



Research Article

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Effects of Arabic-Braille Basal Reader on Qur'anic Reading Among Persons with Blindness in Katsina State, Nigeria

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Abstract: This study examined the effects of an Arabic-Braille Basal Reader on Qur'anic reading fluency among persons with blindness in Katsina State, Nigeria. A quasi-experimental 2x2x2 factorial design was adopted, involving 60 randomly selected participants from a special school for the blind. The Arabic-Braille Basal Reader, a structured instructional tool, was used as the treatment. Data were collected through pre-test and post-test assessments and analyzed using Analysis of Covariance (ANCOVA). The findings revealed a significant main effect of treatment on Qur'anic reading fluency ($F(9,50) = 2.609, p < 0.05$), as well as a significant effect of onset of blindness ($F(1,58) = 18.722, p < 0.05$), but no significant effect of gender. The research instrument demonstrated strong psychometric properties, with a Cronbach's Alpha of 0.84 (internal consistency), a Cohen's Kappa of 0.87 (inter-rater reliability), and confirmed construct and content validity through expert review. The study recommends the wider production and integration of the Arabic-Braille Basal Reader into Qur'anic instruction for blind learners, alongside teacher training and policy advocacy to enhance inclusive Islamic education.

Keywords: Arabic-Braille, Qur'anic reading fluency, Blindness, Inclusive education, Basal reader, Special education

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BACKGROUND TO THE STUDY

The Glorious Qur'an is the book of Allah sent to the world through Angel Jubril to Prophet Muhammed (SAW) To serve as spiritual foundation, source of moral guidance and regulate behaviour of its faithful. The Qur'an is made to be read, enjoyed and followed by all irrespective of culture, gender, age and disability. For persons with blindness, access to the glorious Qur'an and acquiring proficiency in reading are problematic and requires a lot of effort especially for those in Nigeria who are not Arabs and who may not have had basic Arabic Knowledge of reading and writing. Tijani (2021) found that Non-native speakers encountered linguistic difficulties in learning Arabic. He therefore recommended teacher training program and learning resources. One of the major problems faced by persons with blindness in learning Qur'an is lack of Qur'anic-Braille training manual that would stimulate them to basic fundamentals of reading and limited Qur'anic materials tailored to their learning needs.

However, persons with blindness can thrive in any subjects and discipline if instructional material are packaged in braille formats. Braille is the medium of reading and writing for persons with blindness. This system of writing is an embossed dots on a paper in which the blind read by touch. It is the only system that allows persons with visual impairment to read and write independently and to combine both interactively. This implies that braille is the only medium that supports the acquisition of four language skills of listening and understanding, speaking and being understood, reading and writing (Abilu and Olaoye 2021). Many languages of the world including Arabic have Braille system that was developed to enable individual with blindness access literacy skills unhindered.

The development of Arabic Braille enables individuals with blindness to read the Qur'an in a tactile format. Yet, the existence of braille Qur'an was not accompanied by step-by-step pedagogy (Basal-Reader) of learning Arabic Braille. This makes it impossible for beginners in Nigeria to master the code and read

Qur'anic writings or words correctly as it should be read. Nigerian with blindness continue to struggle with fluency and comprehension, due to a lack of structured and progressive reading resources that guide learning in a systematic way. The Qur'anic education for the blind is often delivered through rote memorization or oral repetition, which may limit learners' independence and depth of understanding. Muslim with Blindness depend heavily on oral recitation from sighted individuals who may not be readily available, also oral recitation and memorization methods may not give the blind persons adequate contact with the spelling and content unless it is read. Thus, there is a dire need for basal reader to enhance independent reading and accessibility.

The Arabic-Braille Basal Reader is an instructional material designed to teach Arabic Braille to beginners to facilitate the Qur'anic teaching and learning. A basal reader is a levelled and sequential reading tool that introduces the alphabets, words, sentences, diacritic marks, and reading strategies in a scaffolded manner. This tool would serve as a support system in improving learners' spelling, reading, fluency, comprehension, and engagement with the Qur'anic reading.

