

RESEARCH ON THE EFFECT OF APPLYING MULTIMEDIA TO THE INSTRUCTION OF RATIONAL EMOTION BEHAVIOR THERAPY FOR MIDDLE SCHOOL STUDENTS' EMOTIONAL CONTROL

Chen-Feng Wu, Pin-Chang Chen and Yu-Tzu Chen

Department of Information Management, Yu Da University of Science and Technology,
Miaoli, Taiwan

ABSTRACT

Emotional and behavioral problems of young people have always been an important issue. Emotions could be changed through learning and maturing. Therefore, the emotions of young people can be changed through counselling courses. This research uses experimental research methods, multimedia education and the Beck Youth Inventories-Second Edition as research tools. The samples of this research are 60 eighth grade students. The teaching experiment investigates the students' effectiveness of immediate and procrastinated emotion counselling after the use of multimedia learning. The research showed that there is no significant difference between the students of the experimental group and the control group in immediate counselling results. On procrastinated emotion counselling, there is a significant effectiveness in depression and anxiety. On emotional stability, the students of experimental group is better than the control group.

KEYWORDS

Multimedia Education, Rational Emotive Behavior Therapy (REBT), Emotional Control.

1. INTRODUCTION

According to the statistic data from Executive Yuan, 2012, suicide ranked 10th in the cause of death among youngsters (age1-14) and second among youth (age15-24) in Taiwan. Suicide has ranked second among youth (age15-24) since 2002. It shows the important issue of the emotions of young people and the value of life and death [1].

Researches of Rational Emotive Behavior Therapy (REBT) have pointed out that it is not the event itself but the views or irrational beliefs of the beholder that affects their moods. There have also been researches showed that there is a certain degree of connection between irrational beliefs and depression, anxiety, negative emotions and deviant behaviors. Some researchers suggest that REBT behavioral therapy could be a way in improving the treatment of irrational beliefs. Comprehensive study also shows that REBT behavioral therapy has a good treatment result in improving irrational beliefs [2].

It is found that the students tend to “know” but not to “do”. It is necessary to combine education with technology for better results. Multimedia education has been a part of the plan of the Department of Education in 2009 and has been brought into junior high schools. The plan is called “Building high quality digital educational environment for elementary and high schools”.

This study incorporated the use of computer technology and multimedia education with REBT behavioral therapy. A short situation film was produced and put onto the website “YouTube”. It is in the hope of combining knowledge and action. So the students' irrational beliefs will be changed and the good result of emotional counselling will be achieved [3].

2. LITERATURE REVIEW

2.1. Rational Emotive Behavior Therapy (REBT)

Rational Emotive Behavior Therapy (REBT), which was developed by psychologist Albert Ellis, postulates that an event itself does not cause impacts on an individual whereas the individual’s perception of the event and the individual’s irrational beliefs do [4,5]. The A-B-C theory is the theoretical essence of REBT. A refers an activating event, B refers to beliefs, and C refers to emotional consequences. When an individual’s perception of an event results in emotional reactions, such irrational beliefs and ideas are the causes of emotional distress. Through D (dispute), the individual changes the irrational ideas, replaces the irrational ideas with appropriate thoughts, or establishes an effective rational philosophy, enters the phase of E (effective), precludes the emotion of self-deprecation, and develops a new F(feeling) in line with the scenario which the individual is in. The A-B-C-D-E-F causality is presented in Figure 1. With a specific framework and implementation procedures, the ABC theories and the DEF steps for disputing an individual’s irrationality in rational emotive behavior therapy can be easily and clearly presented in course materials for students to learn.

