

**Comparative Effectiveness of Context Cueing and Scaffolding
Instructional Strategies on Students' Achievement in English Language
Reading Comprehension, with Verbal Ability as a Moderator**

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Abstract

This study examined the relative effects of context cueing and scaffolding instructional strategies on secondary school students' achievement in English Language reading comprehension, with verbal ability (low, average, high) as a moderator. A pretest–posttest quasi-experimental design with two treatment groups was used in a 2×3 factorial arrangements. The sample comprised 120 students (60 per strategy) drawn from four purposively selected public secondary schools in Odogbolu Local Government Area, Ogun East Senatorial District, Nigeria. Data were collected with the English Language Reading Comprehension Achievement Test (ELRCAT) and the Verbal Ability Test (VAT) and analysed with analysis of covariance (pretest as covariate) and Bonferroni-adjusted pairwise comparisons. After controlling for pretest scores, students taught with scaffolding scored significantly higher than those taught with context cueing, $F(1, 113) = 14.23, p < .001, \text{partial } \eta^2 = .11$ (adjusted mean difference = 2.52). Verbal ability had a significant main effect, $F(2, 113) = 6.50, p = .002, \text{partial } \eta^2 = .10$, with high-ability students outperforming low- and average-ability students. The strategy $\times$ verbal ability interaction was also significant, $F(2, 113) = 5.49, p = .005, \text{partial } \eta^2 = .09$. Descriptively, the adjusted advantage of scaffolding was 5.27 points for low-ability students and 2.72 for average-ability students, and there was no advantage for high-ability students (-0.43). The findings suggest that scaffolding is particularly beneficial for students of low and average verbal ability, while context cueing performed comparably for students of high verbal ability.

Keywords: Achievement, comprehension, Context, Cueing, Scaffolding,

Introduction

Reading is an indispensable skill in the life of a literate person, and no effective teaching and learning can take place without it. It is an active process that involves searching for information, summarising, confirming or rejecting ideas and, where necessary, criticising them. Osikomaiya (2017) defined reading as a skill that helps an individual to expand experience and to reach a deeper understanding of themselves, other people and the world. Reading may also be seen as the construction of meaning from written communication. Onukaogu (2003) argued that reading should elicit dialogue and be viewed holistically. It is both a perceptual process, because the eye is involved, and a cognitive process, because the brain interprets what the eye sees. Reading is more than word recognition (Adejumobi, 2003). Its essence is comprehension, so the major objective of reading instruction is to foster in each student the ability to understand printed language. A reader must grasp the author's thoughts and not merely the words, which demands concentration and attention. Apena and Osikomaiya (2025) explained that reading is a complex system of deriving meaning from print" and necessitates a variety of skills including decoding (word identification), fluency, vocabulary, background knowledge, active comprehension tactics, and motivation to read.

The method of teaching is another factor that can hinder achievement in reading comprehension. Teachers can employ various methods to help students see how ideas relate to one another and to build a well-structured mental picture of what they are learning (Rakestraw, 2000), and language teaching is result-oriented only when appropriate methods and resources are used (Danks & End, 2005 and Osikomaiya, 2006). Two such methods are examined in this study: context cueing and scaffolding instructional strategies. Sentences in English occur in context, not in isolation, and guessing meanings from context is the most frequent way in which learners discover the meanings of new words. Context cueing is the use of contextual information to infer or predict unfamiliar words in a passage (Wren, 2005). When a reader meets a difficult word, the reader draws on the surrounding text, through semantic and syntactic cues, to work out what it means. Norris (2002) identified five types of context cue:

- i. **Definition** – the writer defines or explains the word;
- ii. **Experience** – the meaning is clarified by the reader's direct experience;
- iii. **Comparison and contrast** – the text compares the word with a familiar one or says what the word does not mean;
- iv. **Synonym** – the same idea is expressed by two or more words or phrases, one of which may be familiar;
- v. **Summary** – an idea or situation is summed up in one word or expression.

Context cueing has been applied across content areas, including language arts and English Language (Nicholson & Tom, 1991; Schwarenflugel *et al.*, 1996), and has been examined in relation to students' achievement in English Language reading comprehension (Osikomaiya, 2013).

