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Effect of Cognitive-Behaviour Therapy on Procrastination Reduction and Improved Mathematics Achievement among Low Achieving Students

Chikwe Agbakwuru

Faculty of Education, University of Port Harcourt, Nigeria

Stella Ugwueze

Ph.D. Candidate, College of Management and Social Sciences Renaissance, University Ugbawka Enugu,

Abstract:

This study investigated the effect of cognitive behaviour therapy (CBT) on procrastination reduction and improved mathematics achievement among low achieving students in Enugu State, Nigeria. Quasi-experimental, pre-test, post-test, control group, research design was adopted. Participants were 24 senior secondary school one (SS1) students. Cognitive-behaviour therapy treatment was on experimental group for 15 weeks while control group had no treatment. Instruments for data collection were adapted Procrastination Assessment Scale-Student, Teacher Made Mathematics Diagnostic Test (TMMDT) and Teacher Made Mathematics Achievement Test (TMMAT). The instruments were validated and reliability tested. Pearson's product moment correlation yielded a reliability co-efficient of .900, .816 and .868 respectively. The statistical analysis was significant at $p < 0.05$ which showed that the independent variable had effects on dependent variable. Therefore, we conclude that CBT had effects on procrastination reduction and improved mathematics achievement but no gender effect. Counselling and psychotherapeutic intervention was recommended for academic improvement in Enugu State.

Keywords: Cognitive-Behaviour, therapy, procrastination, mathematics, improvement, achievement

1. Introduction

Low academic achievement in Enugu State in particular and Nigeria at large has raised reactions from so many individuals on which way to go. Some stakeholders in education raise accusing finger of low academic achievement on lack of interest by students in secondary schools in Enugu State (Ekundayo, 2010). The blame is sometimes apportioned to the teachers, school administrators, learning environment, school curriculum, parents, and students themselves. Others attribute the low performance of students to lack of motivation and readiness to learn. In a similar way, some are of the opinion that students find it difficult to sit down and study their books owing to inclination to distractions and less concentration in their studies (Anugwara, 2013). On that same note, the researchers observed some complex habits among students in form of academic procrastination which hinder their academic achievement especially in core subjects like mathematics.

One thing is to identify a problem and another is to proffer solution to the problem. Therefore, with this habit of procrastination among students, educators are challenged within their areas of practice on which sound intervention approaches to apply on this sabotaging habit/behaviour that hinder students from achieving their full potential. This sabotaging behaviour of procrastination is what most students have indulged in, in one way or the other (Klein, cited in Steel, 2007). Unfortunately, it is noted that no matter how efficient or committed an individual is, there is the likelihood that he or she must have been found throwing away time on insignificant things instead of spending that time on school-related tasks. In schools, it is an observed fact that most students have procrastinated sometimes in their cause of study but this study is mostly concerned with those students who have become habitual procrastinators since procrastination is regarded as negative only if the tendency becomes, habitual, addictive and thus resulting to low academic achievement among those students who indulge in it.

The repercussion of procrastination is very miserable indeed as it has been found that the more an individual finds a particular task as difficult and hard, the more that individual procrastinate over that task. Mathematics is one of the academic tasks that most students complain about and is tagged as being difficult. There are lots of research findings in literature suggesting that as the students' beliefs in achieving something decrease, their tendency for procrastination increases (Steel, 2007; Seo, 2008; Odaci, 2011). This is a big problem both now and in future since mathematics which stands as a life wire of scientific and technological development is mostly avoided by so many low achieving students. It has also been observed that

some students just avoid mathematics because they do not like figures. Procrastination is considered bad, irrational way of thinking and as a consequence, produces inefficient and maladaptive behaviour. Therefore, in order to avert its disrupting, self-defeating chain of thought and feeling which translates to low academic achievement especially in mathematics among students, an intervention such as Cognitive Behaviour Therapy (CBT) is required. Cognitive Behaviour Therapy (CBT) is an insight-focused therapy that emphasizes, recognizes, and changes negative thoughts and maladaptive beliefs in individuals (McFarr, 2013). The premise of cognitive behaviour therapy is that our thoughts influence our feelings and behaviour. Beck theorized that by changing our thoughts or our relationship to our thoughts; we can change behaviour and emotions (McFarr, 2013). Cognitive Behavioural Therapy is most likely a good choice when dealing with procrastination as it is short term and seems to make relatively rapid changes in behaviour (Havel, 1993). Furthermore, CBT approach is based on the theoretical rationale that the way people feel and behave is determined by how they perceive and structure their experience (McFarr, 2013).

