

Effectiveness of Motivational Interviewing (MI) on the Academic Performance of low-academic status senior secondary school students in Niger State, Nigeria

BY

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ABSTRACT

The study investigated effectiveness of Motivational Interviewing (MI) on the academic performance of low-academic status secondary school students in Niger state, Nigeria. The study adopted quasi experimental design that employs pretest, posttest and control group. This involves three groups, two experimental (motivational interviewing) and a control group (conventional teaching method). Educational Materials and Methods Performance Test (EMPT) was used for data collection from 85 low-achievement status students that formed the sample for the study; while student-observation/MI checklist was used for the motivational interviewing session. The reliability coefficient of 0.81 was obtained from Kuder-Richardson (KR-20) formula. The analysis of covariance (ANCOVA) and Scheffe post hoc test were used to test the hypotheses. Findings of the study showed that: (a) there was higher significant difference in the performance of the study groups in favor of Experimental group A (Private secondary schools) (b) there was a lower significant difference found in the performance of low-academic status students in Experimental group B (Public secondary schools) (c) no significant difference was found in the performance of low-academic status students not-exposed to motivational interviewing. This implies that performance of low academic status students was enhanced when they are exposed to motivational interviewing (MI). Based on the findings, it was recommended that secondary school teachers should be encouraged to adapt Motivational Interviewing approach for teaching their students. Also, government and appropriate school boards and ministries should support and encourage the usage of motivational interviewing in schools.

Key words: Effectiveness, Low academic status, Secondary school students, Motivational Interviewing.

INTRODUCTION

Education is a process of teaching, training and learning, especially in schools or colleges, to improve knowledge and to develop skills. Oxford Advanced Learners Dictionary 8th edition also defines school as a place where children go to be educated. Education is the most powerful instrument for social progress. It is the greatest power yet known to man for his improvement. According to Omotere, 2013; Fafunwa, 1982, it is the aggregate of all the process by means of which a person develops abilities, skills and other force of behavior of positive (and sometimes of negative) value in the society in which he lives.

Large numbers of students in spite of having normal intelligence level have an inadequate academic motivation and do not show a good academic performance in different levels of education. So, they are faced with academic problems and educators also became frustrated in proportion to the success's expectation of them (Bowman, 2007). In most countries, this issue is considered as a challenge for system of education and has forced the specialists to seek solutions and effective interventions in this field. Now the main challenge for educators is to find the ways that can link these students with the education process again in a more effective way. One major way to do this is by enhancing self-efficacy and improving self-concept in low achievement status students, who also are referred as under-developed students (Taryea John Ekow et al, 2014)

Poor study habits, difficulties in accepting the friends, low concentration, disciplinary problems at school and home environment are the behavior patterns that have allocated for low- academic status students and also have proposed the low self-confidence, lack of direction in target, low responsibility, ambivalent, emotional maturity and lower mental health (Covington and Mueller, (2001); Deci & Lens et al, 2004). The features that can be related to the low-academic status students are: low self-esteem, low self-concept, low self-efficacy, pessimism, depression, fear of success, negative attitude toward school, lack of goal-oriented behavior, failure in set of realistic goals, all or nothing thinking and lack of motivation (Chike-Okoli, 2018).

In Nigeria, traditional method of teaching where teacher stands before the students and delivered his lesson while students listen, is a teacher-centred approach. In a classroom situation, students differed in terms of intellectual ideas, perception and readiness. Thus, some students learn and understand more quickly and easily

than others but these facts are not taken into consideration in traditional method of teaching (Umoh, & Akpan, 2014; Gambari et al, 2017). According to Gambari et al, traditional method of teaching alone may not be suitable for individual requirements, thus, there is need for modern technology to cater for difference teaching and learning styles.

Several factors have generally been identified as causes of poor academic performance. Agyeman (1993) reported that a teacher who does not have both the academic and the professional teacher qualification would undoubtedly have a negative influence on the teaching and learning of his/her subject. The availability and use of teaching and learning materials affect the effectiveness of a teacher's lessons (Broom, 1973). Class sizes have also been identified as determinants of academic performances. Omotere (2013) in his study of the ideal class size and its effects on effective teaching and learning in Ghana concluded that class sizes above 40 have negative effects on students' achievement. Bandura (1997) has also found homework to be a correlate of academic performance. One of the most significant factors responsible for students' academic performance is their self-concept (Bandura, 1997; Villarroel, 2001; Boulter, 2002). According to Boutler, if students are expected to perform well in their examinations, positive self-concept is sine qua non.

