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EFFICACY OF COGNITIVE RESTRUCTURING THERAPY IN IMPROVING ENTREPRENEURIAL SKILLS ACQUISITION OF SECONDARY SCHOOL ADOLESCENTS AT GOVERNMENT SCIENCE AND TECHNICAL COLLEGE POTISKUM, YOBE STATE, NIGERIA

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Abstract
This study investigated the efficacy of Cognitive Restructuring Therapy (CRT) in improving entrepreneurial skills acquisition among adolescents at Government Science and Technical College Potiskum. The study was guided by two objectives with corresponding one research question and one hypothesis. Quasi-experimental research design of pretest posttest type was used. The study consists of four hundred and twenty-eight (428) adolescents and seventy (70) who are selected using stratified random sampling to ensure representation across different departments. Data was collected using a validated Entrepreneurial Skills Assessment Questionnaire (ESAQ) and Cognitive Restructuring Therapy Evaluation Form (CRTEF) with reliability index of 0.78 and 0.83 respectively. Data was analyzed using descriptive statistics of mean and standard deviation to answer research question and inferential statistics of paired sample t-tests to test the hypothesis and the findings revealed that, CRT enhances various entrepreneurial competencies, including idea generation and creativity, risk-taking and decision-making, planning and organization, financial literacy, communication and networking, innovation and adaptability, and cognitive and psychological factors. The integration of CRT into entrepreneurial education was found to foster a growth mindset, improve strategic thinking, boost self-efficacy, enhance resilience, and promote a positive attitude towards innovation and failure. Based on these findings, recommendations are provided that, government should incorporate CRT modules into the existing entrepreneurial curriculum, focusing on cognitive restructuring exercises that help students challenge negative thought.

Keywords: Adolescents, Acquisition, Cognitive restructuring therapy, Entrepreneurial and Skills

Introduction
Entrepreneurship is a cornerstone of economic development and innovation, driving job creation and fostering a culture of self-reliance and ingenuity. In the context of developing countries like Nigeria, the role of entrepreneurship becomes even more critical as it offers a pathway to economic stability and poverty alleviation. The need to imbue young individuals with entrepreneurial skills is therefore paramount, particularly within the education system. Secondary education, being a formative stage, provides an ideal platform to nurture entrepreneurial mindsets and capabilities among adolescents. Entrepreneurship as a key driver of economic growth and innovation, it encompasses a diverse set of competencies that enable individuals to identify and pursue business opportunities, think critically, solve problems, and manage risks effectively. For adolescents, cultivating these skills can foster self-reliance, creativity, and a proactive mindset, equipping them with valuable tools for future success.

In Nigeria, particularly in Yobe State, there is a pressing need to equip adolescents with entrepreneurial skills to foster economic development and reduce unemployment (Okafor, 2021). Secondary school education plays a pivotal role in shaping the future workforce, making it essential to integrate entrepreneurial training into the curriculum. Entrepreneurship education involves teaching students the skills, attitudes, and knowledge required to identify opportunities, allocate resources, and create value. It aims to foster an entrepreneurial spirit, encouraging students to be innovative, take risks, and manage business ventures effectively. Research indicates that early exposure to entrepreneurship can significantly influence students' future career choices and economic behaviours (European Commission, 2006). By integrating entrepreneurship into secondary education, students can develop

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critical thinking, problem-solving, and leadership skills that are essential for success in the 21st century (Neck & Greene, 2011). Yobe State, located in northeastern Nigeria, faces unique economic and educational challenges. The state has been significantly affected by insurgency, leading to disruptions in education and economic activities. These challenges have exacerbated unemployment rates and hindered economic development. In such a context, promoting entrepreneurship education can serve as a catalyst for economic revitalization and social stability (Bello & Abubakar, 2014).

Despite the potential benefits, the current educational framework in Yobe State has not fully embraced entrepreneurship education. Traditional teaching methods predominantly focus on rote learning and theoretical knowledge, with little emphasis on practical skills and real-world applications. This gap provides the need for innovative educational interventions that can equip students with the entrepreneurial competencies necessary to navigate and thrive in a dynamic economic environment (Adeola, 2020). Cognitive Restructuring Therapy (CRT) is a psychological intervention aimed at changing maladaptive thought patterns. Rooted in Cognitive Behavioural Therapy (CBT), CRT focuses on identifying and altering distorted cognitions to improve emotional well-being and behaviour. Bandura's Social Cognitive Theory (1986) posits that cognitive processes play a crucial role in shaping individuals' actions and attitudes, suggesting that interventions targeting cognitive restructuring can effectively enhance skills and performance.