Cognitive Behaviour Therapy (CBT) has two components, the cognitive and behavioural components. The cognitive helps people change thinking patterns that keep them from overcoming their fears through cognitive restructuring. For example, a person with habit of procrastination will be helped to see that his or her task avoidance attitude due to fear of tackling the problem at hand as previously feared can be overcome. The behaviour component of CBT seeks to change people's reactions to anxiety-provoking situations. A key element of this component here is exposure, in which people confront the things they fear and start to take action instead of procrastinating. CBT proposes that change comes about by changing the client's thinking about the situation. Once the client has converted his or her point of view, the problem-perception switches to a clearer context (Hofmann, 2011).

Mathematics as a foundation for scientific and technological advancement is mostly affected when it comes to task avoidance. That is why there is continues students' low achievement in mathematics both in internal and external examinations in Enugu State (Ekundayo, 2010). This remains a big challenge to educationists and requires urgent intervention to improve the present situation. The consequence is that if students do not get help, they progressively deepen their disturbance and end up in a state of hopelessness in which they relinquish efforts to change or improve their circumstances.

In conclusion, a general concern in recent times in the educational arena regarding the academic performance of low achieving students should be addressed. Destructive neurotic thought and action like procrastination hinders academic achievement in mathematics in particular. Mathematics holds the key to national development, yet it is observed that the same mathematics has one of the highest failure rates in all public examinations right from common entrance examination into Junior Secondary School, to Senior School Certificate Examination (SSCE), and National Examination Council (NECO) examination (Kurumeh, & Chiawa, 2009). Furthermore, external examination result as shown in May/June 2014 WASSCE indicates that 70 percent of candidates who took the examination failed to obtain credits in mathematics (Folarin, 2014). This shows an obvious need of effective interventions to restructure students' mind since they believe that mathematics is difficult to understand and leads them to procrastinate. As students reduce procrastinating, their interest in academic tasks is sustained, definitely mathematics phobia and sense of difficulty in mathematics vanishes leading to greater positive improved mathematics achievement in Enugu State. It was in the light of these situations that this study was carried out, and in so doing the researchers have contributed to the frontier of knowledge. The study was guided by four research questions and corresponding four null hypotheses as follows:

- What is the effect of Cognitive Behaviour Therapy (CBT) on procrastination reduction among low achieving students based on their pre-test scores on the Procrastination Assessment Scale-Student (PASS)?
- What is the effect of Cognitive Behaviour Therapy (CBT) on procrastination reduction among mathematics low achieving male and female students based on their post-test scores on the PASS?
- What is the difference in academic procrastination reduction of the low achieving students in CBT experimental group and control group based on their post-test scores on the PASS?
- What is the difference in mathematics achievement of the low achieving students of the experimental group due to CBT on their teacher made mathematics achievement test (TMMAT) pre-test and post-test scores?

The corresponding hypotheses are as follows:

- There is no significant deference in the effect of Cognitive Behaviour Therapy (CBT) on procrastination of low achieving students based on their pre-test, post-test scores on the Procrastination Assessment Scale-Student (PASS).
- There is no significant difference in the effect of CBT on procrastination reduction among low achieving male and female students based on their post-test scores on the pass.
- There is no significant difference in procrastination reduction of low achieving students in the CBT experimental group and control based on their post test scores on the PASS.
- There is no significance difference in mathematics improvement of the low achieving students of the experimental group due to CBT based on their mathematics achievement test pre-test and post-test scores.

2. Methodology

This study was carried out in Enugu North Local Government Area of Enugu State, Nigeria. The study adopted quasi-experimental, pre-test, post-test control group, research design. In notational form, two-group quasi-experimental design is illustrated in figure 1 having an experimental group and a control group.