Not all of the interventional methods can be appropriate, especially for underdeveloped adolescents. Recently, as reported by Chike-Okoli (2018) an interventional method has been proposed as a motivational interviewing that can be effective and efficient for underdeveloped adolescents. Motivational interviewing is a client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence. Motivational Interviewing (MI) is an approach to behavioral change. The most recent definition of Motivational Interviewing (2009) is:

“.....a collaborative, person-centered form of guidance to elicit and strengthen motivation for change”.

MI is a particular kind of conversation about change; therapy, consultation and method of communication (Ferla, Valcke and Cai, 2009). A central concept about motivational interviewing is the identification, examination, and resolution of uncertainty about changing behavior. Here, the expert practitioner is familiar with clients' uncertainty and readiness to change and is able to exploit techniques and strategies that are responsive to the client.

Chike-Okoli (2018) observed that the spirit of MI is more than the use of a set of technical interventions. It is

characterized by a particular way of being that communicates compassion, acceptance, partnership, and respect. This contrasts with some other approaches to counseling which are based on the practitioner assuming an "expert" role, at times confronting the client and improving their perspective on the client's unhealthy behavior and the appropriate course of treatment and outcome. Its collaborative nature builds support and facilitates trust in the helping relationship.

The MI approach is one of the interviewer's drawing out the individual's own thoughts and ideas rather than imposing their opinions as motivation and commitment to change is most powerful and durable when it comes from the client. No matter what reasons the practitioner might offer to convince the client of the need to change their behavior or how much they might want the person to do so, lasting change is more likely to occur when the client discovers their own reasons and determination to change. The practitioner's job is to "draw out" the person's own motivations and skills for change, not to tell them what to do or why they should do it.

Unlike some other treatment models that emphasize the counselor as an authority figure, motivational interviewing recognizes that the true power for change rests within the client. Ultimately, it is up to the individual to follow through with making changes happen. This is empowering to the individual, but also gives them responsibility for their actions. Practitioners reinforce that there is no single "right way" to change and that there are multiple ways that change can occur (Armenakis, Bernerth, Pitts, & Walker, 2007; Bergquist & Westerberg, 2014; Grant, 2010; Rafferty et al., 2013).

In this study, MI is used as an approach to cater for the varying individual differences in terms of cause/reason for low academic performance and stimulate behavior change towards increased performance.

Motivation for change occurs when people perceive a mismatch between "where they are and where they want to be"

1.2 Statement of the Problem

The use of motivational interviewing has been spread rapidly from the issue of addiction to the health systems field, health promotion, reform and training areas and psychological disorders (Miller and Rollnick, 2002). Motivational interview has been showing its effectiveness in the school environments and in improving and promoting the status of adolescent that are suffering from depression, prevention of obesity in girls and tobacco consumption and drug abuse (Taryea John Ekow et al, 2014). According to Diallo and Wiess (2009), in

motivational interview the goal is guidance of client in order to develop his/her aims and explore the disparity there is between his/her goals and current behaviors.

It seems that adolescence owing to changes that occurs it has a particular proportion with four principles of motivational interview (empathy, revealing dispatch, deal with resistance and support of self-efficacy. Butler, 2009). Since low-academic status students will often face the problem of lack of motivation, so it seems that the motivational interview consultative style is an appropriate technique in order to help these students. Due to the wide range of motivational interview applications and the potential it has in the field of education for application, it is essential to do a research on its effectiveness in improving the status of low academic status students (Mendler, 2000; Taryea et al, 2014). No research in Niger State and in Nigeria has been done about this case and due to the unfavorable condition of adolescent students in secondary schools that are in trouble in self-efficacy and self-concept and also it is considered as a challenge for instructional educators, system of education and families.

Thus, the purpose of this study is to explore using motivational interviewing approach as an intervention to enhance self-concept and self-efficacy that result in higher academic performance or outcome

RESEARCH QUESTIONS

The following research questions were raised to guide this study:

- a. Is there any significant difference in the performance of low-academic status students exposed to Motivational Interviewing and traditional classroom teaching method?
- b. Is there any significant difference between performances of low-academic status students in public and private secondary schools exposed to Motivational Interviewing?

RESEARCH HYPOTHESIS

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

Ho₁: There is no significant difference in the performance of low academic status students exposed to motivational interviewing and traditional classroom method.

