

Enhancement of Critical Thinking Skills of Vocational and Adult Education Students for Entrepreneurship Development in Nigeria

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Abstract

Business and occupations are becoming more reliant on cognitive-capacity of workers who are well grounded in critical thinking skills. This study is, therefore, focused on the enhancement of critical thinking skills of vocational and adult education students for entrepreneurship development in Nigeria. Two research questions and two hypotheses guided the study. Four hundred and eighteen lecturers in vocational and adult education programmes in universities in South-Eastern Nigeria made up the population for the study. Descriptive survey research design was adopted for the study while 32-item structured questionnaire and focus group discussion were used for data collection. The questionnaire was face-validated by experts. Cronbach Alpha reliability technique was used to ascertain the internal consistency of the questionnaire which yielded a coefficient of 0.78. The data collected with the 418 copies of questionnaire administered and returned were analysed using mean and standard deviation to answer the research questions, while t-test statistic was used to test the null hypothesis at 0.05 level of significance. It was found that the ability to analyse, evaluate and challenge assumptions, information and opposing point of view are essential critical thinking skills required by students. The study also identified many strategies for enhancing critical thinking skills of students to include: debate and group discussion; solving numerical problems and puzzles, among others. Based on the findings of the study, the researchers recommended that capacity-building programmes should be organized regularly for lecturers for them to teach students critical thinking skills effectively.

Key words: Entrepreneurship, Critical Thinking Skills, Education, Vocational and Adult Education.

Introduction

Entrepreneurship is the economic force that is currently developing countries of the world. Entrepreneurship is an employment strategy that can lead to economic self sufficiency of an individual, a community and a nation. Entrepreneurship is self satisfying, self rewarding and self reliant focusing on man's ability to diversify his ideas and brainstorming in order to solve his problems. UNESCO (2000) described entrepreneurship as the ability and willingness of an individual to seek investment opportunity, establish and run an enterprise successfully by performing all the business functions related to a product or service. Entrepreneurship is the resourcefulness and the opportunity to critically address economic, social and environmental problems in sustainable basis. Many authors have defined entrepreneurship in different ways as: a force that mobilizes other resources to meet unmet market demands (Jones and Sakong, 1980); the ability to create and build something from practically nothing (Timmons, in Sherief, 2005), and the process of creating value by pulling together a unique package of resources to exploit an opportunity (Ojukwu, 2000). As an economic force, entrepreneurship inculcates in citizens of a country such behaviours that facilitate profit-making, job creation, infrastructural development, quality service delivery, creative and innovative attitudes. Through entrepreneurship people can learn organizational skills such as time management, leadership development and interpersonal skills (Osuala, 2009). In this regard people are prepared to become responsible and enterprising individuals who become entrepreneurs.

The formation of new firms, whether small, medium or large, for self-employment and growth by people has been recognized as the ultimate determinant of the large differences in economic performance of nations and regions of the world. Baumol (1990) noted that entrepreneurship and entrepreneurial activities are unquestionably considered the engines of economic growth and innovation. According to Randall (2007), entrepreneurship or a private enterprise accounts for the majority of America's new job creation and innovations. U.S. census Bureau (2002) also reported that of all the business owners in the States, self-employed individuals operate more than three-quarters (3/4) of the countries' business. Pettrin (1994) corroborated that rural and urban development are linked more and more to entrepreneurship. Entrepreneurship actually increases people's real-life experiences by creating opportunities where they can take risks, manage results and learn from the outcomes.

People all over the globe are becoming overwhelmingly interested to start and manage their own business ventures to function as employers or boss rather than being merely an employee. Researches have shown that youths are even much more interested to start and develop their own business in order to fight poverty and unemployment. For instance, Achievement Worldwide (2005) conducted poll on youths and entrepreneurship, and found that 69% of the population (teenagers) studied wanted to start their own business and become their own boss. However, the study also discovered that inspite of the large interest exhibited by the youths, they rarely get information about entrepreneurship as a career option. An intensive promotion of the characteristics that motivate youth entrepreneurship through education and training is therefore, imperative (Bosquia, 2012). The development of such enabling characteristics for entrepreneurs while especially revolving around the critical thinking skills of an entrepreneur will largely depend on strong educational policies and strategies. Smallbone and North (1997) emphasized that for a person to realize his entrepreneurial ideas or to grow and sustain in business, the person must possess the ability to think critically. The authors further stated that entrepreneurs who demonstrated the highest level of critical thinking behaviours grow more in terms of sales and also generated higher employment. Schoenberg (2007) as well indicated that in the competitive business world, successful businesses have an edge over others by employing persons who have critical thinking skills. Businesses that wish to get ahead and to remain above competition will of course, strive to employ the majority of personnel that are well grounded in critical thinking skills.