Groups	Types of Treatment	Pre-Test	Treatment	Post-Test
1	CBT	O_1	X_1	O_2
2	Control	O_3		O_4

Table 1: Notational Representation of Two Group Quasi-Experimental Design
Pre-Test (O_1, O_3); Treatment (X_1); Post-Test (O_2, O_4)

The population of the study consisted of all 120 procrastinating and low achieving students (male and female) in SS1 classes of three public secondary schools in urban area in Enugu North of Enugu State. The three secondary schools include; Government Secondary School Enugu, New Layout Secondary School and Coal Camp Secondary School. The researchers focused on those SS1 students who are both low mathematics achieving and academic procrastinators. Senior secondary students were considered as the most appropriate group for this study because as new students in senior secondary school, it is important to help them to reduce academic procrastination and improve their mathematics achievement. The achievement of these will help them to make right decisions in their choice of subjects.

A purposive sampling technique was applied to draw a sample of 24 student participants from two Government Secondary Schools, named New Layout Secondary School and Coal Camp Secondary School all in Enugu North Local Government Area in Enugu State, Nigeria.

Treatment with CBT was given to the experimental group while the control group was not given any treatment. The treatment with CBT for the experimental group lasted for 15 weeks, of 55 minutes per session per week.

The instruments used for data collection include the following: Procrastination Assessment Scale-Student (PASS), Teacher Made Mathematics Diagnostic Test (TMMDT) and Teacher Made Mathematics Achievement Test (TMMAT). Procrastination Assessment Scale-Student (PASS) was adapted from original procrastination scale developed and validated by Solomon and Rothblum (1984). The researchers decided to modify the instrument to adapt it to the characteristics of the target group. Out of 44 items from the original PASS, 30 items were adapted and modified to be used as instrument for data collection in this study. The PASS is a five-point Likert scale, with the following response options and corresponding weights – Always =5, Nearly Always =4, Sometimes =3, Almost Never =2, Never =1. Score 30 by any student stands for an occasional procrastinator; 31-50 is a chronic procrastinator, while above 50 is a severe procrastinator – the higher the score, the higher the level of procrastination. The teacher made mathematics diagnostic test (TMMDT) was a take-off assessment which was based on the students' first term scheme of work. It consists of 20 objective questions which were answered in 30 minutes. The TMMDT was used as a confirmation of low achievement in mathematics. Teacher made mathematics diagnostic test (TMMDT) was administered to the two groups before the treatment while the teacher made mathematics achievement test (TMMAT) was administered to the two groups as pre-test and post-test.

In order to establish the reliability of the instruments (Procrastination Assessment Scale for Students (PASS), the Teacher made mathematics diagnostic test (TMMDT) and the Teacher made mathematics achievement test (TMMAT), a pilot study was carried out on a sample of six (6) low achieving students of Community Secondary School Eva Valley still in Enugu North L.G.A in Enugu State. Test retest method whereby same tests were given to the same group of subjects on two separate occasions of two weeks interval to avoid memory effect was adopted. The reliability co-efficient, using Pearson's product moment correlation method was PASS = 0.90, TMMDT = 0.81 and TMMAT = 0.86. With the obtained coefficients, the researchers deemed the three instruments suitable to be used for the study.

3. Results

Results of the statistical analysis are presented in the following tables:

CBT Group	Mean	Sample	Std. Dev.	DF	Cr	T	P- Value	Remark
Pre-Test	66.42	12	4.03	11	0.18	21.07	0.001	Sig.
Post-Test	37.00	12	3.46					

Table 2: Paired Samples T-Test Showing Procrastination Reduction in CBT Experiment Group

Table 2 shows that the pre-test and post-test scores of students in experimental group who received CBT was 66.42 and 37.00 respectively. The standard deviation of their pre-test is 4.03 and 3.46 for post-test. The table also shows that $df=11$, $cr=0.18$, $t=21.07$ and $P<.001$. This result shows that there is statistically significant difference between the students' pre-test scores and post-test score showing their procrastination reduction. Therefore, hypothesis one which says that "there is no significant difference in the effect of Cognitive Behaviour Therapy (CBT) on procrastination of low achieving students based on

their pre-test, post-test scores on the Procrastination Assessment Scale-Student (PASS)" is rejected based on p value $P < .001$ at a chosen alpha of 0.05.