Ho₂: There is no significance difference between the performance of low academic status students in public

and private secondary schools exposed to motivational interviewing.

METHODOLOGY

Research Design

The study adopted quasi-experimental method using pre-test, post-test, control group design. This involves three groups of two levels of experimental (public and private) and one control group (traditional classroom teaching method). The traditional methods are the independent variables. The dependent variable is the post-test performance of the sample students in the three groups. The design layout is as shown below:

Table 1: Research Design Layout

Groups	Pre-test	Treatment	Post-test
Experimental Group (private)	O ₁	MI	O ₂
Experimental Group (public)	O ₃	MI	O ₄
Control Group	O ₅	Traditional classroom teaching method	O ₆

Pretest was administered on the experimental and control groups before the treatments. After six week treatment, post-test was administered on the groups. Experimental groups I & II were exposed to motivational interviewing, while control group was taught using traditional teaching method.

Sampling and Sampling Technique

The population for this study comprised of all the public and private secondary schools in Nigeria. The targeted students were members of Senior Secondary School SS2 students. The students were from four (4) different secondary schools located in Minna Metropolitan area in Niger State. Selection of the secondary schools was purposeful and based on the following criteria: (a) they have low academic performance status students as confirmed by the teachers (b) they offer the same curriculum for secondary schools.

Four teacher assistant-researchers conducted this action research project. All teacher researchers taught at the secondary level. Sample for pilot study was drawn from Senior Secondary 2 (SS2) students from Benue state, Nigeria that has similar characteristics with the selected secondary schools. The choice of SS2 level students was based on the following criteria: (a) the students obtained their Junior Secondary School Certificate (JSSC) from same school, (b)

they have sat for at least four (4) examinations in same school, (c) they have been identified as low-academic performance status students by the teachers, (d) the concept treated in this study is part of SSC course designed for secondary school students (WAEC, 2015).

Identified low academic status students from each sample secondary school were assigned into Experimental group I (public) (motivational interviewing), experimental group II (private (motivational interviewing), and Control group (traditional classroom teaching method). The distribution table is shown below:

Table 2: Distribution of sample for the study

Sample	Private	Public	Total
Experimental Group I	15	15	30
Experimental Group II	15	15	30
Control Group	10	15	25
Total	40	45	85

Table 2 shows the distribution of sample for the study. From the table, 85 SS2 students of low academic status participated in the study. Fifteen (15) from public schools were exposed to motivational interviewing (Experimental Group I), fifteen (15) from private schools were also exposed to motivational interviewing (experimental Group II), while 25 were exposed to traditional classroom teaching method (Control group).

Research Instruments

The research instruments used for the study include; (a) the Treatment Instrument (course material) (b) Motivational Interviewing (MI) student Observation Checklist (MISOC) (b) Test Instrument- Educational Materials and Methods Performance Test (EMPT).

The Treatment Instrument (1) - Course Material

The course material consists of three topics in English Language which was sub-divided into 15units of lesson. English Language was chosen as a core subject.

The student observation Checklist consist twenty (20) items to be completed by the teacher researchers to measure the behaviors relating to motivation of the students during the intervention. This data, gathered weekly allow the teacher researchers to observe the impact of the strategy over time. The Checklist measured student's preparedness, willingness to participate, interest in subject, focus on the topic, and the response to feedback given by peers or teachers.

The teacher researchers who taught the classes believed their students showed signs of low motivation and underachievement. The combination of these two problems was significant in its impact on the students' ability to succeed both inside and outside the classroom.

Evidence of this problem included the teacher researchers' observations of student achievement, teacher researcher reflections on student engagement in activities, and student assessments and grade records (continuous assessment scores) indicating performance.

Test Instrument- Educational materials and Method Performance Test (EMPT) Adopted from Gambari (2017)

This instrument consists of two sections. Section A dealt with students Bio-data such as: Name of school, Class level, and Gender. Section B focused on the questions for eliciting responses from students. This section consists of fifty (50) multiple choice objective questions. Each item in the instrument has four options (A-D) of possible answer to the question. EMPT was administered to the experimental and control groups as pre-test and post-test respectively. To reduce the test retest effects, the questions were reshuffled and administered in a different random order as post-test. On the scoring of the multiple choice items, '2' marks was awarded for each correct answer, a total obtainable mark of 100 and '0' for each wrong answer.