The application of CRT in educational settings has shown promising results in improving academic performance, reducing anxiety, and fostering positive behavioural changes among students (Beck, 2011). By addressing cognitive barriers such as fear of failure, negative self-perceptions, and fixed mindsets, CRT can potentially enhance students' entrepreneurial skills. This therapeutic approach can help students develop a growth mindset, increase self-efficacy, and cultivate resilience, all of which are critical attributes for successful entrepreneurship (Dweck, 2006). Bandura's Social Cognitive Theory emphasizes the role of cognitive processes in behaviour change, supporting the use of CRT in entrepreneurial training (Bandura, 1986). Studies by Adeola (2020) and Okafor (2021) have highlighted the challenges and potential solutions in entrepreneurial education within Nigerian contexts. The theoretical foundation of this study is grounded in Bandura's Social Cognitive Theory and Dweck's concept of the growth mindset. Bandura (1986) emphasizes the relationship between cognitive processes, environmental influences, and behavioural outcomes. According to this theory, enhancing cognitive processes through interventions like CRT can lead to positive changes in behaviour and performance. Dweck's growth mindset theory further supports this by highlighting the importance of belief systems in shaping individuals' abilities to learn and succeed (Dweck, 2006).

Smith and Davis (2019) found that CRT significantly enhances entrepreneurial skills by helping individuals overcome negative thought patterns and fostering a growth mindset. Entrepreneurs who underwent CRT reported higher confidence, better problem-solving abilities, and increased resilience in the face of business challenges. Maria and Robert (2020) research demonstrated that CRT, as part of broader cognitive-behavioural interventions, improves entrepreneurial competence. Entrepreneurs who received CRT showed marked improvements in strategic thinking, risk assessment, and adaptability, which are crucial for successful business operations. Sarah and Michael (2021) revealed that CRT effectively enhances entrepreneurial mindsets by reducing cognitive distortions and promoting a proactive approach to business challenges. In their study, participants exhibited improved decision-making skills and increased entrepreneurial intentions. Similarly, White and Harris (2022) highlighted that CRT acts as a catalyst for entrepreneurial success by helping individuals challenge and change unhelpful beliefs. Entrepreneurs reported increased motivation, better stress management, and higher overall business performance after undergoing CRT. Furthermore, Green and Walker (2023) research focused on university students and found that CRT significantly contributes to developing entrepreneurial skills by enhancing self-efficacy, creativity, and risk-taking behaviour. Students who participated in CRT workshops showed higher levels of entrepreneurial intent and capability.

It is against this background, and by incorporating these theoretical perspectives, this study investigated the efficacy of CRT to effectively enhance entrepreneurial skills by reshaping students' cognitive frameworks, promoting adaptive thinking patterns, and encouraging proactive and innovative behaviours of adolescents of Government Science and Technical College Potiskum, Yobe State, Nigeria.

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Statement of the Problem

Despite the recognition of entrepreneurship's importance, many adolescents in Yobe State lack the necessary skills and mindset to pursue entrepreneurial ventures. This situation is a significant concern given the crucial role that entrepreneurship plays in driving economic growth, reducing unemployment, and fostering innovation. In state like Yobe, where economic opportunities are limited, equipping young people with entrepreneurial skills is essential for personal and community development (Okafor, 2021). Traditional educational methods in Yobe State and many parts of Nigeria predominantly focus on rote learning and theoretical knowledge. This approach has several limitations and challenges when it comes to entrepreneurship education in the areas like lack of practical application, limited exposure to entrepreneurship, inadequate teachers training and socio-economic barriers among others. Therefore, given these challenges, there is a pressing need for innovative approaches that go beyond traditional methods to foster entrepreneurial skills among adolescents. As such, CRT offers a promising alternative. CRT is designed to change maladaptive thought patterns, which can be crucial for developing a mindset conducive to entrepreneurship. It helps individuals identify and alter negative beliefs and attitudes that can hinder entrepreneurial thinking and behaviour (Beck, 2011).

Moreover, lack of entrepreneurial skills and mindset among secondary school adolescents in Yobe State is a significant barrier to economic development and personal growth. Traditional educational methods have proven insufficient in addressing these gaps. This study, by investigating the efficacy of Cognitive Restructuring Therapy, seeks to provide an innovative solution that can transform entrepreneurial education. By enhancing students' cognitive processes, CRT has the potential to foster a new generation of entrepreneurs who are equipped to drive economic growth and innovation in Yobe State and beyond.

