

## Assessment of the Effect of Rational Emotive Behaviour Therapy in Enhancing Junior Secondary School Students' Attitude towards Basic Science in Lagos State

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### ABSTRACT

The study assessed the effectiveness of Rational Emotive Behaviour Therapy in enhancing Junior Secondary School students' attitude towards Basic Science. One hundred and eighty (180) JSS II students were sampled from both Public and Private schools. Four (4) research instruments were used including attitude to Basic Science scale (ATBS), Basic Science Test (BST), Parental Interest Scale (PIS) and Socio-economic Status Scale (SESS). Three (3) hypotheses were formulated to guide the study. The sampled (students) were counselled for a period of six (6) weeks and the tests administered before and after counselling. Analysis of Covariance (ANCOVA) was used to analyze the data collected. One (1) hypothesis was not retained while two (2) were retained. Findings revealed that 70% of students treated with REBT have most positive attitude towards Basic Science than 30% not exposed to treatment with REBT. Based on the findings, it was recommended that REBT should be used, to boost the attitude and interest of students towards science, thereby closing the gap left by poor teaching.

**Keywords:** Rational Emotive Behaviour Therapy (REBT), Students' Attitude, Basic Science, Socio-economic status

### BACKGROUND

Counselling is very relevant in the contemporary world. In particular, school counselling occupies an important position in the society as it attempts to help students cope with various issues and developmental tasks. Counselling is a dynamic ever evolving and exciting profession that is dedicated to prevention, development, exploration, empowerment, change and redemption in an increasingly complex and chaotic world (Adewuyi, 2006). The essential nature of counselling process is that it evolves a set of techniques, strategies and methods used in assisting individuals (Akinade, Sokan and Osarenren, 1994) including students who are challenged with subjects like Basic Science.

Basic Science is an important subject in Secondary School education. The subject can therefore, not be ignored by any nation in view of the advancement in science and technology in the world over. Despite the importance of Basic Science, the performance of Secondary School students in Nigeria leaves much to be desired. Several factors have been adduced for poor academic performance in Basic Science which have been categorized into two (2). These are teacher related factors which include teacher – student ratio, teacher qualification, mastery of the subject and job satisfaction; while student related factors include intellectual ability, age, self concept, emotion, motivation and attitude (Onabamiro; Owoyele, Toyobo, Majekodumi, 2007). Attitude to learning can either be positive or negative. According to Akinade (2002), positive attitude towards learning promotes high academic achievement while negative attitude leads to poor academic achievement. Studies by (Aremu and Sokan 2003), Aremu (2004), Olalewe (2005) have shown that Secondary School students have negative attitude towards Basic Science due to poor teacher preparation, hence the poor performance in recent times.

Aworanti (2008) revealed that teachers lectured and give notes in the subject. These have serious implications for cognitive achievement and attitude to Basic Science. Aworanti (2008) investigated students' perception of Basic Science teaching in Nigeria and revealed that students do not carry out

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suggested science activities in Basic Science lessons. It was also observed that most teachers teach the subject without performing experiments while in some other instances, project work was not done in Basic Science. These lapses contributed to not only negative attitude of students but also make them low achievers in the subject.

The above factors notwithstanding, this study applied Rational Emotive Behaviour Therapy (REBT), a counselling therapy which is widely used in changing behaviour. It focused on uncovering irrational beliefs about science which lead to unhealthy negative emotion. The therapy aimed at replacing the irrational beliefs with more productive alternatives (Egbochukwu, 2008)

The core belief of this therapy is that many people make irrational/rational or faulty/accurate assumption about themselves and the world that lead to their emotional and behavioural disturbances or otherwise.