Critical thinking is the thinking that is clear, accurate, knowledgeable, reflective and fair in deciding what to believe or do (Carrol, 2007). Critical thinking emphasizes the ability and tendency to gather, evaluate and use information effectively. Critical thinking is also the ability to distinguish fact from judgment, belief from knowledge and skills in elementary inductive and deductive processes, including an understanding of the formal and informal fallacies of thoughts (Carroll, 2005). Critical thinking is the thinking approach that involves the analysis, synthesis and logical reasoning of facts and information, investigating different alternatives, and seeking out different kinds of information to evaluate and eventually conclude on an issue. Business and financial intelligence, competence, idea generation and strategic project execution are all results of critical thinking (Ajaero, 2013). Critical thinking enables entrepreneurs to identify problem and turn such problems into opportunities. The basic critical thinking skills, according Potts (1994), are the abilities for finding analogies and relationships between pieces of information; determining the relevance and validity of information that could be used for structuring and solving problems, and finding and evaluating solutions or alternative ways of treating problems. Schoenberg (2007) identified some critical thinking skills to include: forming assumptions, asking critical thinking questions, identifying frames of reference, methodological believing, identifying causal reasoning, metacognition and business ethics as well as the ability to manage stress. Critical thinking skills, according to Schoenberg, can be used in practically any aspect of business. The author further stated that CEOs, managers, marketing people, people in sales and human resources as well as those involved in accounting and payroll of large and middle size companies or even sole proprietorship can use critical thinking skills to help their businesses remain competitive and successful. Critical thinking skills empower an individual for entrepreneurship development as his own boss or for employability in business, industries and civil service as a paid employee. Skill is the expertness or practical ability to do something effectively and efficiently. According to Obi (2005), skill helps a person to perform a given task or a piece of work at a given time with minimum errors. A person is said to be skilled if he can do something well within a specified context and within particular domains (Osinem, 2008).

The need to teach critical thinking skills in institutions of learning is currently and prominently featuring among the goals of education. Curriculum developers, educational researchers, parents and employers are more than ever interested on how to develop critical thinking skills in students because of its positive effects on the overall development of an individual. There is great need to educate children and youth to think critically about relevant issues for them to grow into mature thinking adults with adequate problem-solving skills (Mukherjee, 2013). The author stated that educational institutions are emphasizing the teaching of critical thinking skills to their students because of its significant contribution towards employability. Drummond (2012) however, emphasized that although adults may have better thinking tools than youths, largely because of the information they (adults) have acquired through time, it is still better to teach both of them (adults and youths) critical thinking skills in order to instill in them a more investigative mind and a keen sense of reasoning things out. The author further stated that teachers across subject areas and educational levels should endeavour to inculcate in their students critical thinking skills using the right strategies. The general strategies for teaching critical thinking to students include: promoting interaction among students; asking open-ended questions, allowing efficient time for students to reflect on questions asked, and teaching them for transfer (Potts, 1994). Some other methods of teaching critical thinking skills include: debate or group discussion, articulating opinion through writing, solving numerical problems or puzzles and evaluating students on problems or situations that test their analytical abilities and their creativity not just what the students have memorized (Paul, 1995).

