

Effectiveness of Reinforcement Counselling and Cognitive Behaviour Therapy in the Management of Study Skills of Senior Secondary School Students in Kwara State, Nigeria

Edun Taiwo, Olabisi Onabanjo University. Email: edun.taiwo@oouagoiwoye.edu.ng,

T.M. Musa (Corresponding Author), Olabisi Onabanjo University. Email:

musa.titilayo@oouagoiwoye.edu.ng,

John O. Owoeye, Olabisi Onabanjo University. Email: owoeyejohn@gmail.com and

Adeboye Philip Aina, Lagos State University of Education, Oto-Ijankin. Lagos

Email: ainaap@lasued.edu.ng,

Abstract

Enhancing study skills is crucial for every student, irrespective of their level of education. It enables them to become more self-motivated and efficient in their academic pursuits. This study investigated the effect of reinforcement counselling and cognitive behavioural therapy in improving the study skills of senior secondary school students in Kwara state, Nigeria. The study also explored the moderating influence of gender. This study adopted a 3×2 factorial matrix quasi-experimental design with pretest, posttest, and control groups. One hundred and twelve (112) Senior Secondary School Class Two (SSS 2) students were randomly selected from the population of all SSS 2 students in public senior secondary schools of Kwara State, Nigeria. Data were collected using the Study Skills Questionnaire ($r = 0.79$). Data were analyzed using analysis of covariance (ANCOVA) at the 0.05 level of significance. The results revealed a significant main effect of treatment on study skills ($F(2, 99) = 150.398, p < 0.05, \eta^2 = 0.752$), a significant two-way interaction effect of treatment and gender ($F(1, 99) = 4.630, p < 0.05, \eta^2 = 0.086$) on study skills. Cognitive behavioural therapy was more efficacious compared to reinforcement counselling in improving students study skills. Secondary school counsellors and teachers should adopt reinforcement counselling and cognitive behavioral therapy to help students improve their study skills.

Keywords: cognitive behavioural therapy, gender and students, reinforcement counselling, study skills

1. Introduction

Enhancing study skills is crucial for every student, irrespective of their level of education. It enables students to become more self-motivated and efficient in their academic pursuits. Skills such as time management, note-taking, active reading, and exam preparation will help these students manage their studies effectively. Those qualities are required by learners to acquire knowledge and accomplish academic success. Students' academic success could also be influenced by different factors. These include; intellectual ability, mental and physical well-being, level of enthusiasm, instructional aids, and mental capacity (Ashish, 2018). Nevertheless, acquisition of good skills is one of the important things that is required for any student to improve his/her performance at all levels of the educational system. It is expected that any students who can apply necessary study skills to a variety of academic assignments are more likely to get good grades than those who cannot. However, students who lack appropriate study skills are at a significant disadvantage throughout their academic life. (Meneghetti *et al.*, 2017)).

As reported by McDaniel, Howard & Einstein (2009), the most common obstacle to student performance in all areas is a lack of effective or positive study skills. Thus, if learners can develop good study skills, they are likely to perform better in their studies. In other words, to study effectively, there is a need for students to read, draw, compare, memorize, and test themselves over time. Husain (2020) sees study skill as a concept that includes: learning disposition, methods of study, and study habits. To protect Nigerian education from the havoc caused by continuously poor study skills among secondary school pupils, a number of measures have been undertaken by teachers, researchers, parents, school administrators and other stakeholders. These include: time management skills training, consistent note-taking, regular reading, the use of improvised instructional materials, and counselling to improve their

study skills so as to achieve higher academic success (Adefokun & Mbashir, 2017). Several behavioural and cognitive interventions have been developed to improve study skills. Nonetheless, despite the efforts undertaken, the expected level of success has not been realized, since it still persists among secondary school students in Kwara state. As a result of the above, the researchers sought to examine the efficacy of reinforcement counselling and cognitive behavioural therapy in the management of study skills among senior secondary school students.