Variable	Sample	Mean	Std. Dev.	DF	T	P- Value	Remark
Male	7	36.86	3.80	10	0.16	0.88	Not Sig.
Female	5	37.20	3.35				

Table 3: Independent T-Test for the Difference in Procrastination Reduction among Male and Female in CBT

Table 3 shows that among the 7 male students who received CBT their mean score was 36.86 and the 5 females had mean score of 37.20. The standard deviation of male and female was 3.80 and 3.35 respectively. From the table $df=10$, $t=0.16$, $P>.88$. In this case where the p value is greater than the chosen alpha the hypothesis which says that "there is no significant difference in the effect of CBT on procrastination reduction among low achieving male and female students based on their post-test scores on the PASS" was retained. This means that male and female students exposed to CBT had equal effect in their procrastination reduction.

Variable	Sample	Mean	Std. Dev.	df	T	P-value	Remark
Exp CBT	12	37.00	43.46	22	19.23	0.001	Sig.
Control	12	66.17	3.95				

Table 4: Independent T-Test on the Effect of CBT on Academic Procrastination Reduction Among Experimental and Control Groups

Table 4 shows that among the CBT experimental and control groups the mean scores were 37.00 and 66.17 respectively. The standard deviation of those in experimental group was 43.46 and 3.95 for the control group. From the table $df=22$, $t=19.23$, $P<.001$. In this case the p value is less than the chosen alpha of .05 hence the hypothesis which say that "there is no significant difference in procrastination reduction of low achieving students in the CBT experimental group and control groups based on their post-test scores on the PASS was rejected". Therefore, there is a significant difference among students who received CBT and the control group who did not receive any treatment.

TMMAT CBT Group	Mean	Sample	Std. Dev.	DF	Cr	T	P-Value	Remark
Pre-Test	39.17	12	3.59	11	0.25	6.38	0.001	Sig.
Post-Test	51.25	12	6.44					

Table 5: Paired Samples T-Test Showing Improvement of Mathematics Achievement of Students in CBT Experimental Group

Table 5 shows pre-test and post-test mean scores of students in experimental group who received CBT as 39.17 and 51.25 respectively. The standard deviation of their pre-test is 3.59 and 6.44 for post-test. From the table $df=11$, $cr=0.25$, $t=6.38$ and $P<.001$. Therefore, there is a statistically significant difference from the students' pre-test scores and post-test showing their improvement in mathematics achievement. Therefore, the hypothesis which says that "there is no significant difference in mathematics improvement of the low achieving students of the experimental group due to CBT based on their mathematics achievement test (TMMAT) pre-test and post-test scores" was rejected.

4. Discussion of Findings

The statistical analysis of hypothesis one shows that there is a significant difference between the students' pre-test and post-test scores showing their procrastination reduction. Therefore, null hypothesis was rejected and its alternative form which states that there is a significant difference in the effect of Cognitive Behaviour Therapy (CBT) on procrastination of low achieving students based on their pre-test, post-test scores on the Procrastination Assessment Scale-Student (PASS) was accepted. The reduction observed from their pre-test and post-test comparison can only be attributed to the treatment they received. The result shows the effectiveness of CBT therapeutic intervention on procrastination reduction.

This result is in line with that of Ozer, Demir and Farrari (2013) who assessed a short-term group treatment programme using cognitive interventions focused on students. This result is also in harmony with the reports of Ziesat, Rosenthal, and White (1978) who carried out some therapeutic interventions on 56 college students who procrastinated in studying and were given either behavioural self-control training or training in either stimulus control, self-reinforcement, or a combination of the two. Half of these clients used self-punishment; half did not. Half were trained individual and half in groups of four. In terms of reported amount of study time and attitudes toward studying, the findings were that experimental clients improved, whereas control clients did not.