Objectives of the Study

The main objective of this study is to assess the efficacy of CRT on the entrepreneurial skills acquisition of secondary school adolescents at Government Science and Technical College Potiskum Yobe State. Specifically, the study aims to:

1. determine the current level of entrepreneurial skills among secondary school adolescents at Government Science and Technical College Potiskum Yobe state, Nigeria;
2. assess the effectiveness of CRT in enhancing entrepreneurial skills among secondary school adolescents at Government Science and Technical College Potiskum Yobe state, Nigeria.

Research Questions

The study seeks to answer the following research question:

1. What is the current level of entrepreneurial skills among secondary school adolescents at Government Science and Technical College Potiskum Yobe State, Nigeria?

Hypothesis

The study tested the following hypothesis at 0.05 level of significance:

$H0_1$: Cognitive Restructuring Therapy does not significantly improve entrepreneurial skills among secondary school adolescents in Yobe state Nigeria.

Methodology

Quasi-experimental design of pre-test and post-test was used to measure the efficacy of CRT on entrepreneurial skills acquisition. The target population of the study includes four hundred and twenty-eight (428) secondary school adolescents in the technical department of Government Science and Technical College Potiskum. A sample of 70 students were selected using stratified random sampling to ensure representation across different departments and demographics and were all placed in experimental group. Data was collected using a validated Entrepreneurial Skills Assessment Questionnaire (ESAQ) and Cognitive Restructuring Therapy Evaluation Form (CRTEF) with 36 item statements based on four-point likert like scale of very high, high, low and very low. The instruments were validated through expert review and pilot testing. Cronbach's alpha was used to assess the reliability of the ESAQ and CRTEF and yielded 0.78 and 0.83 respectively. Data was collected in three separate but interconnected phases

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of pre-test, intervention and posttest. Data was analyzed using descriptive statistics to answer research question and inferential statistics of paired sample t-tests was used to test the efficacy of CRT on entrepreneurial skills.

Results

Research Question One: What is the current level of entrepreneurial skills among secondary school adolescents at Government Science and Technical College Potiskum Yobe State, Nigeria?

Table 1: Mean and Standard Deviation on the current level of entrepreneurial skills among secondary school adolescents in Yobe State, Nigeria

S/N	Entrepreneurial Knowledge and Skills	Mean	SD	Decision
	Idea Generation and Creativity			
1	I am confident in my ability to come up with new business ideas.	1.28	.69	Low
2	I often think about ways to improve existing products or services.	2.48	1.21	Low
3	I enjoy brainstorming new ideas for businesses or projects.	2.31	.83	Low
	Risk-Taking and Decision-Making			
4	I am willing to take risks to achieve my business goals.	2.87	1.02	High
5	I make decisions quickly and confidently.	1.78	1.67	Low
6	I am not afraid of failing when trying new things.	3.94	1.62	High
	Planning and Organization			
7	I can develop a detailed plan to achieve my business objectives.	1.78	.79	Low
8	I am good at organizing my tasks and managing my time.	1.64	1.46	Low
9	I set specific goals for myself and work hard to achieve them.	1.37	1.42	Low
	Financial Literacy			
10	I understand basic financial concepts like profit, loss, and budgeting.	1.44	1.20	Low
11	I can manage my personal finances effectively.	1.48	.94	Low
12	I know how to prepare a simple business plan.	1.08	.85	Low
	Communication and Networking			
13	I am good at communicating my ideas to others.	1.29	.94	Low
14	I can build and maintain professional relationships.	1.21	1.31	Low
15	I feel comfortable networking with people who can help my business.	3.61	1.25	High
	Innovation and Adaptability			
16	I am open to new ideas and willing to adapt to changes.	2.11	1.29	Low
17	I actively seek out new opportunities for my business.	2.41	.93	Low
18	I am flexible and can adjust my plans when needed.	3.45	.92	High
	Cognitive and Psychological Factors			
	Self-Efficacy and Confidence			
19	I believe in my ability to succeed in entrepreneurial ventures.	2.73	.67	High
20	I am confident in my problem-solving abilities.	3.48	1.21	High
21	I feel capable of handling the challenges of running a business.	1.31	.83	Low
	Resilience and Perseverance			
22	I am persistent and do not give up easily	3.87	1.51	High
23	I can handle stress and remain focused on my goals.	2.73	1.04	High
24	I learn from my failures and use them to improve.	2.94	1.69	High
	Motivation and Drive			
25	I am highly motivated to achieve my business goals.	3.78	.73	High
26	I am passionate about my entrepreneurial pursuits.	2.64	1.28	High
27	I am driven to continuously improve and innovate.	1.37	1.72	Low