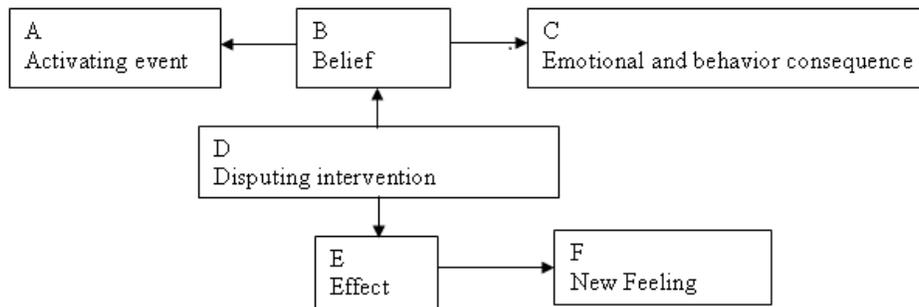


Figure 1. A-B-C-D-E-F Relation Diagram

2.2. The Emotion Development of Teenagers

Delight, anger, sorrow, and happiness, which are expressions of emotions and the process of an individual’s psychological experiences due to internal or external stimuli, are difficult to control and may interfere with one’s life [6]. According to observation and research of psychologists, human beings aged between 0 and 3 years old begin to show diverse emotional development, which is influenced by the interplay of the process of an individual’s maturity and learning [7]. Children at a younger age are more heavily influenced by the maturity factor whereas children’s emotional development is subject to an increasing influence by learning along with the children’s maturity. As such, emotion coaching classes for young people may consider including teaching how to use cognition to influence or change one’s emotions.

2.3. Multimedia Instruction

Multimedia instruction, which refers to teachers integrate multimedia into teaching to arouse students' motivation to learn and enhance students' interest in learning, not only enables teachers to lead students to in-depth exploration, discovery, and leaning, but also enhances students' comprehension and reinforces the effect of transfer of learning [8]. According to the theory of "The Cone of Experience", which was put forward by American audio-visual educationist Professor Edgar Dale, the learning of human beings comes either from direct or indirect experiences. Direct experiences are what we gains through personal experiences whereas indirect experiences are obtained through languages, texts, pictures, or other media activities. Dale drew a pyramid of experiences [9] according to human beings' various types of experiences, which are showed in Figure 2. The pyramid of experiences consists of 10 tiers and three phases. The bottom tiers of the pyramid are "real practices", the middle tiers are "observation", and the top tiers are "intellectual thinking". The closer a tier is to the bottom of the pyramid denotes to more specific experiences and more sensory organs are involved whereas the closer a tier is to the top of the pyramid denotes to more abstract experiences and fewer sensory organs are involved. It can be inferred from Dale's pyramid of experiences that the design of educational media should emphasize on utilizing students' sensory experiences in order to achieve effective teaching.