On the other hand, the results of the statistical analysis of hypothesis two shows that the p value ($P > .88$) is greater than the chosen alpha (0.05) hence the null hypothesis which states that there is no significant difference in the effect of CBT on procrastination reduction among low achieving male and female students based on their post-test scores on the PASS was retained. This means that male and female students in the CBT had equal effect in their procrastination reduction. Although there is an apparent lack of research reports that have investigated gender differential effects in responding to any intervention of this nature, related study by Sepehrian and Lotf (2011) has revealed that there was no significant difference among boys and girls as far as the level of academic procrastination is concerned. Also, Ozer, Demir and Ferrari (2009) have also reported that male students report more frequent procrastination on academic tasks than female students.

Contrary to the result of hypothesis two, the result of the statistical test of hypothesis three shows that there is significant difference between students who received CBT and the control group who did not receive any treatment. This shows the effectiveness of CBT on procrastination reduction of the experimental group while the control group had no procrastination reduction at all. This is not surprising as it proves the assumption that CBT involves recognizing unhelpful or destructive patterns of thinking and reacting, then modifying or replacing these with more realistic or helpful ones. This study is consistent with Toker and Avci (2015) who examined the effectiveness of a cognitive-behavioural therapy (CBT) psycho-educational group programme on the academic procrastination behaviours of university students and the persistence of any training effect. This was a quasi-experimental research based on an experimental and control group pre-test post-test and follow-up test model. Twenty-six students participated in the research with 13 each in the experimental and control groups. It was observed that CBT based skill training decreased university students' academic procrastination behaviour and had a long-term effect on the students. Further observation was that CBT was very effective in school setting, both in the secondary and in the university.

Finally, the result of the statistical test of hypothesis four shows that there was a significant difference between the students' pre-test and post-test scores showing their improvement in mathematics achievement. Therefore, null hypothesis four was rejected and its alternative form which states that there is a significant difference in mathematics improvement of low achieving students of the experimental group due to CBT based on their mathematics achievement test (TMMAT) pre-test and post-test scores was accepted. This result is an indication that CBT is effective in improving mathematics achievement among low achieving students.

The result of this study by implication has supported the need of counselling and therapeutic intervention to improve mathematic achievement. This study is in line with the finding of Oundo, Nyaga, Barchok, and Mureithi (2013) who carried out a study to assess counselling needs related to mathematics performance among secondary school students in Maara District in Kenya. The study examined counselling needs regarding attitudes, study methods and test taking skills related to mathematics performance and determined whether statistically significant differences existed between psychological intervention requirements and mathematics counselling needs among the secondary school students. Descriptive survey research design was used for the study. The target population was 12,371 students from the 48 secondary schools in Maara District. Copies of questionnaire were used to obtain the required data.

The study findings indicated that secondary school students had mathematics counselling needs in relation to attitude, study methods and test taking skills for which psychological intervention was necessary. The data analysis results indicated that 53.3% of student participants were female while 46.7% were male. The students' mathematics performance at the primary level examination was fair with the majority constituting 53.9% scoring above the average grade compared to only 10.4% at secondary level examinations. This implies that there exist factors limiting students' performance in mathematics at secondary school examinations and therefore, interventions may mean progress in mathematics achievement for the students.

5. Conclusion

From the findings of this study the researchers then conclude that:

- There is a significant difference in the effect of cognitive behaviour therapy (CBT) on procrastination reduction among low achieving students.
- No gender difference exists as there was no differential effect of CBT on procrastination reduction among low mathematics achieving male and female students.
- There was a significant difference in mathematics improvement of the low achieving students of the CBT experimental group.

The researchers conclude from the findings of the study that CBT is an effective psychotherapeutic intervention that can reduce academic procrastination and improve mathematics achievement among low achieving students in secondary school.

6. Recommendations

In the light of the results of data analysis and conclusion drawn from the result the following recommendations were made:

- Counselling and psychotherapy should be taken very serious in various levels of education in Enugu State and Nigeria in general as a tool to bring back the glory of academic achievement.