Instructional scaffolding is the provision of temporary teacher or peer support that enables a learner to complete a task that would be beyond his or her unassisted efforts (Wood *et al.*, 1976). Instruction is planned to lead students from what they already know towards a deeper understanding of new material: support is substantial when concepts and skills are first introduced and is gradually withdrawn as students gain proficiency. The approach rests on the importance of social interaction in teaching and learning. Hogan and Pressley (1997) identified five scaffolding techniques, which may be integrated or used singly: offering explanations, inviting students' participation, verifying and clarifying students' understanding, modelling desired behaviours, and inviting students to contribute clues. In reading, the teacher converses with students around a text so that they can read at a level higher than they could reach alone. The effects of scaffolding on reading comprehension achievement, together with learners' verbal ability, have been examined in earlier work (Osikomaiya, 2019), and the two strategies have been compared in a related study (Osikomaiya, 2021). This paper examines comparative effectiveness of context cueing and scaffolding instructional strategies on students' achievement in English Language Reading Comprehension, with verbal ability as a moderator which makes it different from the two papers cited.

Verbal ability, the moderator in this study, refers to a learner's capacity to understand and use language for communication and reasoning. It is widely

treated as a predictor of performance in language skills (Olaboopo, 1999) and is an important variable in students' achievement in English Language (Adegbile & Alabi, 2007).

Students' poor performance in English Language is often taken as evidence that they do not read widely and lack a good command of the language of instruction (Otenaika, 2005). Although English is the language of instruction at all levels of education in Nigeria, its teaching and learning in secondary schools continues to suffer setbacks, a concern to stakeholders in Ogun State in particular. In the West African Examinations Council (WAEC) May/June examination, 616,370 of 1,593,442 candidates (38.7%) obtained credit passes in five subjects including English Language and Mathematics in 2015, rising to 878,040 of 1,552,758 candidates (56.5%) in 2016, (2016, WAEC Moderator's report). Although the proportion improved, more than two-fifths of candidates in 2016 still did not meet this standard. This study therefore examines the relative effects of context cueing and scaffolding on secondary school students' achievement in reading comprehension, with verbal ability as a moderator.

Statement of the Problem

Many students lack the ability to read and comprehend, which contributes to persistent poor performance in English Language and in other subjects. This inability arises partly from poor methods of teaching and from students' negative attitude towards reading. It is not yet clear whether context cueing or scaffolding is the more effective strategy for teaching reading comprehension in Nigerian secondary schools, or whether the answer depends on students' verbal ability. This study addresses these questions.

Null Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

- Ho₁: There is no significant difference in the reading comprehension achievement of students taught with scaffolding and those taught with context cueing, after controlling for pretest scores.
- Ho₂: There is no significant main effect of verbal ability on students' achievement in English Language reading comprehension.

H₀₃: There is no significant interaction effect of instructional strategy and verbal ability on students' achievement in English Language reading comprehension.

Purpose of the Study

The purpose of the study was to:

1. determine the relative effects of scaffolding and context cueing on students' achievement in English Language reading comprehension;
2. determine the effect of verbal ability on that achievement; and (c) whether verbal ability moderates the effect of instructional strategy.

Methodology

The study adopted a pretest–posttest quasi-experimental design with two treatment groups (scaffolding and context cueing), in a 2×3 factorial arrangements: instructional strategy (two levels) by verbal ability (low, average, high). The dependent variable was achievement in reading comprehension, and pretest achievement served as the covariate.

The participants were drawn from public secondary schools in Ogun East Senatorial District. One of the three senatorial districts of Ogun State was selected by random sampling, and Odogbolu Local Government Area was then selected, also by random sampling, from the nine local government areas in the district. At the second stage, four schools were selected from the local government area by purposive sampling. Sixty students were selected from each school, giving a sample of 120 students, 60 in each treatment group.

Two instruments were used. The English Language Reading Comprehension Achievement Test (ELRCAT) measured achievement in reading comprehension and was administered as pretest and posttest. Its reliability was established by the test–retest method, giving a coefficient of 0.84.

The Verbal Ability Test (VAT) was adapted from the Australian Council for Educational Research test. The 36-item test was used to classify participants into three verbal ability levels: low, average and high. It was revalidated for this study using Pearson's product-moment correlation, and a coefficient of 0.80 was obtained.