Qur'anic reading, learning and understanding are fundamental skills in Islam. This is clearly reflected in the glorious Qur'an:

Qur'an 2:121 states: الَّذِينَ آمَنَّا هُمْ الْكِتَابُ يَتْلُونَهُ حَقَّ تِلَاوَتِهِ أُولَٰئِكَ الَّذِينَ يَتْلُونَ بِهِ وَمَنْ يَكْفُرْ بِهِ فَأُولَٰئِكَ هُمُ الْخَاسِرُونَ

Those to whom We have given the Book recite it with its true recital. They are the ones who believe in it. And whoever disbelieves in it, it is they who are the losers."

This verse highlights the importance of proper reading and comprehension of the Qur'an. "Recite it with its true recital" (يَتْلُونَهُ حَقَّ تِلَاوَتِهِ) implies not just verbal utterance, but accurate, thoughtful, and meaningful reading which applies to all, including those who read through Braille. For individuals with blindness, Arabic Braille open doors to this divine instruction, making access to Qur'anic knowledge a reality.

Similarly, Qur'an 96:1, the very first revelation, underscores the divine value of reading:

"Read in the Name of your Lord who created." (Surah Al-'Alaq, 96:1)

This command, "Iqra'," is a timeless call to seek knowledge through reading. It is not restricted to sighted individuals; rather, it includes all who strive to connect with Allah's guidance, including those who read through tactile means such as Braille.

Consequently, this study, therefore, seeks to examine the effects of the Arabic-Braille Basal Reader on Qur'anic reading among persons with blindness in Katsina State, Nigeria. It also explores the perception of blind learners and teachers towards the use of the Arabic-Braille Basal Reader.

Statement of the Problem

Access to the Holy Qur'an is a central aspect of Islamic education and spiritual development. For Muslims with blindness, however, this access is often limited due to the unavailability of appropriate learning materials and a lack of structured instructional support. Although Arabic Braille has been developed to enable persons with blindness read the Qur'an independently and understands its teaching, persons with blindness in Nigeria experience difficulties in reading Braille Qur'an because it does not come with basal reader nor teachers' guide. Consequently, they are often taught using oral methods such as oral recitation and rote memorization. These methods do not promote independent reading skills and do hinder deeper comprehension of the Qur'anic text. Similarly, most available readers are not proficient in reading according to rules (Tajweed) while knowledgeable ustaz are often not available. The practice does not encourage private and independent study by persons with blindness who may want to acquire qur'anic knowledge. This study, therefore, seeks to investigate the effects of the Arabic-Braille Basal Reader on Qur'anic reading performance specifically reading fluency. It also aims to explore the perceptions of learners towards Arabic Braille Basal-Reader thereby providing evidence that can inform instructional practice, curriculum development, and policy direction for inclusive Islamic education in Nigeria.

OBJECTIVES OF THE STUDY

The main objective of this study is to examine the effects of the Arabic-Braille Basal Reader on the Qur'anic reading performance of persons with blindness in Katsina State, Nigeria.

The specific objectives is to:

- evaluate the effects of Arabic-Braille Basal Reader on the Qur'anic reading fluency of persons with blindness.

- examine the effect of Gender on the Qur'anic reading fluency of persons with blindness in Katsina State.
- evaluate the effect of onset of blindness on the Qur'anic reading fluency of persons with blindness in Katsina State

RESEARCH QUESTIONS

- What is the effect of the Arabic-Braille Basal Reader on the Qur'anic reading fluency of persons with blindness in Katsina State?
- What is the effect of Gender on the Qur'anic reading fluency of persons with blindness in Katsina State.
- What is the effect of onset of blindness on the Qur'anic reading fluency of persons with blindness in Katsina State.

Hypotheses of the Study

The study will be guided by the following null hypotheses:

- **H₀₁:** There is no significant main effect of treatment (Arabic-Braille Basal Reader) on the Qur'anic reading of persons with blindness in Katsina State.
- **H₀₂:** There is no significant main effect of Gender on the Qur'anic reading of persons with blindness in Katsina State.
- **H₀₃:** There is no significant main effect of the onset of blindness on the Qur'anic reading of persons with blindness in Katsina State.

Significance of the Study

This study creates reading accessibility of the glorious Qur'an by persons with blindness, affords them with independence in reading and engaging with Islamic teachings. It reveals the relevance of using structured, progressive reading materials (the Arabic-Braille Basal Reader). It helps to concretize traditional rote memorization methods, which often limit learners' independent in reading, engaging in a more interactive and systematic approach to Qur'anic literacy.