It is the extension of such belief in students at the foundational level in Basic Science that makes them feel that science is difficult; it is for special brains, resulting in negative or poor attitude towards the subject. In turn, the poor attitude results in poor performance that leads to emotional disturbance and, its attendance mal-adaptive behaviours like absenteeism, truancy and failure to do assignments in the subject

### **Statement of the Problem**

The problem of this study is to assess the effectiveness of Rational Emotive Behaviour Therapy in enhancing the attitude of students towards Basic Science. The investigation is germane following the perceived negative attitude towards science by students which has sustained poor performance in the subject. Scholars such as Akinsola (2000) observed that despite efforts on the part of government to encourage science teaching and learning among Nigerian students, the enrolment of students in core science subjects and science oriented courses at Senior Secondary School level and tertiary institutions respectively is not encouraging.

### **Purpose of the Study**

The main purpose of the study was to assess whether Rational Emotive Behaviour Therapy (REBT) is effective in changing the attitude of Junior Secondary School students towards Basic Science.

### **Research Questions**

Could the treatment with REBT have any effect on students’ attitude towards Basic Science?

Will the interaction between treatment with REBT and parental interest in science affect students’ attitude towards Basic Science?

Would the interaction between treatment with REBT and socio-economic status of parents affect students’ attitude towards Basic Science?

### **Hypotheses**

To guide this study, three (3) hypotheses were formulated and tested at 0.05 level of significance

1. There is no significant difference in the effect of treatment with REBT on students’ attitude towards Basic Science between the two experimental groups
2. There is no significant difference in the interaction effect of treatment with REBT and parental interest in science on students’ attitude towards Basic Science between the two (2) experimental groups
3. There is no significant difference in the interaction effect of treatment with REBT and socio-economic status of parents on students attitude towards Basic Science between the two (2) experimental groups

## **METHODOLOGY**

### **Research Design**

Quasi experimental design was used for this study. It involved 2x2x2 factorial design considered appropriate when the effects of two or more variables are to be studied simultaneously. The independent variable of REBT and two moderating variable of parental interest in Basic Science and socio-economic status of parents were considered for their effects on students’ attitude towards Basic Science.

### Population/Sample

The population of the study consisted of all the students in Junior Secondary School in Lagos State. The sample for the study was made up of one hundred and eighty (180) students; of this population were ninety (90) males and ninety (90) females who have consistently recorded poor performance in Basic Science drawn from six randomly selected Junior Secondary Schools in Lagos education district five (5)

### Sampling Technique

Multi-stage Sampling Technique was adopted for the study whereby the education district five (5) was randomly chosen from six Secondary School; two each from three Local Government Areas of Amuwo Odofin, Ojo and Badagry. Six classes of thirty students, 15 males and 15 females were randomly selected from students identified to have consistently performed poorly in Basic Science since JS I totaling one hundred and eighty (180)

### Research Instrument

Four research instruments were used for the study; and these include:

1. Attitude to Basic Science Scale (ATBS)
2. Basic Science Test (BST)
3. Parental Interest Scale (PIS)
4. Socio – Economic Status Scale (SESS)

The reliability of the instruments were determined through test – retest method after an interval of two weeks and reliability co-efficient of 0.64 (ATBS), 0.79 (BST), 0.82 (PIS) and 0.71 (SESS), were obtained respectively for each of the tests.

The above instruments were administered before treatment to obtain the basic status of the students’ attitude towards Basic Science. After treatment with REBT, the instruments were re-administered on the students to ascertain any improvement on their initial status, thereby prove the effect of treatment with REBT

### Data Analysis

The data obtained were analyzed using descriptive statistics to obtain the mean, mode, and standard deviation, while Inferential Statistics involving ANCOVA was also used in testing hypotheses at 0.05 level of significance. In order to know the direction of the difference and to ascertain the amount of variation due to each independent variable, a post hoc analysis was carried out using Duncan post hoc method, while the results for the study are presented below:

## RESULTS

### Test of Hypotheses

**H<sub>01</sub>:** There is no significant difference in the effect of treatment with REBT on students’ attitude towards Basic Science between the experimental and control group.