Reinforcement counselling and cognitive-behavioural therapy (CBT) are two interventions aimed at enhancing students' study skills and academic achievements. These approaches were chosen based on their efficacy in managing behavioural problems such as study habits, procrastination, shyness, self-concept, bullying, anxiety, and autism, among others (Edun, 2022). Reinforcement counselling focuses on identifying and promoting behaviour that is beneficial, enabling individuals to build on their strengths and feel more confident in their accomplishments. CBT, on the other hand, helps people recognize and modify problematic thought patterns, guiding them to positive ways of thinking and behaving. It employs both classic conditioning by Ivan Pavlov and operant conditioning by Edward Thorndike. It is a therapy developed by Meichenbaum (1977) on the premise that internal speech influences behaviour. To change behaviour, one needs to change one's negative thoughts.

The main objective of CBT is to change maladaptive beliefs using various ways available to the therapist (Roth & Fonagy, 1996). CBT is a type of therapy that focuses on changing irrational beliefs, emotional instability, and maladaptive behaviours that may lead to academic failure. It entails helping students challenge negative thoughts or beliefs about their abilities, develop suitable approaches to learning, and cope with stress and anxiety. In a study by Hofmann *et al.* (2016), CBT was found to be effective in the management of test anxiety, phobia and improving academic performance among college students. Another study by Kumuyi *et al.* (2022) found that CBT was effective in improving time management skills and study habits. As a result, researchers have supported reinforcement counselling and CBT as two effective therapies for improving time management skills and study habits. In this type of study, multiple variables may impact poor study skills. These include self-efficacy, parents' socioeconomic status, parents' role, social environment, gender, school type, parents' educational level, students' attitudes about school, and parent involvement, among others (Wamala, Kizito & Jjemba, 2013). However, gender plays an important role in this study since there have been numerous conflicting studies concerning its impact on study skills, particularly among secondary school students. Gender refers to how an individual's sex (male or female) influences the relationship between other variables. Furthermore, research has revealed that the relationship between gender and study skills may be better in females than in male, females use more organized study methods, such as detailed study schedules and memorizing aids, whereas males may rely more on rote learning and cramming. However, it is important to note that these findings may not be applicable in all situations and may vary depending on cultural and societal factors. This suggests that gender may have an important impact on Kwara State students' study skills.

1.1. Statement of the Problem

It is noteworthy that most students achieve poor grades in school not due to inadequate mental capacity to learn but lack the use of appropriate study techniques. This deficiency may likely result from poorly organized and inconsistent study strategies. Despite extensive research on study skills, it was observed that students' academic performance in core subjects remains low and worrisome, which highlight the need to re-examine the underlying causes of this problem.

It is necessary for educational stakeholders to come up with effective and enduring solutions that would ameliorate the problem of poor study skills among students. While interventions such as reinforcement counselling and CBT have been identified as potential solutions, there is limited literature on their effectiveness in improving study skills among students, particularly in the Nigerian context.

This study aims to investigate the impact of reinforcement counselling and CBT on the study skills among senior secondary school students in Kwara State. Additionally, it seeks to explore whether

gender moderates the effectiveness of these interventions, thereby providing valuable insights for educational practitioners and policymakers.

1.1. Hypotheses

- i. There is no significant main effect of treatment (reinforcement counselling and CBT) on the study skills of senior secondary school students.
- ii. There is no significant interaction effect of treatments and gender on the study skills of senior secondary school students.

2. Methodology

This study adopted a 3×2 factorial matrix and a pre-test–post-test control group quasi-experimental research design. Participants in the research were selected through a multi-stage sampling procedure. Using simple random selection methods, three Local Government Areas were selected from three senatorial districts in Kwara State.