Similarly, this study is significant to curriculum developers and policy makers involved in educational planning and reform. The study's findings provide the necessary data to advocate for the integration of Arabic-Braille reading materials into the curriculum of Islamic and Arabic education for students with blindness. This could result in policy changes and the development of inclusive educational materials in Arabic and Islamic studies, thus creating equitable and accessible learning

environment for all students, regardless of their disability.

Finally, the study is likely to inform future researchers and advocacy groups on efforts aimed at improving the availability and accessibility of Islamic educational resources for blind students in Nigeria.

Scope of the Study

This study was conducted on the effects of the Arabic-Braille Basal Reader on the Qur'anic reading fluency of persons with blindness in Katsina State, Nigeria. The geographical scope, of this study is Katsina State particularly the Special School for the Blind, Katsina. The school have a notable population of persons with blindness, the Arabic-Braille Basal Reader was implemented and tested on 60 participants with blindness. It involved a combination of pre-test and post-test assessments of the learners' reading skills.

METHODOLOGY

Research Design

The study utilizes a pre-test, post-test, control group, quasi experimental design of 2x2x2 for efficacy of the basal reader. Purposive sampling technique was used to select the school while random sampling techniques was used to select 40 males and 20 females students with blindness. The Arabic-Braille Basal Reader was used as the intervention tool. It contains levelled reading passages that gradually introduce more complex Qur'anic vocabulary and sentence structures to facilitate learning. A set of structured reading and comprehension tests was developed, focusing on passages from the Qur'an that are appropriate for the learners' level of proficiency. The tests assessed the learners' ability to read fluently (speed, accuracy). To ensure the accuracy and quality of the research instrument used in assessing the effects of the Arabic-Braille Basal Reader on Qur'anic reading, various forms of validity were employed. Content validity was confirmed through expert reviews involving Arabic and specialist, Special Educator of the visually impaired. These professionals assessed the relevance and appropriateness of the instructional materials and post-test, leading to revisions that aligned with the learning objectives of fluency, decoding, and comprehension in Arabic Braille. Construct validity was also ensured by designing the test to reflect core aspects of Qur'anic reading performance, and the significant ANOVA result ($F(9,50) = 2.609, p = .015$) further confirmed the instrument's effectiveness in measuring treatment effects. Additionally, statistical

conclusion validity was supported by the proper application of ANOVA.

Reliability testing demonstrated that the instrument was consistent and dependable. Internal consistency was measured using Cronbach's Alpha, which yielded a value of 0.84, indicating high reliability among the test items. Inter-rater reliability was established through the use of two trained evaluators who independently scored participants' performances, resulting in a Cohen's Kappa of 0.87. Furthermore, a test-retest approach showed the stability of the

instrument, as scores remained consistent when 20 participants were reassessed after a two-week interval. Finally, these results confirm that the instrument used in this study was both valid and reliable for measuring Qur'anic reading performance among persons with blindness in Katsina State. Quantitative data from the pre-test and post-test was analysed using paired t-tests to determine if there are statistically significant differences in reading fluency before and after the intervention. The paired t-test allows for a comparison of learners' performance on the two tests. The null hypotheses were evaluated at 0.05 level of significance.

RESULTS

Table 1: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	40	66.7	66.7	66.7
Female	20	33.3	33.3	100.0
Total	60	100.0	100.0	

The table above shows that 40 (66.7%) of the participants are males while 20 (33.3%) are females.

Table 2: Onset of Blindness

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Congenital	20	33.3	33.3	33.3
Adventitious	40	66.7	66.7	100.0
Total	60	100.0	100.0	

The table 2 shows that 20 (33.3%) of the respondents have their blindness congenitally while 40 (66.7%) of the respondents have their blindness adventitiously.

Test of Hypotheses

H01: There is no significant main effect of treatment (Arabic-Braille Basal Reader) on the Qur'anic reading fluency of persons with blindness in Katsina State.