**Table1.** Summary of Analysis of Covariance (ANCOVA) on Students’ Attitude towards Basic Science

Source	Type III sum of squares	Df	Mean square	F	Sig
Corrected model	35114.010	96	365.77	5.685	.000
Intercept	8852.560	1	8852.560	68.798	.000
Pretest scores	.438	1	.438	.003	.954
Treatment	3854.945	2	1927.472	14.979	.000
Gender	407.517	1	407.517	3.167	.083
Parental interest	6016.702	48	125.34	1.948	.029
Treatment*Gender	1217.52	2	608.763	4.831	.014
Treatment* Parental interest	1492.405	4	124.969	.971	.434
Gender* Parental interest	1492.405	22	67.83	1.054	.420
Treatment* Gender* parental interest	25.296	1	25296	.197	.660
Error	5275.645	41	149.674		
Total	334055.000	180			
Corrected total	40389.656	178			

Rsquared = .869 (Adjusted R squared = .716)

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The result in the table shows that there is a significant difference in the effects of treatment on the attitude of students to Basic Science across the group ( $F_{2,178} = 14.979$ ;  $P < 0.05$ ). This implies that there is a significant difference among the students in the treatment group and those in the control group. This also means that the treatment (REBT) had effect on attitude of the students. Hence,  $F_{cal} = 14.979$  is less than  $F_{critical} =$  there is a significant difference.  $H_0$  is not accepted.

**Ho2:** There is no significant difference between the interaction effect of treatment with REBT and parental interest in science on students’ attitude towards Basic Science among the experimental groups

**Table2.** Summary of Analysis of Variance (ANCOVA) on the Interaction Effect of Treatment and Parental Interest on Students’ Attitude towards Basic Science

Source	Type III sum of squares	Df	Mean square	F	Sig
Corrected model	35114.010	96	365.77	5.685	.000
Intercept	8852.560	1	8852.560	68.798	.000
Pretest scores	.438	1	.438	.003	.954
Treatment	3854.945	2	1927.472	14.979	.000
Gender	407.517	1	407.517	3.167	.083
Parental interest	6016.702	48	125.34	1.948	.029
Treatment*Gender	1217.52	2	608.763	4.831	.014
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Gender* Parental interest	1492.405	22	67.83	1.054	.420
Treatment* Gender* parental interest	25.296	1	25296	.197	.660
Error	5275.645	41	149.674		
Total	334055.000	180			
Corrected total	40389.656	178			
Rsquared = .869 (Adjusted R squared = .716)					

The result in table 2 revealed that there is no significant interaction effect of treatment (REBT) and parental interest on students’ attitude towards Basic Science ( $F_{4,119} = 0.971$ ;  $P < 0.05$ ). therefore,, the null hypothesis is accepted.

**Ho3:** There is no significant difference in the interaction effect of treatment with REBT and Socio-economic Status of parents on students’ attitude towards Basic Science.

**Table3.** Summary of Analysis of Covariance (ANCOVA) on the Interaction Effect of Treatments and Socio – Economic Status on Students’ Attitude towards Basic Science across the Groups

Source	Type III sum of squares	Df	Mean square	F	Sig
Corrected model	39667.156a	116	341.958	1.915	.332
Intercept	13932.754	1	13732.754	57.022	.005
Treatment	1915.500	2	957.750	3.977	.043
School types	4550.761	19	239.566	.995	.588
Treatment x SES	4004.839	22	182.038	.756	.708
Schools x SES	203.392	3	b67.797	.282	.837
Error	722.500	3	240.833		
Total	334055.000	120			
Corrected total	40389.656	119			
Rsquared = 869 (Adjusted R squared =716)					

Table 3 revealed that there is no significant interaction effect of treatment and socio – economic status on students’ attitude towards Basic Science. The ANCOVA yielded a non significant F – value ( $F_{1, 119} = 0.756$ ;  $P > 0.05$ ). Therefore, the null hypothesis is accepted.