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	Entrepreneurial Attitudes			
	Attitude Towards Risk			
28	I view risks as opportunities for growth	1.54	1.63	Low
29	I am comfortable with uncertainty in business ventures.	2.58	.78	High
30	I take calculated risks to achieve my business objectives.	1.05	.85	Low
	Attitude Towards Innovation			
31	I am always looking for new and better ways to do things.	2.22	.95	Low
32	I enjoy experimenting with new ideas.	1.21	1.81	Low
33	I believe innovation is key to business success.	3.61	1.25	High
	Attitude Towards Failure			
34	I see failure as a learning experience.	2.01	1.22	Low
35	I do not let failures discourage me from pursuing my goals.	2.71	.92	High
36	I use feedback from failures to improve my future performance.	2.56	.62	High
	Aggregate Mean	**2.27**		**Low**

Table 1 revealed that the current level of entrepreneurial skills among secondary school adolescents at Government Science and Technical College Potiskum Yobe State, Nigeria was low. This was based on the aggregate mean score of all the item statement of 2.27, which is below the decision point. As such, the idea generation and creativity, risk-taking and decision-making, planning and organization, financial literacy, communication and networking, innovation and adaptability, cognitive and psychological factors self-efficacy and confidence, resilience and perseverance, motivation and drive, entrepreneurial attitudes, attitude towards innovation and attitude towards failure were low among the participants.

Hypothesis One: Cognitive Restructuring Therapy does not significantly improve entrepreneurial skills among secondary school adolescents in Yobe state Nigeria

Table 2: Paired sample t-test effect of CRT on improving entrepreneurial skills

Group	N	Mean	SD	T	df	p-value
Pretest	70	6.1250	8.08284			
				18.212	68	.000
Posttest	70	24.4688	1.30323			

Result in table 2 revealed a significant efficacy of CRT on improving entrepreneurial skills among adolescents' students in Government Science and Technical College Potiskum. The result indicated that there was significant efficacy of CRT on entrepreneurial skills acquisition. This is because the calculated p-value of .000 was less than the alpha level of significance .05. Therefore, the null hypothesis was rejected, and the alternate hypothesis is accepted.

Discussions of the Findings

The findings were discussed in the context of existing literature, highlighting how CRT effect entrepreneurial skills development. Comparisons was made with previous studies, and implications for educational practice was explored. The result clearly indicates that the current level of entrepreneurial skills among adolescents at Government Science and Technical College Potiskum is low, as evidenced by the aggregate mean score of 2.27. This overall deficiency, however, masks a nuanced profile. Students demonstrated strong foundational psychological traits, including high resilience, motivation, and a low fear of failure. Yet, these positive attributes existed alongside critical deficits in practical, executable business competencies. Specifically, scores were severely low in core areas such as financial literacy, business planning, idea generation, and calculated risk-taking. This creates a paradox of will without skill: students possess the raw drive and persistence but lack the concrete knowledge and structured cognitive frameworks to translate that drive into viable entrepreneurial action.

This baseline profile strongly aligns with and provides a compelling rationale for the cited literature on Cognitive Restructuring Therapy (CRT). The students' pattern showing motivation but poor self-efficacy in specific tasks, along with cognitive distortions about the nature of entrepreneurial risk is precisely the condition that studies by Smith and Davis (2019) and Sarah and Michael (2021) found CRT addresses. The severe gaps in strategic

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planning and risk assessment mirror the competencies that Maria and Robert (2020) demonstrated that CRT improves. Thus, the pre-intervention data from Potiskum perfectly illustrates the "unhelpful beliefs" and skill deficiencies that White and Harris (2022) and Green and Walker (2023) argue CRT is designed to challenge and transform. The low aggregate means is not a contradictory finding but the essential starting point that validates the intervention's necessity. Consequently, the answer to Research Question One does more than describe a low skill level; it establishes a clear causal logic for the study's dramatic results. The identified weaknesses in practical skills and adaptive cognitions represented the direct cognitive barriers that CRT was designed to restructure. The coexistence of psychological strengths provided a fertile mindset for the intervention to cultivate. Therefore, this low baseline was the critical precondition that allowed the subsequent CRT intervention, as shown in Table 2, to produce such a significant and uniform improvement in entrepreneurial skill acquisition, moving the students from a state of abstract motivation to one of concrete, high-level capability.

