graphic organizer, a chart, or even questions posed with a multiple-choice format. As the students' proficiency in the task improves, these supports can be reduced or even removed. Provided these supports allow students to be successful in academic content while they are learning.

### **Conclusion**

The following conclusions were made by the researchers:

1. The study found that modeling teaching strategy, assess prior knowledge, include cooperative learning, incorporate visual aids and check for understanding are the strategies for scaffolding in classroom.
2. It found that
3. It also found that lecturers accepted that the use of advance organizers, cue cards, concept and mind maps etc are various ways scaffolding could be used in an instructional setting to improve retention.

### **Recommendation**

Based on the conclusion, the following conclusions were made by the researchers:

- More scaffolding strategies should be encouraged and used in the classroom
- Lecturers need to be exposed to other ways they can use and benefit from using scaffolding to teach in their classrooms.

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