Procedure

The investigator visited the four selected schools and trained the research assistants for two weeks. The pretest was then administered to the participants, the treatment was given for twelve weeks, and the posttest was administered at the end of the treatment. In the **context cueing** group, students were taught to infer the meanings of unfamiliar words from the surrounding text using the five cue types described by Norris (2002). In the **scaffolding** group, the teacher supported students through the techniques described by Hogan and Pressley (1997), withdrawing support gradually as proficiency grew.

Method of Data Analysis

Data were analysed with descriptive statistics and a univariate analysis of covariance (ANCOVA) in which posttest achievement was the dependent variable, pretest achievement the covariate, and instructional strategy, verbal ability and their interaction the fixed effects. Pairwise comparisons used the Bonferroni adjustment, effect sizes are reported as partial η^2 , and all tests were conducted at the .05 level. Because the strategy xx verbal ability interaction was of substantive interest, the effect of strategy was also examined at each level of verbal ability (simple effects).

Results

Descriptive Statistics

Table 1: Posttest achievement in reading comprehension by instructional strategy and verbal ability

Strategy	Verbal ability	Mean	SD	<i>n</i>
Scaffolding	Low	24.92	3.92	12
	Average	27.50	3.05	20
	High	28.54	4.83	28
	Total	27.47	4.29	60
Context cueing	Low	21.67	6.56	9

Strategy	Verbal ability	Mean	SD	<i>n</i>
Total	Average	24.40	4.35	35
	High	28.00	3.18	16
	Total	24.95	4.87	60
	Low	23.52	5.33	21
	Average	25.53	4.18	55
	High	28.34	4.28	44
Total		26.21	4.74	120

Note. Unadjusted posttest means.

Table 1 shows the posttest scores. Students taught with scaffolding ($M = 27.47$, $SD = 4.29$, $n = 60$) scored higher than those taught with context cueing ($M = 24.95$, $SD = 4.87$, $n = 60$). In both groups, mean scores rose with verbal ability. The verbal ability groups were not evenly distributed across strategies: the scaffolding group contained more high-ability students (28 versus 16) and the context cueing group more average-ability students (35 versus 20). Verbal ability was therefore included as a factor in the analysis.

Analysis of Covariance

Table 2: Tests of between-subjects effects on posttest achievement (ANCOVA)

Source	Type III SS	df	MS	<i>F</i>	<i>p</i>	Partial η^2
Corrected model	1454.56	6	242.43	22.47	<.001	.544
Intercept	1326.88	1	1326.88	122.98	<.001	.521
Pretest (covariate)	898.05	1	898.05	83.23	<.001	.424

Source	Type III SS	df	MS	F	p	Partial η^2
Instructional strategy	153.58	1	153.58	14.23	<.001	.112
Verbal ability	140.28	2	70.14	6.50	.002	.103
Strategy $\times$ Verbal ability	118.55	2	59.27	5.49	.005	.089
Error	1219.23	113	10.79			
Total	85099.00	120				
Corrected total	2673.79	119				

Note. $R^2 = .544$ (adjusted $R^2 = .520$). Partial $\eta^2 = SS / (SS + SS \text{ error})$, computed from the reported sums of squares.

Table 2 presents the ANCOVA. The pretest was a significant covariate, $F(1, 113) = 83.23$, $p < .001$, partial $\eta^2 = .42$. After adjustment for the pretest, there were significant effects of instructional strategy, $F(1, 113) = 14.23$, $p < .001$, partial $\eta^2 = .11$; of verbal ability, $F(2, 113) = 6.50$, $p = .002$, partial $\eta^2 = .10$; and of their interaction, $F(2, 113) = 5.49$, $p = .005$, partial $\eta^2 = .09$. The model accounted for 54.4% of the variance in posttest scores (adjusted $R^2 = .520$). Because the interaction was significant, the main effects below are interpreted in light of it.

Hypothesis 1: There is no significant effect of the two Instructional Strategies on reading Comprehension

Table 3: Pairwise comparison of instructional strategies (Bonferroni-adjusted)

Comparison	Mean difference	SE	<i>p</i>	95% CI
Scaffolding – Context cueing	2.52	0.67	<.001	[1.20, 3.84]

Note. Based on estimated marginal means adjusted for the pretest (covariate evaluated at 17.05).