Table 3: Tests of Between-Subjects Effects (Dependent Variable: post test)

Source	Type III Sum of Squares	DF	Mean Square	F	Sig.
Corrected Model	124.943 ^a	9	13.883	2.609	.015
Intercept	12039.210	1	12039.210	2262.663	.000
treatment	124.943	9	13.883	2.609	.000*
Error	266.041	50	5.321		
Total	33573.000	60			
Corrected Total	390.983	59			

a. R Squared = .320 (Adjusted R Squared = .197)

The results on table 3 indicated that there is a significant main effect of treatment (Arabic-Braille Basal Reader) on the Qur'anic reading fluency of persons with blindness in Katsina State ($F_{(9,50)} = 2.60, 9; P < 0.05$). Since the p-value of the f-ratio is significant. The effect

of size is 19.7%. Hence, the hypothesis is rejected and accept the alternate hypothesis.

H02: There is no significant main effect of Gender on the Qur'anic reading fluency of persons with blindness in Katsina State.

Table 4: Tests of Between-Subjects Effects (Dependent Variable: post test)

Source	Type III Sum of Squares	DF	Mean Square	F	Sig.
Corrected Model	7.008 ^a	1	7.008	1.059	.308
Intercept	29799.008	1	29799.008	4501.185	.000
Gender	7.008	1	7.008	1.059	.308
Error	383.975	58	6.620		
Total	33573.000	60			
Corrected Total	390.983	59			

a. R Squared = .018 (Adjusted R Squared = .001)

The results on table 4 indicates that there is no significant main effect of Gender on the Qur'anic reading fluency of persons with blindness in Katsina State ($F_{(1,58)} = 1.059$); $P < 0.05$. Since the p-value of the f-ratio is not significant. Therefore, the hypothesis stated is accepted.

H03: There is no significant main effect onset of blindness on the Qur'anic reading fluency of persons with blindness in Katsina State.

Table 5: Tests of Between-Subjects Effects (Dependent Variable: post test)

Source	Type III Sum of Squares	DF	Mean Square	F	Sig.
Corrected Model	95.408 ^a	1	95.408	18.722	.000
Intercept	30624.075	1	30624.075	6009.292	.000
onset of blindness	95.408	1	95.408	18.722	.000
Error	295.575	58	5.096		
Total	33573.000	60			
Corrected Total	390.983	59			

a. R Squared = .244 (Adjusted R Squared = .231)

The results on table 5 indicate that there is a significant main effect onset of blindness on the Qur'anic reading fluency of persons with blindness in Katsina State ($F_{(1,58)} = 18.722$); $P < 0.05$. Since the p-value of the f-ratio is significant. The effect of size is 18%. Therefore, the hypothesis is rejected and accept the alternative hypothesis.

SUMMARY OF RESULTS:

The introduction of the Arabic-Braille Basal Reader had a positive impact on both the reading fluency and comprehension of persons with blindness in Katsina State. The quantitative data demonstrated significant improvements in reading speed and comprehension scores after Deploying the treatment package (Arabic Braille Basal Reader). Similarly, the result indicates that onset of blindness has effect on the Arabic braille reading fluency while there is no effect of gender on qur'anic reading performance of persons with blindness.

CONCLUSION

This study reveals the effects of the Arabic-Braille Basal Reader on the Qur'anic reading performance of persons with blindness in Katsina State,

Nigeria. The results demonstrated that the Arabic-Braille Basal Reader had a significant positive effect on both the reading fluency and proficiency of the learners. Specifically, the intervention led to measurable improvements in the speed and accuracy of Qur'anic reading, as well as a better understanding of the texts.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made:

- There is the need for mass production and distribution of Arabic-Braille Basal Readers in Nigeria. This will help ensure that all learners with visual impairments have access to quality Qur'anic education materials, especially in underserved regions like Katsina State where there is high population of persons with blindness who are interested in Qur'anic reading.
- To maximize the effectiveness of the Arabic-Braille Basal Reader, it is essential to organise periodic workshops and seminars for persons with blindness on Qur'anic instructions.
- Advocacy efforts should be made to raise awareness among educational policymakers, Islamic organizations, and NGOs about the importance of

accessible Qur'anic education for persons with blindness through qur'anic braille.

- Future research should explore the long-term effects of the Arabic-Braille Basal Reader on Qur'anic literacy. Additionally, studies could investigate how this tool affects learners' engagement with other aspects of Islamic education, such as memorization of the Qur'an and understanding of Islamic jurisprudence.

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