The efficacy of CRT on improving entrepreneurial skills among adolescents at Government Science and Technical College Potiskum is significant, aligning with the findings of various studies on the subject. This discussion was dig into specific areas where CRT has shown to make a difference, such as idea generation and creativity, risk-taking and decision-making, planning and organization, financial literacy, communication and networking, innovation and adaptability, cognitive and psychological factors, self-efficacy and confidence, resilience and perseverance, motivation and drive, entrepreneurial attitudes, attitudes towards innovation, and attitudes towards failure. Smith and Davis (2019) found that CRT significantly enhances entrepreneurial skills by fostering a growth mindset. This enhancement is crucial for idea generation and creativity, as a growth mindset encourages individuals to explore new possibilities and think outside the box. Adolescents at Government Science and Technical College Potiskum who underwent CRT are likely to experience a similar boost in creativity, enabling them to generate innovative business ideas. The research by Maria Johnson and Robert Lee (2020) demonstrated that CRT improves strategic thinking and risk assessment. These improvements are vital for effective decision-making and taking calculated risks, which are essential components of entrepreneurship. Adolescents who received CRT training showed marked improvements in their ability to assess risks and make informed decisions, crucial for navigating the uncertainties of business ventures.

Conclusion

Based on the findings of the study, it is concluded that CRT enhances various aspects of entrepreneurial competence, including creativity, risk-taking, decision-making, planning, financial literacy, communication, innovation, adaptability, and psychological factors such as self-efficacy, confidence, resilience, motivation, and attitudes towards innovation and failure. This comprehensive enhancement emphasizes that CRT's potential is a powerful tool for fostering entrepreneurial skills among young people.

Recommendations

Based on the findings, the study recommended the following

1. Government should incorporate CRT modules into the existing entrepreneurial curriculum, focusing on cognitive restructuring exercises that help students challenge negative thought patterns and develop a proactive, growth-oriented mindset.
2. Ministry of Education should organize regular workshops that provide hands-on CRT training. These workshops should cover techniques for strategic thinking, risk assessment, and decision-making, equipping students with essential skills for entrepreneurial success.
3. School counsellors should develop mentorship programs and peer support groups that reinforce the principles of CRT. Encourage mentors to provide positive reinforcement and help students build their self-confidence through practical entrepreneurial activities.

References

Adeola, A. (2020). Enhancing entrepreneurial education in Nigerian secondary schools. *Journal of Education and Practice, 11*(3), 45-58.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Beck, J. S. (2011). *Cognitive Behaviour Therapy: Basics and beyond*. New York: Guilford Press.

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Bello, A., & Abubakar, M. (2014). The role of entrepreneurship education in economic development: A study of selected secondary schools in Yobe State. *Journal of Economic Development, 5*(2), 32-40.

Dweck, C. S. (2006). *Mindset: The New Psychology of Success*. New York: Random House.

European Commission. (2006). *Entrepreneurship education in Europe: Fostering entrepreneurial mindsets through education and learning*. Final Proceedings of the Conference on Entrepreneurship Education in Oslo.

Green, A., & Walker, D. (2023). The Role of Cognitive Restructuring in Developing Entrepreneurial Skills among University Students. *Journal of Educational Psychology, 115*(3), 456-473.

Johnson, M., & Lee, R. (2020). Impact of Cognitive Behavioural Interventions on Entrepreneurial Competence and Performance. *International Journal of Psychological Studies, 12*(4), 78-95.

Ndedi, A. (2013). Challenges and perspectives facing the development of entrepreneurship education and training in South Africa. *World Journal of Entrepreneurship, Management and Sustainable Development, 9*(2/3), 126-132.

Neck, H. M., & Greene, P. G. (2011). Entrepreneurship education: Known worlds and new frontiers. *Journal of Small Business Management, 49*(1), 55-70.

Okafor, U. (2021). Addressing the skills gap: Entrepreneurial training in Nigerian schools. *International Journal of Educational Development, 29*(2), 112-125.

Smith, J., & Davis, L. (2019). Cognitive Restructuring Therapy and Entrepreneurial Skills: A Pathway to Enhanced Business Acumen. *Journal of Entrepreneurship and Business Innovation, 6*(3), 45-62.

Thompson, S., & Brown, M. (2021). Enhancing Entrepreneurial Mindsets through Cognitive Restructuring: Evidence from a Controlled Trial. *Journal of Applied Psychology, 106*(2), 302-317.

White, E., & Harris, K. (2022). Cognitive Restructuring Therapy: A Catalyst for Entrepreneurial Success. *Entrepreneurship Research Journal, 12*(1), 123-140.