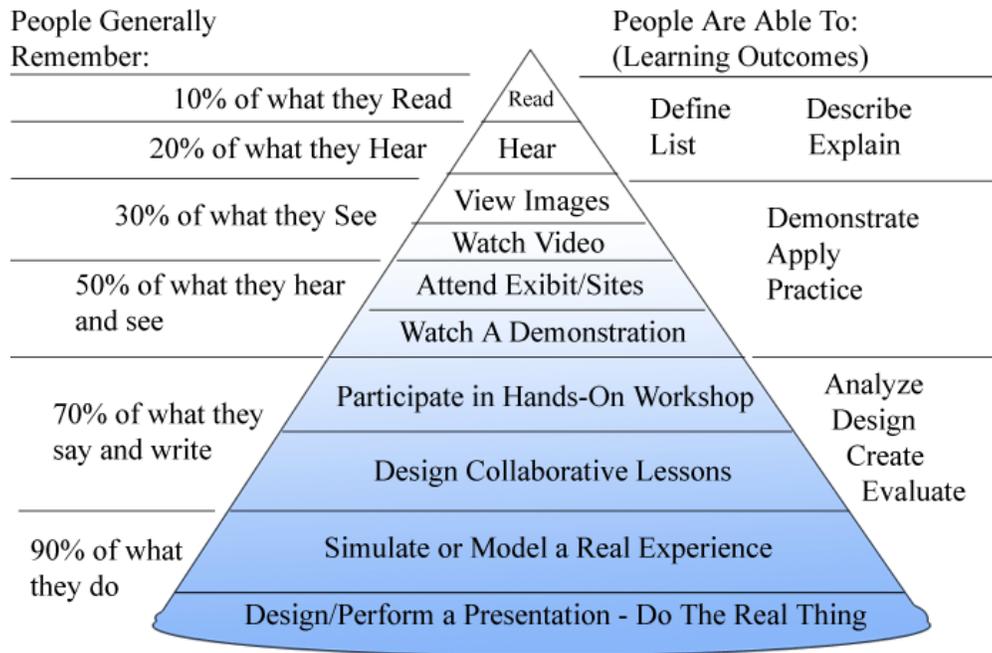


Figure 2. Dale's Cone of Experience

3. RESEARCH METHOD

3.1. Research Design

After deciding on appropriate research methods and procedures as well as collecting and designing relevant teaching materials, the researcher selected two classes out of a total of four grades eight classes taught by the researcher as research participants of this study and divided the selected students into the experimental group and the control group. Students in the experimental group were required to take pretest of "a behavior scale prior to receiving multimedia

instructions” and receive the experimental teaching for 45 minutes per week and for a total of four weeks. At the end of the experimental teaching, students in both groups were required to take a “posttest of the beck youth inventories”. Further, a “follow-up test of the “beck youth inventories” was administered on students in both groups one month after the winter vacation ended, and statistical analyses were performed on the collected data to reach this study’s results.

3.2. Research Structure

The independent variables in this study were “multimedia instruction” and “traditional teaching”, the dependent variables were “the effects of rational emotive behavior therapy on emotion coaching for junior high school students” and the effects of multimedia instructions on the delayed emotions of junior high school students”, and the controlled variables were “teaching content”, “teaching time”, “course teacher” and “students”, as shown in Table 1.

Table 1. Descriptions of Variables

Independent Variable			
Multimedia education		Traditional education	
The instructor made multimedia teaching materials and films. Students were taught to make short films.		Traditional teaching method. Speaking and listening. Learning and studying.	
Dependent Variable			
The effectiveness of emotion counselling with REBT therapy for junior high school students.		The effectiveness of procrastinated emotion counselling with multimedia education.	
Evaluation with the Beck Youth Inventories right after the class.		Evaluation with the Beck Youth Inventories after one month.	
Control Variable			
Teaching Content	Teaching Time	Instructor	Experiment Samples
Topic 4, Book 3, Multi-activities published by Kang Hsuan Educational Publishing Group	45 minutes of counselling class each week. For 4 consistent weeks.	Both groups were led by the author.	Both groups were 8 th grade students of Jaunan Junior High School.

3.3. Research Method

This study adopted a quasi-experimental research design. Due to restrictions on the available time and human resources for this experiment, this study chose grade eight students at Jaunan Junior High School in Miaoli County as the research subjects and assigned students in one class as the experimental group in a non-random manner (30 students in total consisting of 16 male students and 14 female students) to receive rational emotive behavior therapy through multimedia instructions. Students in the other class were in the control group (30 students in total consisting of 17 male students and 13 female students) to receive the rational emotive behavior therapy through “traditional teaching”.

3.4. Experimental Design

This study aims to explore the influence of teaching methods on the effects of rational emotive behavior therapy on emotion coaching for junior high school students. The design of this study is shown in Table 2 and details of the quasi-experimental research design are as follows:

Table 2. Design Mode of Experiment

	Pretest	Experiment	Posttest	Follow-up test
Experimental group	O1	X	O3	O5
Control group	O2		O4	O6

1. Prior to the experiment, students in both groups were requested to take a pretest (O1, O2) of the “rational emotive behavior learning outcomes examination”. Students in the experimental group received multimedia instructions (X) whereas students in the control received traditional teaching.
2. Following the experiment, students in both groups were requested to take a posttest (O3, O4) of the “beck youth inventories”. One month later, students in both groups were requested to take a follow-up test (O5, O6) of the ‘beck youth inventories’.
3. Given that many researchers have proved significant effects of rational emotive behavior therapy on emotion coaching and guidance on other aspects [10,11], no pretest of the beck youth inventories was arranged in this study. The other reason for not having a pretest was the consideration that students might practice questions on the beck youth inventories or have lingering memories of the beck youth inventories if students had been requested to take the pretest, posttest, and follow-up test of the same beck youth inventories within two months’ time. If so, the follow-up test of the beck youth inventories, which was the most valuable for analyses for discussions, would have become pointless. In light of this, this study only arranged one posttest of the “beck youth inventories” to explore different results of emotion coaching due to different teaching methods and one follow-up test of the “beck youth inventories” a month later to follow up and explore different teaching methods’ impacts on the coordination of students’ “behavior” and “knowledge” as well as observe the effects of emotion coaching on students’ delayed emotions in life.