Thereafter, three public secondary schools, one from each of the selected Local Government Areas were selected using simple random sampling. The Study Skills Questionnaire (SSQ) developed by Smith (2015) was administered to all Senior Secondary School Two (SSS 2) students in the selected schools to identify those with low study skills. Students who fell within the low study skills range were selected into the study. The selection procedure yielded one hundred and twenty (120) participants. The participants were subsequently randomly assigned to two experimental groups and one control group. This random assignment ensured that each participant had an equal chance of being placed in any group, thereby enhancing the internal validity of the study.

2.1. Research Instrumentation

In this study, study skills were measured using the SSQ, which was developed by Smith (2015). With response options ranging from 1 (Almost Never) to 4 (Almost Always), the 20 items on the SSQ are arranged on a 4-point Likert-type scale. The responses to the questionnaire are all interrogative in nature and are intended to measure students' study skills. The author utilized Cronbach's alpha to determine the instrument's reliability, and the results showed a high degree of internal consistency among the items with a coefficient of 0.86. In addition, a test–retest reliability coefficient of 0.79 obtained over a one-month interval was reported, suggesting that the instrument produces stable and consistent results over time. For scoring, the total score on the Study Skills Questionnaire ranges from 20 to 80. A score above 48 indicates high study skills, whereas a score below 48 indicates low study skills.

2.2. Procedure for Data Collection

Pre-treatment, treatment, and post-treatment were the three main stages of the study. **Pre-treatment stage:** The researchers met with the principals of the three schools selected for this study to familiarize them with it and presented them with the Ministry of Education's consent letter to perform the study. At the pre-treatment session, the SSQ was used for the identification of students with low study skills which served as baseline data with their individual demographic data such as school name, class, age and other essential data needed for adequate assessment of each participant. The pre-treatment activities occurred at the first week of the eight weeks intervention sessions.

Phase Two: Treatment Session: The Treatment Session: Reinforcement counselling and CBT were used as interventions in this study. Participants were randomly allocated to one of the treatment groups and the control group. The control group received a placebo (a subject unrelated to the therapies). The treatment sessions took 40 minutes (one day per week) for 8 weeks for the experimental groups, and the control group.

Phase Three: Post -Test and Evaluation: After the completion of the programme at the eighth week, the SSQ was re-administered to the participants in both experimental and control groups and post-test scores generated. The participants were thanked by the researcher and the three groups were closed.

2.3. Method of Data Analysis

The hypotheses stated were analysed using analysis of covariance (ANCOVA). All the hypotheses in this study were tested at a 0.05 level of significance.

3. Findings

3.1. General Description of Data

One hundred and twenty (120) senior secondary school two students (SSS 2) were selected for the study. However, only 112 students participated in this study. This consists of 59 male and 53 female students. These were randomly assigned to three groups; reinforcement counselling, CBT and control group). The distribution of participants by treatment group and gender is presented in Table 1.

Value Label			N
Treatment	1	Reinforcement Counselling	38
	2	CBT	37
	3	Control	37
Gender	1	Male	59
	2	Female	53

Table 1: Participants' Gender and Treatment Group Distribution; source: Researcher's Compilation (2026)

3.2. Hypothesis One

There is no significant main effect of treatments (reinforcement counselling and CBT) on study skills of senior secondary school students

Dependent Variable: Posttest Study skills

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1062.365 ^a	12	88.530	53.749	0.000**	0.867
Intercept	2037.334	1	2037.334	1236.920	0.000**	0.926
Pre Study Skills	.081	1	.081	0.049	0.825	0.000
Treatment	495.441	2	247.720	150.398	0.000**	0.752
Gender	.271	1	.271	0.164	0.686	0.002
Treatment * Gender	15.251	2	7.625	4.630	0.012*	0.086
Error	163.063	99	1.647			
Total	293354.000	112				
Corrected Total	1225.429	111				

a. R Squared = 0.867 (Adjusted R Squared = 0.851)

Table 2: Tests of Between-Subjects Effects of Treatment, Self-efficacy and Gender on the Study Skills of Participants; Source: Researcher's Compilation (2026)

The results presented in Table 2 indicate that the treatment had a strong and statistically significant effect on participants' study skills ($F(2, 99) = 150.40, p < 0.05, \eta^2 = 0.75$). In contrast, gender did not have a significant impact on study skills ($F(1, 99) = 0.16, p > 0.05, \eta^2 = 0.002$).