Education generally empowers an individual for useful and successful economic, social and political life in his immediate and remote environments. It is the process by which a person acquires knowledge, skills, attitudes and experiences for his own growth and development as well as that of the community/society in which he lives (Onah, 2008). Education, especially formal education is organized in levels such as primary, secondary and tertiary levels and/or as disciplines like Engineering, Medicine, Vocational and Adult Education, etc. Students of vocational and adult education need to be taught critical thinking skills to enable them think creatively, take decisions, solve problems, visualize, reason, analyse, interpret and know how to learn for their occupational preparations. Critical thinking will assist the students to acquire such characteristics as perseverance, flexibility, metacognition, open-mindedness, knowledge transfer, problem solving orientation, the use of quality and independence which are desirable characteristics of modern workforce. Halvorsen (2005) stated that critical thinking does not come easy but well-informed teachers and instructors can help a great deal in its development in their students. The instructors can benefit both themselves and their students by incorporating the key elements of critical thinking in vocational and adult education activities. Vocational education as education based on occupation and employment prepares people for specific trades, crafts and careers at various levels. Vocational education prepares people for professional positions in engineering, accountancy, pharmacy, music, medicine, agriculture, law, marketing, ICT and tourism. Government, businesses and agencies are increasingly investing in the future of vocational education through publicly and privately funded education and training institutions (Kerka, 1992). The author stated that effective teaching and training of students in vocational education has become much more vital to respond adequately to the challenges of global competition, high number of low-skilled workers and young unemployed as well as the ageing populations. Thomas (1992) stated that vocational education should teach students critical thinking skills for them to become flexible and adaptable, and to develop cognitively as labour market becomes more specialized, and economies demand higher level of skilled workers. Adult education on the other hand is a transmission process for the acquisition of vocational, technical and general knowledge, skills, values and attitudes within and out of the formal education system with the view for catering for early education deficiencies of mature people to enhance their self fulfillment in the civil society (Ihejirika, 2011). The goal of adult education is to provide functional, remedial and vocational education for young people who did not complete secondary education but want to further in education (FGN, 2004). Adult education as a programme of study in the university provides instructions and courses for different categories of the formal education system in order to improve the basic knowledge and skills of youths and adults. Since the objectives of vocational and adult education are to provide students with a real world context of cognitive development, they should prepare the students for future employment by teaching them how to think critically instead of what to think. Effective teaching of critical thinking will help vocational and adult education students to learn continuously through thinking and reasoning, problem solving, decision-making and interpersonal competence to be able to work successfully, especially as the nature of work changes and occupations become more reliant on cognitive capacities. Chalupa (1992) noted that vocational education is a vehicle for developing the cognitive skills needed for a productive, full and satisfying work life. Grice and Gladwin (2004) also maintained that new initiatives occasioned by technological changes and globalization place increased emphasis on encouraging students to relate essential skills like critical thinking skills to their future employment. The authors further stated that educators should help students to do so by embedding skills and development activities that are clearly employment-oriented in their instructional delivery. In the same vein, Swell, Damron and High (2007) researched on enhancement of critical thinking of students through paired Engineering and English composition courses and concluded that the work of helping students to mature in their critical thinking skills is a development process which is essential for students in every educational discipline. It is worthy of note in this regard that the development of critical thinking skills of vocational and adult education students will ultimately promote the entrepreneurship development and employability of Nigerian graduates and thereby reduce youth unemployment in Nigeria. The major purpose of the study was, therefore, to determine the strategies for enhancing critical thinking skills of vocational and adult education students for entrepreneurship development in Nigeria.

The following research questions guided the study:

1. What are the critical thinking skills required by vocational and adult education students for entrepreneurship development in Nigeria?
2. What are the strategies necessary for enhancing critical thinking skills of vocational and adult education students for entrepreneurship development in Nigeria?

Methodology

The study adopted descriptive survey design to elicit information from respondents on the enhancement of critical thinking skills of students of vocational and adult education programmes. Descriptive survey is suitable for the study because, according to Osuala (2005), it involves the collection of detailed description of a phenomenon

with the intent to justify current conditions and practices to make better plans for improvement. The study was conducted in all the universities offering vocational and adult education programmes in south-eastern states of Nigeria. The universities are university of Nigeria, Nsukka; Enugu State University of science and technology, Enugu; Ebonyi State University, Abakaliki, and Nnamdi Azikiwe University, Awka. The population for the study comprised of 418 vocational and adult education lecturers in the universities of studied. The entire population was studied because of its manageable size.