3.5. Research Tools

This study used “the second edition of beck youth inventories” to assess the effectiveness of emotion coaching to the research participants and to follow up the effective of coaching on the research participants’ delayed emotions. BYI-II [12], which is a convenient and effective self-report assessment instrument, has been modified by Taiwanese scholars and a Taiwanese norm was created to make dictions of BYI-II questions suit conditions in Taiwan better. The effectiveness of assessments made by BYI-II is also underpinned by empirical research. BYI-II encompasses five self-report sub-scales, which can be used separately or in conjunction with the others. The Likert four-point scale was used as the formats of answers to questions in the five sub-scales, as shown in Table 3 and Table 4.

Table 3. Self-concept Chart

T Score	Degree
> 55	higher than average
45 - 55	average
40 - 44	lower than average
< 40	low

Table 4. Degree of Depression, Anxiety, Anger and Deviant Behaviors

T Score	Degree
70 +	severe
60 - 69	medium range
55 - 59	slightly over
< 55	normal

3.6. Data Analysis

After data of the pretest and the posttest of the “rational emotive behavior learning outcomes examination” were collected and organized, invalid questions were deleted, valid questions were coded, students’ answers were keyed in to the Chinese version of SPSS 18.0 statistical analysis software, hypotheses were made, and the following statistical analyses were performed as follows:

1. Descriptive statistics was used describe and analyze the sample data, understand the distribution of the means and the standard deviation of the sample data’s individual attribute variables and each assessed aspect along with other basic statistical information.
2. Testing the significant differences between two means: independent sample test, paired-samples t-test.
 - (1) The independent sample test was adopted to analyze and compare whether students in two groups demonstrated significant differences on the posttest of the beck youth inventories after students in the experimental group received teaching through multimedia instructions and students in the control group received teaching through the traditional teaching method.
 - (2) The independent sample test was adopted to analyze and compare whether students in two groups demonstrated significant differences at the follow-up test of the beck youth inventories after students in the experimental group received teaching through multimedia instructions and students in the control group received teaching through the traditional teaching method.
 - (3) The paired-samples t-test was adopted o analyze and compare whether there were significant differences between the experimental group students’ performances on the pretest and the posttest of the beck youth inventories after receiving teaching in the form of multimedia instructions. In addition, the paired-samples t-test was adopted to analyze and compare whether there were significant differences between the control group students’ performances on the pretest and the posttest of the back youth inventories after receiving teaching in the form of traditional teaching.

3. RESEARCH RESULTS AND DISCUSSION

This section analyzes students’ answers on the “beck youth inventories”. The experimental group and the control group both consisted of 30 students and both yielded 30 valid samples and zero invalid samples. The analysis focused on validating the significant differences of the instantaneousness of students’ emotions and the effectiveness of follow-up coaching on students in the two groups which received different teaching methods.

1. Validating the significantly different effects of emotion coaching on the instantaneousness of students’ emotions through providing rational emotive behavior coaching in different teaching methods
The independent sample test was performed on each sub-scale of emotions to validate the effects of emotion coaching on the instantaneousness of students’ emotions after the experiment. Results of the independent sample test presented in Table 5 revealed that students’ performance on all subscales including self-concept, anxiety, depression, anger, and rule-breaking behavior did not a level of significance, implying that emotion coaching takes time. Therefore, no big differences were observed on emotion coaching’s influence on the instantaneousness of students’ emotions. Nevertheless, comparing the means of the two group’s statistical data revealed better emotional stability of students in the experimental group than students in the control group after the teaching.