- Counsellors in the secondary school should not be given any teaching subjects rather they should concentrate in providing their professional counselling services.
- Teachers in the secondary schools should collaborate with their guidance counsellors in order to help the students achieve their full potentials.

7. References

- i. Anugwara, B. (2013). Reviving reading culture among youths, Enugu Speaker's example. Retrieved from http://www.mydailynewswatcng.com/reviving-reading-cultural-among-youths-enugu-speakers-example/?wmp_switcher=mobil.
- ii. Asikhia, A. (2010). Academic procrastination in mathematics: causes, dangers and implications of counselling for effective learning. *International Education Studies*, 3, (3), 205-210.
- iii. Ekundayo, H.T. (2010). Administering secondary schools in Nigeria for quality output in the 21st century: the principals' challenge. *European Journal of Educational Studies*, 2(3), 187-190.
- iv. Erden, M. & Akgul, S. (2010). Predictive power of math anxiety and perceived social support from teacher for primary students' mathematics achievement. *Journal of Theory and Practice in Education*, 6(1), 3-16.
- v. Folarin, F. (2014). Poor WAEC results: Fallout of falling education standards? Retrieved from: <http://dailyindependentnig.com/2014/08/poor-waec-results-fallout-falling-education-standards>.
- vi. Hofmann, S.G. (2011). *An Introduction to Modern CBT. Psychological Solutions to Mental Health Problems*. Chichester, UK: Wiley-Blackwel.
- vii. Karatas, H. (2015). Correlation among academic procrastination personality traits and academic achievement. *Anthropologist*, 20(12), 243-255.
- viii. Kurumeh, I.M.S. & Chiawa, M.A. (2009). Improving students' interest in solving algebraic word problems using aesthetic value approach. *Research Journal of Mathematics and Statistics* 1(2), 59-64.
- ix. McFarr, L.M. (2013). An update on CBT training guidance for doctoral programs. *Advances in Cognitive Therapy*, 14(1), 9-12.
- x. Odaci, H. (2011). Academic self-efficacy and academic procrastination as predictors of problematic internet use in university students. *Compute. Edu.* 57: 1109-1113.
- xi. Oundo, M.B., Nyage, V.K., Barchok, H.K., & Mureithi, M.M. (2013). Assessment of counselling needs related to mathematics performance among secondary school students in Maara district, Kenya. *American International Journal of Contemporary Research*, 3, 8-20.
- xii. Ozer, B.U., Demir, A. & Ferrari, J.R. (2009). Exploring academic procrastination among Turkish students: possible gender differences in prevalence and reasons. *The Journal of Social Psychology*, 149(2), 241-257.
- xiii. Seo, E.H. (2008). Self-efficacy as a mediator in the relationship between self-oriented perfectionism and academic procrastination, social behaviour and personality: *Int. J.*, 36(6), 753-764.
- xiv. Sepehrian, F., & Lotf, J.J. (2011). The effects of coping styles and gender on academic procrastination among university studies. *Journal of Basic Apply Science Research*. 1(12), 2987-2993.
- xv. Solomon, L.J. & Rothblum, E.D. (1984). Academic procrastination: frequency and cognitive-behavioural correlates. *Journal of Counselling Psychology*, 31, 503-509.
- xvi. Steel, P. (2007). The nature of procrastination: a meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin* 133(1), 65-94.
- xvii. Toker, B. & Avci, R. (2015). Effect of cognitive-behavioural-theory-based skill training on academic procrastination behaviours of university students. *Educational Sciences Theory and Practice* 15(5), 1157-1168.
- xviii. Ziesat, H.A. Rosenthal, T.L., & White, G.M. (1978). Behavioural self-control in treating procrastination of studying. *Psychological reports*. Retrieved from: <http://prx.sagepub.com/content/42/1/59.full.pdf+html>.