A 32 - item structured questionnaire developed by the researcher and focus group discussion (FGD) were used for gathering data for the study. The questionnaire was titled “Questionnaire on Enhancement of Critical Thinking Skills of Vocational and Adult Education Students, (QECTSVAES). The questionnaire was face-validated by three experts: one from Department Vocational Teacher Education, University of Nigeria, Nsukka and two from the Department of adult Education and Extra-mural studies university of Nigeria, Nsukka. Cronbach Alpha reliability technique was used to ascertain the internal consistency of the questionnaire and it yielded a reliability coefficient of 0.78. The questionnaire was structured on a five-point rating scale with response categories as “Strongly Agree (5)”; “Agree (4)”; “moderately Agree (3)”; “Disagree (2)” and “Strongly Disagree (1)”. The 418 copies of the questionnaire administered to the respondents by the researchers with the help of three research assistants were all returned and analysed for the study. The research questions were answered using mean while t-test statistic was used to test the null hypotheses at 0.05 level of significance. The analysed data for the study were interpreted using the real limit of the mean. The result of the focus group discussion which was based on the research questions was also incorporated in study for clearer picture of the findings..

Results

Research Question One: What are the critical thinking skills required by vocational and adult education students for entrepreneurship development in Nigeria?

Table 1: Mean Ratings of Lecturers on Critical Thinking Skills required by Vocational and Adult Education Students for Entrepreneurship Development in Nigeria?

S/N	Item statements	Vocational Lecturers (N = 187)		Education Decision	Adult Education Lecturers (N = 231)		Decision
		\bar{X}	SD		\bar{X}	SD	
1.	Ability to Analyse, evaluate and challenge fallacies and assumptions.	4.23	0.67	Agree	4.770	0.81	Strongly agree
2.	Identify and recognize one’s own and other people’s frame of reference.	3.62	0.71	Agree	3.56	0.82	Agree
3.	Methodologically believe and understand opposing point of view.	3.84	0.91	Agree	3.73	0.65	Agree
4.	Recognize, understand and evaluate the cause and effect relationships about issues and problems.	4.73	0.86	Strongly Agree	4.06	0.92	Agree
5.	Think about one’s own thinking through metacognition.	4.52	0.75	Strongly Agree	4.30	0.82	Agree
6.	Evaluate and analyse relationships between pieces and sources of information	3.62	0.58	Agree	3.87	0.61	Agree
7.	Determine the relevance and validity of information in structuring and solving problems.	3.81	0.81	Agree	4.01	0.68	Agree
8.	Fairly with open-mindedness identify and evaluate alternative ways of solving problems.	4.15	0.71	Agree	4.51	0.62	Strongly agree
9.	Explore new topics, learn new things and gain new knowledge through intellectual curiosity.	3.53	0.94	Agree	3.64	0.67	Agree
10.	Have the willingness to examine the position of others honestly and fairly.	3.72	0.66	Agree	4.56	0.86	Agree
11.	Have the willingness to question authority and majority opinions.	4.58	0.73	Strongly Agree	4.18	0.81	Agree
12.	Evaluate scientific/theoretical claims and arguments.	3.96	0.83	Agree	3.89	0.87	Agree
13.	Apply hypothetico- deductive mode and argument about issues and problems.	4.32	0.58	Agree	4.51	0.79	Strongly agree
14.	Distinguish fact from judgment and belief from knowledge/skills in inductive and deductive processes.	3.62	0.68	Agree	3.73	0.78	Agree
15.	Understand the constructive nature of sense perception and memory.	3.54	0.77	Agree	3.89	0.85	Agree
*	Overall	3.99	0.75	Agree	4.08	0.77	Agree

Key: \bar{X} = Mean; SD = Standard Deviation

The data presented in Table 1 above showed that the lecturers agreed that all the items listed in the table are critical thinking skills required by vocational and adult education students for entrepreneurship development in

Nigerian. The mean responses of vocational education lecturers ranged from 3.53 to 4.73 while those of adult education lecturers ranged from 3.56 to 4.77 which implied general agreement by the lecturers. The low standard deviation of response on each of the fifteen items as well as the overall standard deviation of the two groups implied that both groups have similar opinions that all the items listed in Table 1 are critical thinking skills required by the students.

Research Question Two: What are the strategies for enhancing critical thinking skills of vocational and adult education students for entrepreneurship development in Nigeria?

Table 2: Mean Ratings and Standard Deviation of Lecturers on Strategies for Enhancing Critical Thinking Skills of Vocational and Adult Education Students for Entrepreneurship Development in Nigeria.