Validation of Research Instrument

- a. The Treatment Instrument (1) Course material: the material was validated by five English Language teachers from five selected secondary schools in Nigeria. Similarly, the pilot study was carried out on 30 students from MYPA Secondary School which is part of the population but not used for real experiment. Suggestions and comments from the experts and students were used for the final draft of the course material.
- b. The Treatment Instrument (2) the MI Student Observation Checklist was validated by two Motivational Interviewing experts who are certified members of the Motivational Interviewing Network of Trainers (MINT).
- c. The Test Instrument- educational Materials and Method Performance Test (EMPT) - this test instrument was validated by five (5) English Language experts from other secondary schools in Nigeria not sampled. The face and content validity of the test instrument was affirmed by the experts in relation to the English Language Curriculum for secondary schools in Nigeria. The experts also

examined the various items in the instrument with reference to the appropriateness of the contents and topics coverage. Their comments, opinions and suggestions were reflected in the final draft of the instrument.

The test of reliability of the instrument was carried out using Spearman Brown's reliability formula given as $r = \frac{2r_{hh}}{1+r_{hh}}$. The Reliability coefficient of the instrument 0.64 was obtained indicating that the instrument was reliable.

Procedure for Data Collection

The experimental group I and II received face-to-face learning interaction using two class hours per week and two hours motivational interviewing session (focus group) per week. During two hours motivational interviewing session, participants (students) were tagged and requested to respond to each question item on the interview schedule individually. Each participant responded to each of the question items. Responses were recorded and reactions observed. The MI session was face-to-face interaction with the researcher.

The control group (traditional classroom teaching method) received face-to-face lectures, paper-based pamphlets, and instructional materials using two class hours per week. The teaching materials were teacher developed lesson notes stating Objectives of the lesson, Introduction, Main Contents, evaluation (Self-Assessment) Exercise, Tutor-marked assignment, Summary and conclusion, and Home Work.

At the beginning of the study, pretest was administered to the three groups while posttest was administered after five weeks of treatment to measure their performance. Data obtained from the pretest and posttest were subjected to data analysis, mean was used to answer the research questions while ANCOVA is used to determine the significant difference in the mean, gain score between the pre-test and post-test of the participants. All the hypotheses were tested at 0.05 level of significance.

RESULT

Presentation of results is according to the research questions and hypotheses.

Research Question 1: What is the performance of low academic status students of secondary schools taught using motivational interviewing skills when compared with students using conventional classroom teaching method.

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Table 3: The Mean Achievement scores and Standard Deviations of students in the Experimental and Control Groups

Group	N	Pretest mean	SD	Posttest mean	SD
Experimental	30	25.42	0.92	36.24	1.1
Control	30	27.71	1.05	33.53	1.2
difference	05	2.29	0.68	3.71	0.9

Table 3 shows that the mean posttest score of 36.24 for the experimental group is higher than that of the control group with a mean achievement score of 33.53. Therefore, the difference in the mean post test score between the experimental and control group is 3.71 in favor of the experimental group. Again, the experimental group had a pre-test/post-test gain of 10.82 which is higher than that of control group with a gain of 5.82. This indicates that the experimental group which was taught with Motivational Interviewing Skills (MIS) achieved higher than the control group taught using conventional teaching method. To confirm the answer to research questions, the null hypotheses were tested.

Research Hypotheses 1: There is no significant difference in the mean achievement scores of students taught English Language using Motivational Interviewing Skills (MIS) and those taught using Conventional Classroom Teaching Method.

Table 4: ANOVA result of the Achievement difference between low academic achievement students taught using Motivational Interviewing and Conventional Classroom Teaching Method.

Source of variance	Sum of squares	df	Mean square	Fca l	Fcrt	Significance P value
Covariance	173.39	1	173.39	0.73	6.61	.000
Pretest	173.39	1	173.39	0.73	6.61	.000
Main effects	2055.47	1	2055.47	8.65	6.61	.000
Treatment	2055.47	1	2055.47	8.65	6.61	.000
Explained	2374.08	2	1189.04	5.00	5.79	.000
Residual	1247.48	5	237.75	1.00		.000
Total	3302.9	8				.000

Data for testing hypotheses 1 are in Table 4. As shown on Table 4, the F-value was found as 8.65 with significance P at 000 for main effect. This means that at less than 0.05 level, the difference in mean is significant hence the null hypothesis is rejected. Table 4 above indicates that there was a significant effect of Motivational Interviewing approach on students' performance, $F(1, 5) = 6.61, p < 0.05$. The results revealed that there was significant difference in the performance of low academic status students in the private secondary school group, the public secondary school group and the control group taught educational materials using Motivational Interviewing Skills. Hence, hypothesis one was rejected. In order to establish the direction of difference among the three groups, Sidak post-hoc analysis was conducted as shown in Table 5.