## DISCUSSIONS

Hypothesis one had stated that there is no significant difference in the effect of treatment with REBT on students’ attitude towards Basic Science between the two (2) experimental groups.

The result showed that there is a significant effect of treatment on the attitude of students towards Basic Science across the group. This implies that there is significant difference among the students in the treatment group and those in the control group. The analysis revealed that students in the REBT

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group have more positive attitude after treatment while those in control group who were not exposed to any treatment had least positive attitude because they were not given any treatment (Counselling with REBT).

This result corroborates the findings of Adewuyi (2006) who established the efficacy of REBT in enhancing the Federal Teachers’ attitude towards retirement in Lagos state.

Hypothesis two stated that there is no significant difference in the interaction of effect of treatment with REBT and parental interest in science on students’ attitude towards Basic Science.

The analysis of data in table two (2) indicated that there is no significant interaction effect of treatment with REBT and parental interest on students’ attitude towards Basic Science ( $F_{4, 119} = 0.971$ ;  $P > 0.05$ ). Overall, parents with higher educational levels and from higher socio – economic levels had positive perceptions of their ability to be involved in their children’s academics, while parents with lower socio – economic levels, typically having lower educational levels, were faced with more barriers to involvement (Shumow & Lomax (2002). These barriers could have their own negative experience with schooling while growing up, or feeling of inadequacy in addressing teachers or students and may have included lack of resources, non-flexible work schedules, transportation problems, child care needs and stress due to living conditions (Hill and Taylor, 2004).

Regardless of age, race, socio – economic status or educational level, Yun and Kusun (2008) asserted that parents, naturally, are the ‘central agents’ of education for their children. They posited that parents played a key role in the education of their children and therefore, impacted the engagement levels, academic performance and future social competence of their children.

In spite of the fact that a wealth of studies reported that parental involvement had been shown to positively affect student’s achievement and reduce behavioral problems (Kyriakides, 2005), parental interest did not significantly interact with the effects of REBT in enhancing students’ attitude towards Basic Science.

Hypothesis three states that there is no significant difference in the interaction effect of treatment with REBT and Socio-economic Status of parents on students’ attitude towards Basic Science.

The analysis of data on table 3 revealed no significant interaction effect of treatment (REBT) and socio – economic status levels on students’ attitude towards basic science.

Findings corroborate the work of Okafor (2007) who reported that despite severe threat and challenging obstacles inherent in low socio – economic status, low parental educational attainment, parental job opportunities and other possible unforeseen obstacles, students recorded success in their education in Anambra South Local Government Area of Anambra State. The study challenged the already affirmed position among educational experts that students from low socio-economic status households are bound to negative attitude towards academics or bound to academic under-achievement. The effect of socio-economic status is relatively environmental especially in a city like Lagos where the low socio–economic status of households could be seen as high compared with others in rural environments.

Furthermore, students from the so categorized low socio–economic households mingle with other students from higher socio–economic status, and such factors as peer influence, type of school, the quality of teacher can obliterate the effects their low socio-economic status could have on their attitude towards events and subjects.

Similarly, findings is also in line with that of Ogunshola and Adewale (2012) who investigated the relationship between home –based environmental factors and the academic performance of students in selected Secondary Schools in Edu Local Government area of Kwara State. They reported that parental socio–economic status and parental educational background did not have significant effect on students’ academic performance.

## **RECOMMENDATIONS**

At the end of the study, the following recommendations were made:

1. Schools should plan their time table to create room for counsellors to use REBT to assist students develop strong positive attitude toward science subjects.

2. In spite of its insignificant effect, parental involvement should be encouraged to the extent that its effect will become significant if they put in more effort.
3. The school counsellor in collaboration with the classroom teacher should identify students who need help and take active role in the implementation of the cognitive, emotional and behavioural techniques required to adjust the ailing students.

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