S/N	Item Statements	Vocational Education Lecturers (N= 187)			Adult Education Lecturers (N= 231)		
		\bar{x}	SD	Decision	\bar{x}	SD	Decision
1.	Application of cooperative learning techniques, peer tutoring and paired problem solving.	4.62	0.87	SA	4.74	0.73	SA
2.	Application of debate and group discussion techniques.	4.32	0.68	A	4.56	0.76	SA
3.	Asking open ended questions to encourage analytical, creative and innovative thinking.	4.58	0.78	SA	4.71	0.85	SA
4.	Use of Socratic discussion technique in instructional delivery.	3.89	0.91	A	4.16	0.89	A
5.	Confronting students with alternatives and thought provoking questions.	3.94	0.67	A	3.82	0.81	A
6.	Critical analysis and evaluation of assumptions, issues and problems.	4.73	0.64	SA	4.62	0.66	SD
7.	Use of collaborative learning technique to promote students interactions.	4.65	0.79	SA	4.71	0.84	SD
8.	Writing for concise, persuasive and effective inferences.	4.63	0.98	SA	4.70	0.76	SA
9.	Solving numerical problems and puzzles.	3.78	0.88	A	4.31	0.71	A
10.	Teaching for transfer of gained knowledge to other situations.	4.46	0.56	A	4.58	0.84	SA
11.	Building categories about issues, information and problems.	4.15	0.68	A	3.98	0.83	A
12.	Allowing students to identify real life problems about objects, issues and tasks.	4.58	0.76	SA	4.37	0.78	A
13.	Providing environment and situations that encourage the spirit of physical and intellectual discovery.	4.52	0.75	SA	4.64	0.86	SA
14.	Utilization of visual aids in instructional discovery to encourage critical thought process.	3.69	0.91	A	4.24	0.85	A
15.	Requiring from students justification and proofs for ideas, information and proposals	4.71	0.62	SA	4.55	0.77	A
16.	Allowing students to summarize and predict what would happen next in a text, play and discussion.	4.62	0.83	SA	4.08	0.90	A
17.	Making instructional delivery student centred, and the teacher as the facilitator	4.67	0.65	SA	4.78	0.78	SA
*	Overall	4.38	0.76	A	4.44	0.80	

Key: \bar{x} = Mean; SD = standard deviations A = Agree and SA = strongly Agree

Table 2 above revealed that the lecturers generally agreed that all the items in the Table are necessary strategies for enhancing critical thinking skills of vocational and adult education students for entrepreneurship development in Nigeria. The Mean ratings including the overall mean of the vocational education lecturers ranged from 3.69 to 4.73 while those of adult education lecturers ranged from 3.82 to 4.78. The mean ratings of the two groups of lecturers showed their general agreement on each of the items in the Table. The low standard deviation ($SD < 1$) of each item as well as the overall standard deviation implied that all the lecturers had similar opinions about the strategies listed in table 2.

Null Hypothesis one (HO₁): There is no significant difference in the mean ratings of vocational education and adult education lecturers on the critical thinking skills required by students for entrepreneurship development in Nigeria.

Table 3: Summary of T-Test Analysis of Vocational and Adult Education Lecturers' Responses on Critical Thinking Skills Required By Students for Entrepreneurship Development in Nigeria.

Variables	N	\bar{x}	SD	DF	t-value	Sign. 2-tailed
Vocational Education lecturers	187	3.99	0.75	4.16	-1.20	0.92
Adult education lectures	231	4.08	0.77			

Table 3 above show that the calculated t-value is -1.20 at 416 degree of freedom (df). Since the level of significance selected by computer is 0.92 which is greater than 0.05 level of significance chosen by the researchers, the null hypothesis (HO₁) was not rejected. This implied that there was no significant difference between the mean ratings/opinions of vocational education lecturers and adult education lecturers on the critical thinking skills required by students for entrepreneurship development in Nigeria.

Null Hypotheses Two (HO₂): There is no significant difference between the mean ratings of vocational and adult education lecturers on strategies for enhancing critical thinking skills of students for entrepreneurship development in Nigeria.

Table 4: Summary of t-test Analysis of Mean Responses of Vocational and Adult Education Lecturers on Strategies for Enhancing Critical Thinking Skills of Students for Entrepreneurship Development in Nigeria.