Table 5: Summary of Sidak analysis of significant difference on mean performance scores of SS2 Secondary School Students in the three groups

Variable (X)	Variable (Y)	Mean Difference (X-Y)	P-value
MI (Private)	Motivational Interviewing	1.1321	0.128
	Traditional	4.0623	0.000
MI (Public)	Motivational Interviewing	-1.1333	0.128
	Traditional	2.7100	0.000
Traditional (control)	Classroom conventional/teaching method	-4.0623	0.000
		-2.7100	0.000

Significant at 0.05 alpha level

Table 5 revealed that, there was significant difference between students in private schools and the public secondary school students taught using Motivational Interviewing ($p < 0.05$). Similarly, there is significant difference between low academic status students taught using Motivational Interviewing skills and those exposed to Conventional Teaching Method.

Research Question 2: What differences exist in performance on academic achievement between Public and Private Students taught with Motivational Interviewing skills as compared with conventional teaching method.

Answer to this question is found in table 6. The table shows that the mean post-scores of 44.30 for private schools in the experimental group is higher than that of public school students in the same group with a mean score of 42.10. This shows a mean achievement score difference of

2.20 in favor of private school students in the experimental group. In the control group, Table 6 shows that private school students had a mean score of 52.25 which is higher than that of public school students, with a mean of 51.00. This indicates that the achievement scores of private school students in the control group is higher than that of public school students, though the difference (1.25) is not substantial.

Table 6: Means and Standard Deviation of scores of Private and Public secondary school students

Group	- X (private)	SD	- X (public)	SD
Experimental group	Pretest=23.40	0.88	21.25	0.84
	Posttest=44.30	1.22	42.10	1.18
Control group	Pretest=26.6	1.03	23.61	0.97
	Posttest=52.25	1.45	51.00	1.43

Research Hypothesis 2: There is no significant difference between the performance of private and public low academic achievement students taught English Language using Motivational Interviewing skills (MIS).

Table 7 shows that F-value for public/private school is 0.05 with significance of F at 7.71 ($p > 0.05$). Therefore since 7.71 is higher than the acceptable error of 0.05, the null hypothesis that there is no significant difference between the performance of private and public students taught English language using MIS is not rejected.

Table 7: Analysis of Covariance for achievement Difference of low academic achievement status students of Private and Public secondary schools taught using Motivational Interviewing Skills (MIS)

Source of variance	Sum of squares	df	Mean square	Fratio	Significance of F
Covariates	172.69	1	172.69		
Pretest	172.69	1	172.69	10.15	7.71
Main effects	1643.69	2	821.85	10.15	7.71
Group	1643.69	1	1643.33	48.09	6.94
School	.081	1	.081	96.16	7.71
Two way interaction	.003	1	.003	0.05	7.71
Group and school	.003	1	.003	0.00	7.71
Explained	2374.17	4	593.54	0.00	7.71

Residual	1247.39	73	17.09	34.73	
Total	3621.56	85	11.36		

Table 8: Mean Performance scores of SS2 students taught using Motivational Interviewing Skills and Traditional Classroom Teaching Method

Groups	N	Pretest mean	Posttest mean	Mean Gain score
Motivational Interviewing (Private)	30	25.42	36.24	10.82
Motivational Interviewing (public)	30	27.71	33.53	5.82
Traditional Teaching method	25	2.29	3.71	1.42

Table 8 shows that there was improvement in the post-test scores of the three groups but the experimental group I (private) had a higher mean gain score than the other groups. From the table, the Experimental group I (private) had a mean gain score of 10.82, Experimental group II (public) had a mean gain score of 5.82 and control group with a mean gain score of 1.42. This was further illustrated in figure I below.