Appendix

CBT Guideline used for the Study

Session one: 1. Introductions – Getting to know each other, building the relationship (10 minutes). 2. Discussed the expectation of the therapy and setting the agenda (15 minutes) 3. Devised group rules, set goals and educated the participants about the cognitive behaviour model in connection with the problem of procrastination (20 minutes). 4. Summarized and Assigned homework (10 minutes)

Session two: 1. Revision of previous session (10 minutes). 2. Revision of homework and any issues (10 minutes). 3. Discussion of academic procrastination (15 minutes). 4. Discussed procrastination as a link to low academic achievement (15 minutes). 5. Summarizing and assigning homework (5 minutes)

Session three: 1. Revision of the previous session (5 minutes). 2. Revision of homework and dealing with any issues (5 minutes). 3. Providing information about CBT (15 minutes). 4. Providing information about the cognitive distortions (20 minutes). 5. Summarizing and assigning homework (10 minutes)

Session four: 1. Revision of previous session (10 minutes). 2. Revision of the homework and dealing with any issues (10 minutes). 3. Identifying and challenging automatic thoughts and images (15 minutes). 4. Practicing how to challenge automatic thoughts and images using thought stopping technique (15 minutes). 5. Summarizing and Assign homework (10 minutes)

Session five: 1. Revision of the previous session and homework (10 minutes). 2. Introduction of cognitive restructuring (15 minutes). 3. Some cognitive restructuring techniques were introduced (25 minutes) 4. Summarizing and assigning of homework (5 minutes).

Session six: 1. Revision of the previous session (10 minutes). 2. Revision of the homework and dealing with any issues (10 minutes). 3. Providing information about task avoidance in procrastination and delay (25 minutes). 4. Summarizing and Assign homework (10 minute)

Session seven: 1. Review previous session (5 minutes). 2. Review homework and deal with any issues (10 minutes). 3. Provide an introduction to social skills training e.g assertiveness training (5 minutes). 4. Discussion of social skills (10 minutes) 5. Introduce social skills role play (20 minutes). 6. Summarizing and Assign homework (5 minutes)

Session eight: 1. Revision of the previous session (5 minutes). 2. Revision of homework and dealing with any issues (5 minutes). 3. Continue with social skills role-play (20 minutes). 4. Programme re-cap (20 minutes). 5. Assign homework (5 minutes)

Session nine: 1. Revision of the previous session (5 minutes). 2. Revision of the homework and dealing with any issues (5 minutes). 3. Rational-emotional role play (45 minutes) 4. Summarizing and Assign homework (5 minutes).

Session Ten: 1. Revision of the previous session and homework (10 minutes). 2. Introduce further cognitive restructuring techniques (20 minutes). 3. Introduce and discuss positive beliefs (20 minutes). 4. Summarizing and assigning homework (5 minutes).

Session Eleven: 1. Revision previous session and homework (10 minutes). 2. Introduction of hierarchy of fears (10 minutes). 3. Constructing hierarchy of fears (30 minutes); 4. Summarizing and Assign homework (5 minutes).

Session Twelve: 1. Revision of the previous session and homework (10 minutes). 2. Discussion of behavioural experiments (20 minutes). 3. Session re-cap and explore their thought about termination (20 minutes). 4. Summarizing and Assign homework (5 minutes)

Session Thirteen: 1. Revision of the previous session and homework (10 minutes). 2. Teaching group members to become their own 'therapists' (10 minutes). 3. Administer PASS post-test (30 minutes)

Session Fourteen: 1. Revision of the therapy goals (5 minutes). 2. Administer Teacher Made Mathematics Achievement test (1hour 30 minutes):

Session Fifteen: 1. Feedback and Follow-up session – The therapist asked for feedback to reinforce the collaborative nature of the relationship and to assure that the therapist was on target with the direction of the therapy. The participants narrated what they gained from the therapy sessions. The therapist encouraged them to always all the skills they learnt in the therapy in their daily living, especially to tackle their academic endeavour.

The CBT Techniques used for the therapy include: daily record log with the Triple-Column Technique (TCT), Cost-benefit analysis technique, Cognitive model diagram, Flipchart papers, The TICs-TOC techniques - TICs for Task-Interfering Cognitions and TOCs for Task Oriented Cognition, Assignment of homework, thought stopping technique, mood diary recording sheets, social skills' role play, feedback, cognitive restructuring techniques, and behavioural experiments.