The estimated marginal mean (adjusted for the pretest) was 27.35 for scaffolding and 24.84 for context cueing. As Table 3 shows, the adjusted difference of 2.52 points was significant, equivalent to about 0.77 residual standard deviations. *Ho1* was therefore rejected: students taught with scaffolding achieved significantly higher posttest scores than those taught with context cueing.

Hypothesis 2: There is no significant Effect of Verbal Ability on students' achievement in reading Comprehension

Table 4: Pairwise comparisons of verbal ability levels (Bonferroni-adjusted)

Comparison	Mean difference	SE	<i>p</i>	95% CI
Low – Average	–1.12	0.88	.615	[–3.24, 1.01]
Low – High	–3.02	0.91	.004	[–5.24, –0.79]

Comparison	Mean difference	SE	p	95% CI
Average – High	-1.90	0.69	.021	[-3.58, -0.22]

Adjusted marginal means rose with verbal ability: 24.72 (low), 25.83 (average) and 27.73 (high). Table 4 shows that high-ability students scored significantly higher than both low-ability (mean difference = 3.02, $p = .004$) and average-ability students (1.90, $p = .021$), while the difference between low- and average-ability students was not significant ($p = .615$). H_{02} was therefore rejected: verbal ability had a significant effect on reading comprehension achievement.

Hypothesis 3: There is no significant Effect of the two strategies and Verbal Ability Interaction

Table 5: Adjusted posttest means by instructional strategies and verbal ability

Strategy	Verbal ability	Adjusted mean	SE	95% CI
Scaffolding	Low	27.35	0.99	[25.40, 29.31]
	Average	27.19	0.74	[25.73, 28.65]
	High	27.52	0.63	[26.27, 28.77]
Context cueing	Low	22.08	1.10	[19.91, 24.25]
	Average	24.47	0.56	[23.37, 25.57]
	High	27.95	0.82	[26.32, 29.58]

Note. Covariate (pretest) evaluated at 17.05.

The interaction was significant, so the effect of the strategies depended on verbal ability (Table 5 and Figure 1). Under scaffolding, adjusted means were similar at all three levels of verbal ability (27.35, 27.19 and 27.52). Under context cueing they rose steeply with verbal ability (22.08, 24.47 and 27.95).

Table 6: Difference between instructional strategies at each level of verbal ability (adjusted means)

Verbal ability	Scaffolding	Context cueing	Difference	95% CIs overlap
Low	27.35	22.08	5.27	No
Average	27.19	24.47	2.72	No
High	27.52	27.95	-0.43	Yes

Note. Difference = scaffolding – context cueing, computed from the adjusted means in Table 5. Separate significance tests were not run at each level, so this pattern is descriptive; the overall interaction is tested in Table 2.

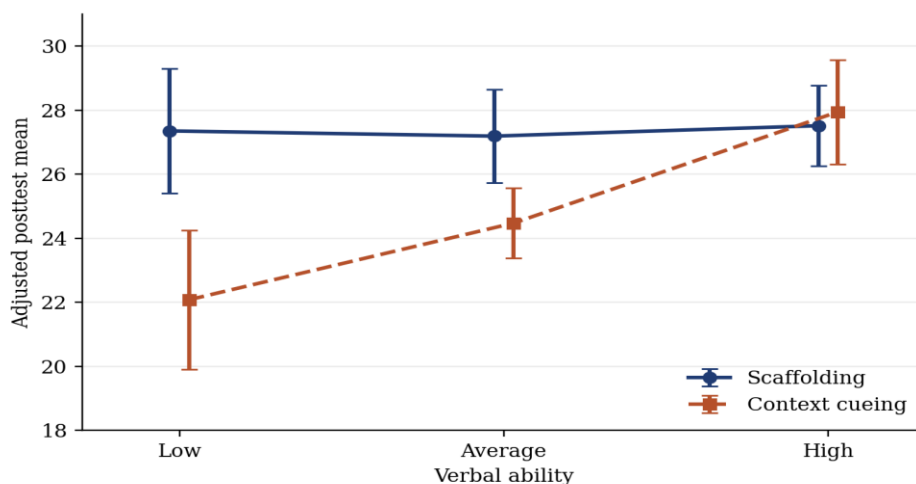


Figure 1. Adjusted posttest means (95% CI) by instructional strategy and verbal ability.