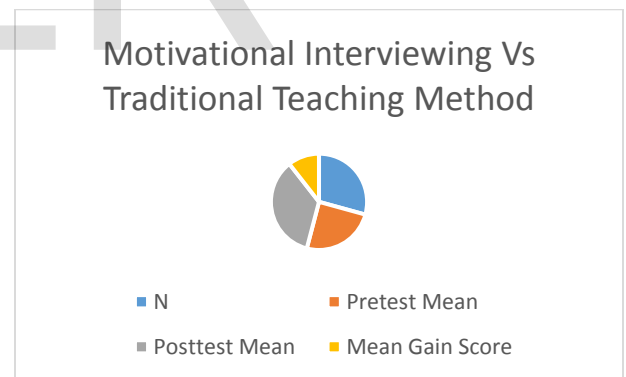


Figure 1: Graphical illustration of performance mean gain scores of Motivational Interviewing (private), Motivational Interviewing (public) and Traditional Classroom Teaching Method

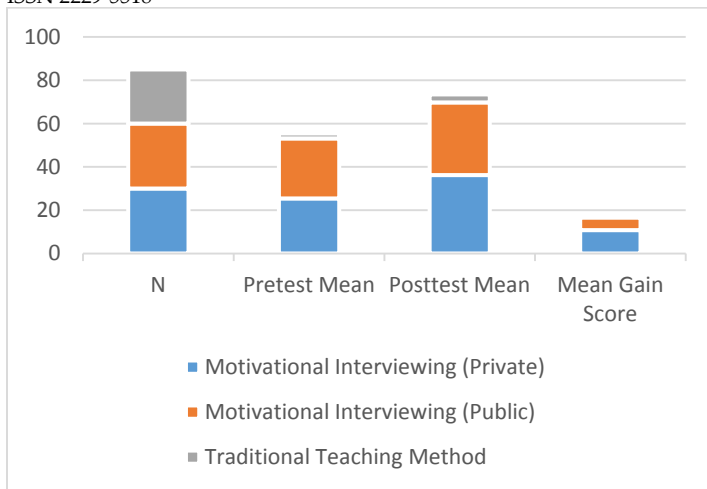


Figure 2: Bar Chart illustration of performance mean gain scores of Motivational Interviewing (private), Motivational Interviewing (public) and Traditional Classroom Teaching Method

DISCUSSION

The study revealed that sample low academic status SS2 students exposed to Motivational Interviewing teaching skills performed better than those in traditional classroom teaching method. This finding is in agreement with that of Tsung-Hau Jen & Chin-Lung Chien (2008) which reported significant difference among the MI intervention groups and the traditional teaching method control group in favor of the Motivational Interviewing approach. It also agrees with that of Hunter & Mazurek (2004), Jensen (2011), and Nalah (2014) which revealed that Motivational Interviewing Approach was more successful than traditional teaching method on students' achievement. However, the findings of this study contradicts that of Chang et al (2014) and Elmer et al (2016) which reported no significant difference in achievement of students exposed to varying non-conventional approaches other than the conventional methods.

The high level of performance of students exposed to Motivational Interviewing Approach over those taught using conventional classroom teaching method established the fact that using Motivational Interviewing teaching skills was a better approach for teaching secondary school students in Nigeria. The outstanding effect of Motivational Interviewing Approach over Traditional Teaching Method is based on the fact that Motivational Interviewing Approach combined the Motivational Interviewing Skills and Traditional Teaching Method.

CONCLUSION

This study explored the effectiveness of Motivational Interviewing Approach on low academic status secondary school students in Niger State, Nigeria. The Motivational Interviewing Teaching Approach was found effective for learning English Language concept. The SS2 students in Private Schools taught using Motivational Interviewing approach performed better than their counterparts in Public Schools taught with the same approach. However, the students exposed to Motivational Interviewing approach performed better than their counterparts taught using traditional classroom teaching method. This implies that Motivational Interviewing approach to Teaching and learning bridge the gap between the expected and actual academic performance of low academic status secondary school students.

RECOMMENDATION

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

- a. The teaching and learning process in Nigeria secondary schools should not rely on the conventional method of teaching secondary school curriculum. Instead, other methods of teaching such as Motivational Interviewing approach need to be introduced, where teaching and learning is enhanced by using Motivational Interviewing skills, which engages the individuality of the student.
- b. Teachers in secondary schools should be exposed to Motivational interviewing skills which would enable them expose the students to individualized student-centered instructional approach and student-self-discovery learning.
- c. Government and appropriate secondary school Boards should embrace and support the use of Motivational Interviewing approach in the teaching and learning process in secondary schools as this could enhance students' academic performance.

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