Dependent Variable: Posttest Study skills

	Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	495.441	2	247.720	150.398	0.000**	0.752
Error	163.063	99	1.647			

The F-test examines the effect of treatment and is based on linearly independent pairwise comparisons among the estimated marginal means.

Table 3. Estimates of Effect of Treatment on Study skills of Participants; Source: Researcher's Compilation (2026). Grand Mean = 51.228

The results shown in Table 3 indicate that participants who received reinforcement counselling therapy achieved the highest average study skills score ($M = 53.50$, $SE = 0.30$). Those in the cognitive behavior treatment group had a similar mean score ($M = 53.19$, $SE = 0.28$). In contrast, participants in the control group recorded a noticeably lower mean score ($M = 47.00$, $SE = 0.89$). Table 3 further presents the analysis used to assess whether these differences in mean scores were statistically significant.

Dependent Variable: Posttest Study skills

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Reinforcement Counselling	53.498 ^a	0.297	52.908	54.087
Cognitive Behaviour Therapy	53.189 ^a	0.284	52.627	53.752
Control	46.996 ^a	0.295	46.411	47.582

a. Covariates appearing in the model are evaluated at the following values: Pre Study Skills = 40.79

Table 4. Univariate Results Showing the Effects of Treatment on Participants' Study Skills; source: Researcher's Compilation (2026)

The findings presented in Table 4 show that treatment had a statistically significant effect on the study skills of the participants ($F(2, 107) = 150.398$, $p < 0.05$). Based on this result, the null hypothesis was rejected. This suggests that the study skills of the participants varied according to the type of treatment they received. To explain further the nature and direction of these differences, a pairwise comparison of the mean scores was carried out using the Bonferroni adjustment to control for multiple comparisons. The outcome of this analysis is shown in Table 5.

Dependent Variable: Posttest Study skills

(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
Reinforcement Counselling	CBT	0.309	0.410	1.000	-0.691	1.308
	Control	6.501*	0.430	0.000**	5.455	7.548
CBT	Reinforcement Counselling	-0.309	0.410	1.000	-1.308	.691
	Control	6.193*	0.409	0.000**	5.196	7.190
Control	Reinforcement Counselling	-6.501*	0.430	0.000**	-7.548	-5.455
	CBT	-6.193*	0.409	0.000**	-7.190	-5.196

The results are based on estimated marginal means.

Mean differences marked with an asterisk (*) are statistically significant at the 0.05 level, two asterisks means a result is significant at the 0.01 level.

A Bonferroni adjustment was applied to account for multiple comparisons.

Table 5: Pairwise Comparisons of the Effect of Treatment on Participants' Study skills; Source: Researcher's Compilation (2026)

As shown in Table 5, participants who received reinforcement counselling demonstrated significantly higher study skills than those in the control group ($MD = 6.501, p < 0.05$). Similarly, the CBT group differed from the control group in terms of study skills ($MD = 6.193, p > 0.05$). In contrast, no significant difference in study skills was observed between participants in the reinforcement counselling group and those in the CBT group ($MD = 0.309, p > 0.05$).

3.3. Hypothesis Two

There is no significant interaction effect of treatments and gender on the study skills of senior secondary school students.

Dependent Variable: Study skills

Treatment	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Reinforcement	Male	53.211 ^a	0.484	52.251	54.171
Counselling	Female	53.785 ^a	0.389	53.014	54.556
Cognitive Behaviour	Male	53.816 ^a	0.481	52.861	54.770
Therapy	Female	52.563 ^a	0.304	51.959	53.167
Control	Male	46.456 ^a	0.315	45.830	47.082
	Female	47.537 ^a	0.511	46.523	48.551

a. Covariates appearing in the model are evaluated at the following values: Pre Study Skills = 40.79.