Table 6 shows the resulting simple effects: scaffolding produced significantly higher scores than context cueing among low-ability students (difference = 5.27, $p = .002$) and average-ability students (2.72, $p = .012$), but not among high-ability students (-0.43 , $p = 1.00$). H_03

Discussion of Findings

Instructional strategy: Students taught with scaffolding scored significantly higher than those taught with context cueing after pretest differences were taken into account, and the difference was of medium-to-large size (partial $\eta^2 = .11$). A plausible reason is the structure of the support each strategy provides. Scaffolding places a teacher or peer conversation around the text: explanation, invitation to participate, checking of understanding, modelling and shared clue-finding (Hogan & Pressley, 1997), with help withdrawn as competence grows (Wood et al., 1976). Context cueing, by contrast, depends largely on the reader's own ability to infer meaning from surrounding text (Norris, 2002; Wren, 2005). This study adds to earlier work on the two strategies (Osikomaiya, 2013, 2019, 2021) by examining them side by side within a single design.

Verbal ability: Verbal ability had a significant effect on achievement, with high-ability students outperforming both low- and average-ability students. This is consistent with the view that verbal ability is an important correlate of performance in language-related tasks (Olaboopo, 1999; Adegbile & Alabi, 2007). The lack of a significant difference between low- and average-ability students suggests that the advantage lay mainly at the upper end of the ability range. Oladunjoye (2003) cautioned that verbal ability does not necessarily guarantee good performance, and the interaction reported below shows that the instructional strategy can change how far ability matters.

Interaction: The most informative result is the interaction. Under scaffolding, students of low, average and high verbal ability reached similar adjusted scores, whereas under context cueing the gap between low- and high-ability students was nearly six points. The advantage of scaffolding was therefore concentrated among low- and average-ability students and was absent among

high-ability students. One interpretation is that the external support in scaffolding compensates for language resources that low- and average-ability learners have yet to develop, while high-ability learners already have enough of these resources to infer meanings from context unaided. This interpretation should be tested directly. Classroom engagement was not measured in this study, so the account offered here concerns achievement outcomes only.

Practical meaning: Because the effect of strategy depended on verbal ability, a single average difference between strategies can mislead: the overall advantage of 2.52 points is carried by low- and average-ability students. For classes with many such students, scaffolding is the stronger choice; for students of high verbal ability, the two strategies performed comparably. Exposure to English at home and school may also matter for language development (Ezeokoli & Osikomaiya, 2011), which supports providing diverse reading materials alongside either strategy.

Conclusion

Students taught with scaffolding achieved significantly higher reading comprehension scores than those taught with context cueing. Verbal ability also influenced achievement, and it moderated the effect of strategy: scaffolding was clearly superior for students of low and average verbal ability, while the two strategies were comparable for students of high verbal ability. The claim that verbal ability makes no difference to how these strategies work is therefore not supported by the data.

Recommendations

On the basis of the findings, the following are recommended:

1. Teachers of English Language should use scaffolding in reading comprehension lessons, particularly for students of low and average verbal ability.
2. Context cueing may be used with students of high verbal ability, for whom it performed as well as scaffolding in this study.
3. Teachers should be able to gauge students' verbal ability, so that strategies can be matched to learners.

4. Workshops and seminars should be organised regularly to expose English Language teachers to scaffolding and context cueing.
5. Curriculum planners and experts in English Language should design activity-based curricula that support student-centred reading instruction.

Implications of the Study

The findings suggest that reading comprehension instruction in Nigerian secondary schools can be improved by choosing strategies with learners' verbal ability in mind. Scaffolding offers a way to raise the achievement of students who would otherwise be left behind by strategies that depend on their own language resources, which may help to reduce failure rates in English Language. For theory, the significant interaction indicates that the effectiveness of an instructional strategy in reading comprehension should be examined together with learner characteristics, rather than in isolation.

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