Table 5. Statistic Chart of Immediate Emotion Counselling

Group	Numbers	Average	Standard Deviation	Standard Deviation of Average	
Self-concept 1	Control Group	30	49.93	8.578	1.566
	Experimental Group	30	52.13	7.851	1.433
Anxiety 1	Control Group	30	49.70	9.285	1.695
	Experimental Group	30	48.40	8.637	1.577
Depression 1	Control Group	30	49.10	7.480	1.366
	Experimental Group	30	46.03	11.458	2.092
Anger 1	Control Group	30	46.27	8.493	1.551
	Experimental Group	30	45.93	10.265	1.874
Deviant Behaviors1	Control Group	30	46.87	7.606	1.389
	Experimental Group	30	45.57	10.982	2.005

- Validating the significantly different effects of rational emotive behavior coaching for students one month later

One month after the experimental teaching, students in both groups were requested to take the follow-up test of the beck youth inventories, and the independent sample test was used to compare whether there were significant differences between emotions of students in the two groups. As shown in Table 6, students in the two aspects showed significant difference in the depression aspect, meaning that results of the experiment disclosed significant difference in students' emotion of depression. In addition, comparing the means of the two group's statistical data revealed that students in the experimental group showed better stability in all emotions than students in the control group.

Table 6. Statistic Chart of Follow-up Emotion Counselling

	Group	Numbers	Average	Standard Deviation	Standard Deviation of Average
Self-concept Follow-up	Control Group	30	49.50	6.735	1.230
	Experimental Group	30	52.38	8.724	1.620
Anxiety Follow-up	Control Group	30	48.33	9.267	1.692
	Experimental Group	30	44.03	8.248	1.532
Depression Follow-up	Control Group	30	48.70*	9.322	1.702
	Experimental Group	30	42.79*	7.404	1.375
Anger Follow-up	Control Group	30	45.27	9.262	1.691
	Experimental Group	30	42.31	8.221	1.527
Deviant Behaviors Follow-up	Control Group	30	46.60	7.682	1.402
	Experimental Group	30	42.69	9.806	1.821

- Testing the significant difference between students' performances on the posttest and the follow-up test

One month after the end of the experimental teaching, we conducted pairwise comparison of corresponding means in the posttest and the follow-up test of the beck youth inventories and compared the paired-sample t-test of the two tests. It can be observed in Table 7 that emotion coaching had significant effects on the delayed anxiety emotion of students in both the experimental group and the control group. Emotion coaching had significant effects on the delayed depression emotion of students in the experimental group. Overall, students in the experimental groups showed more stable results in delayed emotions than students in the control group.

Table 7. Sample Verification in Pairs

Group 1 Control Group 2 Experimental Group	Average	Standard Deviation	Difference of Variable in Pairs								
			Average	Stand ard Devia tion	Stand ard Deviati on of Average	95% Confidence interval		t	Degree of Freedo m	Significance (Two-tailed Test)	
						Low confiden ce Limit	High confide nce Limit				
Pair 1	Self-concept 1- Self-concept Follow-up 1	51.03 50.90	51.03 50.90	.133	6.971	.900	-2.302	1.934	.148	29	.883
Pair 2	Anxiety Follow- up 1- Anxiety 1	46.33 49.05	46.33 49.05	-2.717	9.143	1.180	-1.215	-.355	-2.302	29	.025*
Pair 3	Depression Follow-up 1- Depression 1	46.10 47.57	46.10 47.57	-1.467	9.353	1.207	-1.720	.949	-1.215	29	.229
Pair 4	Anger Follow- up 1 Anger 1	43.93 46.10	43.93 46.10	-2.167	9.755	1.259	-1.191	.353	-1.720	29	.091
Pair 5	Deviant Behaviors Follow-up 1 Deviant Behaviors 1	44.77 46.22	44.77 46.22	-1.450	9.430	1.217	-.154	.986	-1.191	29	.238
Pair 6	Self-concept 2- Self-concept Follow-up 2	52.13 52.30	52.13 52.30	-.167	5.919	1.081	-2.739	2.044	-.154	29	.879
Pair 7	Anxiety Follow- up 2- Anxiety 2	44.33 48.40	44.33 48.40	-4.067	8.132	1.485	-2.684	-1.030	-2.739	29	.010*
Pair 8	Depression Follow-up 2- Depression 2	42.97 47.47	42.97 47.47	-4.500	9.183	1.677	-1.851	-1.071	-2.684	29	.012*
Pair 9	Anger Follow- up 2- Anger 2	42.60 45.93	42.60 45.93	-3.333	9.862	1.801	-1.342	.349	-1.851	29	.074
Pair 10	Deviant Behaviors Follow-up 2	42.93	42.93	-2.633	10.749	1.963	-6.647	1.381	-1.342	29	.190