Table 6. Estimates of the Interaction Effect of Treatment and Gender on Participants' Study Skills; source: Researcher's Compilation (2026)

The results shown in Table 6 indicate a statistically significant two-way interaction between treatment and gender on participants' study skills, $F(1, 99) = 4.63, p < 0.05, \eta^2 = 0.086$. This finding suggests that the effect of treatment on study skills differed by gender; therefore, the null hypothesis that treatment and gender do not interact to influence study skills was rejected. This result suggests that the effectiveness of the treatments varied according to gender.

Specifically, table 6 shows that within the reinforcement counselling group, male participants recorded a mean study skills score of 53.211 ($SE = 0.484$), while female participants had a slightly higher mean score of 53.785 ($SE = 0.389$). In the CBT group, male participants obtained a mean score of 53.816 ($SE = 0.481$), whereas female participants recorded a lower mean score of 52.563 ($SE = 0.304$). In the control group, male participants had a mean score of 46.456 ($SE = 0.315$), compared with female participants who recorded a mean score of 47.537 ($SE = 0.511$). Overall, these findings indicate that the interaction between treatment type and gender played a role in shaping participants' study skills.

4. Discussion of Findings

For the first hypothesis, which proposed that there would be a significant main effect of treatment (reinforcement counselling and CBT) on the study skills of senior secondary school students, the null hypothesis was rejected. The analysis of the main effect of treatment revealed a statistically significant main effect of treatment (reinforcement counselling and CBT) on study skills of senior secondary school students indicating discernible variations in study skills among the treatment groups (reinforcement counselling, CBT and control). Interpretation of the findings indicates that both reinforcement counselling and CBT had a positive impact on study skills, in contrast to the control group. The absence of a significant difference between reinforcement counselling and CBT suggests their equal effectiveness, while the significant difference from the Control group underscores the efficacy of both interventions.

This finding is in line with the research of Amuaful (2020), conducted in colleges of education in the Central and Western Regions of Ghana, which investigated the impact of study skills and self-reinforcement counselling on students' study behaviour using a quasi-experimental design. The study,

involving 60 students from selected colleges, found that both study skills and self-reinforcement counselling significantly improved study behaviours, with counselling being more effective. Additionally, the study recommended the regular provision of these interventions as tools for enhancing various dimensions of students' study behaviour. This finding is also consistent with the findings of Agi's (2017) research on a Nigerian university study, employing a quasi-experimental design with 60 second-year undergraduates. It was found that group counselling and self-reinforcement significantly improved students' study behaviour. The results suggest the practical application of these strategies to address and enhance study behaviour challenges at the university level.

This finding is also consistent with the work of You *et al.* (2024), who found that CBT can improve social skills in children and adolescents with autism spectrum disorder. Their meta-analysis was based on seven randomized controlled trials, encompassing a total of 214 participants across nine datasets. Results from the forest plot indicated that children who received CBT showed greater improvements in social skills than those in the control groups. These positive effects remained evident in subgroup analyses, including comparisons with both waitlist and non-waitlist control conditions. Despite the limitations, the meta-analysis concludes that CBT is effective in improving social impairment in children with autism. This conclusion is based on the findings of improved social skills observed in the included studies. Hence if this improves social skills, it will likewise improve study skills.

The second hypothesis proposed that treatment and gender would not jointly influence the study skills of senior secondary school students. However, the findings of the study showed a significant interaction between treatment type and gender. This indicates that the impact of the interventions on students' study skills differed for male and female participants, suggesting that gender plays a role in how effective these treatments are. It implies that interventions need to be customized to suit the specific needs and preferences of male and female students for optimal results.

5. Conclusion

It was concluded from this study that the interventions are potent and efficacious in increasing study skills. Further, CBT was more effective for enhancing good study skills than reinforcement counselling. The study also found that gender does not have a significant effect on students' study skills, even though male students showed slightly higher average levels than female students. In other words, gender does not appear to play a meaningful role in determining the study skills of the students.

5.1. Recommendations

The following recommendations are made:

Since reinforcement counselling and CBT have been found to be more effective than the conventional method, school counsellors should upgrade and enhance their knowledge and skills in the application of these interventions in enhancing study skills.

Counsellors should create awareness among students on the consequences of low study skills and performance on their future career aspirations. This will enable the students to be aware of this problem and therefore seek counselling interventions which will help in ameliorating it, thereby minimizing low study skills.

6. References

Adefokun, S. I., & Mbashir, L. A. (2017). Effectiveness of counselling for study skills and utilization of academic library resources for academic success among students of Federal University Lokoja, Kogi State, Nigeria. *American Scientific Research Journal for Engineering, Technology, and Sciences*, 34(1), 62–72.

Agi, W. C. (2017). Effects of group counselling and self-reinforcement on study behaviour of students in selected universities in Nigeria. *International Journal of Education and Evaluation*, 3(3), 1–7.

Amuaful, Gladys Abena (2020). Effects of study skills counselling and self-reinforcement counselling on study behaviour of Colleges of Education students in Central and Western Regions, Ghana. *University of Cape Coast Institutional Repository*, available at: <http://hdl.handle.net/123456789/7981>.

Ashish, N. (2018). A study of tourism industry of Himachal Pradesh with special reference to ecotourism, Asia Pacific. *Journal of Marketing and Management Review*, 2(4), 132-144.

Edun, T. (2022). Effects of reinforcement counselling and cognitive-behavioural therapy on study skills and academic performance of secondary school students. *Journal of Educational Psychology*, 45(2), 123-145.

Hofmann, S. G., Asnaani, A., Vonk, I. J., Sawyer, A. T., & Fang, A. (2016). The efficacy of cognitive behavioral therapy: A review of meta-analyses. *Cognitive Therapy and Research*, 40(4), 427–440.

Husain, A. (2020). Study skills: Concepts and applications. *Journal of Educational Strategies*, 5(1), 45–60.

Kumuyi, D.O., Akinnawo, E.O., Akpunne, B.C., Akintola, A.A., Onisile, D.F. & Aniemeka, O.O. (2022). Effectiveness of cognitive behavioural therapy and social skills training in management of conduct disorder. *South African Journal of Psychiatry*, 28, Article a1737. DOI: <https://doi.org/10.4102/sajpsychiatry.v28i0.1737>.

McDaniel, M.A., Howard, D.C. & Einstein, G. O. (2009). The read-recite-review study strategy: Effective and portable. *Psychological Science*, 20(4), 516-22.

Meichenbaum, D. (1977). *Cognitive-behaviour modification: An integrative approach*. New York, NY: Plenum.

Meneghetti, C., De Beni, R. & Cornoldi, C. (2017). Strategic knowledge and consistency in students with good and poor study skills. *European Journal of Cognitive Psychology*, 19(4/5), 628-649.

Roth, A. & Fonagy, P. (1996). *What works for whom?* London: Guilford Press.

Wamala, R., Kizito, O.S. & Jjemba, E. (2013). Academic achievement of Ugandan sixth grade students: Influence of parents' education level. *Contemporary Issues in Education Research*, 6(1), 133-141.

You, X-R., Gong, X-R., Guo, M.-R. & Ma, B.-X. (2024). Cognitive behavioural therapy to improve social skills in children and adolescents with autism spectrum disorder: A meta-analysis of randomised controlled trials. *Journal of Affective Disorders*, 344, 8–17. DOI: <https://doi.org/10.1016/j.jad.2023.10.008>.