4. CONCLUSION

After data analysis, it showed that there is no significant difference between the students of the experimental group and the control group in immediate counselling results. However, the average score of the experimental group is higher than the control group in emotional stability. On the other hand, there is a big difference in procrastinated emotion counselling of depression. And

again, the average score of the experimental group is higher than the control group in emotional stability. That means there is effectiveness in using multimedia in REBT behavior therapy for junior high school students when working on procrastinated emotion counselling of depression. If we check the post-test and follow-up-test of procrastinated emotion counselling, we can find significant effectiveness of the control group in anxiety counselling. For the experimental group, there is a significant effectiveness in procrastinated emotion counselling of depression and anxiety. In conclusion, the experiment is helpful in anxiety and depression counselling.

REFERENCES

- [1] Department of Statistics, Ministry of Health and Welfare, (2013) The 2012 Statistical Abstract of Causes of Deaths. Retrieved on July 10, 2013, from: <http://www.doh.gov.tw/statistic/Annual Bulletin of Statistics /101.htm>.
- [2] Ellis, A. & MacLaren, C., (2002) *Rational Emotive Behavior Therapy*. Taipei: Living Psychology Publisher.
- [3] Ministry of Education, (2013) The Equal and High Quality Digital Learning Platform of the Ministry of Education, Retrieved on July 15, 2013, from: <http://plan3.erp.moe.gov.tw/index.php>.
- [4] Chen, C.F., (2005) "The Effects of Rational-Emotive Group Therapy on Improving Irrational Beliefs and Depression Symptoms of OPD Depression Patients", Master Thesis, Department of Nursing, Taipei Medical University.
- [5] Lu, Y.J., (2004) "The Relationship among Irrational Beliefs, Anxiety and Depression of the Behaviour Disturbed Junior High Student in Tainan City", *Counseling Psychology and Rehabilitation Counseling*, National Kaohsiung Normal University.
- [6] Beck, J.S., Beck, A.T., Lolly, J.B. & Steer, R.A., (2008) *Beck Youth Inventories, 2nd ed.*, Taipei: Chinese Behavioral Science Corporation.
- [7] Chen, C.L. & Kung, J.F., (2001) *Infant and Child Development and Conservation (II)*, Taipei: Chi Ying Culture.
- [8] Muthukrishna, N. & Borkowski, J.G., (1995) "How Learning Contexts Facilitate Strategy Transfer", *Applied Cognitive Psychology*, Vol. 9, pp. 425-446.
- [9] Chang, H.T., Chu, T.K. & Wu, C.C., (2004) *Educational Media*, Taipei: Wu Nan Books.
- [10] Wu, S.L., (1990) "A Study of Teenagers' Irrational Beliefs and Relevant Factors in Our Country", Master Thesis, Graduate Institute of Educational Administration and Policy, National Cheng-chi University.
- [11] Kuo, T.C., (2001) "The Study of the Relationship between Irrational Beliefs, Internal-External Locus of Control, and Angry Emotion of Teenagers who Commit Crimes", *Counseling Psychology and Rehabilitation Counseling*, National Kaohsiung Normal University.
- [12] Wu, M.L., (2009) *The Practice of Quantitative Analysis of Questionnaire Data*, Taipei: Wu Nan Books.