Variables	N	\bar{x}	SD	DF	t-value	Sig. 2 tailed
Vocational education lecturers	187	4.38	0.76	416	-0.78	0.23
Adult education lecturers	23.1	4.44	0.80			

The summary of t-test analysis presented in Table 4 above revealed that the computed t-value is -0.78. at 416 and at 0.23 level of significance set by the computer. Since the level of significance selected by the computer is greater than 0.05 level of significance chosen by the researchers, the null hypothesis (HO₂) was not rejected. It implied that there was no significant difference in the mean ratings /opinions of vocational and adult education lecturers on the strategies necessary for enhancing critical thinking skills of students for entrepreneurship development in Nigeria.

Discussion of Result

The result of the study revealed that the critical thinking skills required by vocational and adult education students for entrepreneurship development in Nigeria include the ability to: methodologically believe and understand opposing point of view; analyse, evaluate and challenge fallacies and assumptions; identify and recognize one's own and other people's frame of reference, and think about one's own thinking through metacognition. This result is in line with Schoenberg (2007) that critical thinking skills of adult and youths should include identification of people's frame of reference, methodological believing of other people's views, and metacognition. The result in Table 1 also included the ability to evaluate and analogise pieces of information in problem solving, and the willingness to examine the position of others honestly and fairly. This finding is directly in agreement with the focus group discussion that the ability to recognize, analyse and challenge assumptions and other people's frame of reference are critical thinking skills required for employment and job creation. This result is also in consonance with Potts (1994) who noted that the ability to analogise relationships and determine the relevance as well as the validity of information are for good critical thinking. Caroll (2005) in concord with the result of the study also emphasized the ability and tendency to gather, evaluate and use information effectively to be important in critical reasoning or thinking.

The study also identified the strategies for enhancing critical thinking skills of vocational and adult education students for entrepreneurship development in Nigeria. The strategies, among others, include: application of cooperative and collaborative learning techniques through peer tutoring and students interactions. The discussion held with the focus group also revealed that critical thinking skills can be taught effectively through debate, group discussion, peer tutoring and students interaction among themselves. This result agrees with Potts (1994) that promoting interaction and cooperative tendencies among students is imperative for inculcating critical thinking skills in the students across subject areas and educational levels. Other strategies identified for teaching critical thinking skills are: confronting students with alternative, thought provoking and open-ended questions; debate and group discussions; solving numerical problems and puzzles, and teaching for transfer of gained knowledge to other situations. This result is congruent with Paul (1995) who identified group discussion, solving puzzles and numerical problems, evaluating and testing of students analytical and creative abilities as imperative strategies for teaching critical thinking skills.

The result of the study also revealed that there was no significant difference in the mean ratings of vocational and adult education lecturers on the critical thinking skills required by students and the strategies for enhancing the students' critical thinking skills. The view of the focus group was generally similar with the opinions of both vocational and adult education lecturers on the critical thinking skills required by students and the strategies for enhancement. This result corroborates Drummond (2002) that teachers across different subject areas should inculcate in their students critical thinking skills by applying the right strategies for enhancement.

Conclusion

Entrepreneurship is self satisfying, self rewarding, self reliant and focuses on man's ability to diversify his ideas and brainstorming to solve his problems. People all over the globe are becoming overwhelmingly interested to start and manage their own business venture to function as their own boss rather than being merely an employee. This feat can be greatly achieved by reasoning and thinking critically. Students of all nations and educational background including vocational and adult education students should be taught critical thinking skills for their entrepreneurship development and employability. The critical thinking skills that should be taught include the ability to: analyse, evaluate and challenge fallacies, information and assumptions as well as the ability to identify own and other people's frame of reference and point of view, and thinking about one's own thinking as metacognition. Cooperative learning techniques, debate and group discussions, confronting students with alternative, thought provoking and open-ended questions are also effective strategies for developing critical thinking skills in students which are in line with the result of the focus group discussion. Effective teaching and learning of critical thinking skills in educational institutions especially in higher education would enable students to seize and exploit opportunities to solve problems, generate and communicate ideas, and make positive differences to themselves and their communities.

Recommendations

The following recommendations are made based on the findings and conclusion of the study:

1. Capacity-building programmes should be regularly organized by government, agencies and educational authorities for vocational and adult education lecturers for effective teaching of critical thinking skills to students.
2. Critical thinking skills should be integrated into the curricula of vocational and adult education programmes for effective implementation by well informed teachers.
3. Government and educational authorities should always provide enabling environments and materials for teaching critical thinking skills to students in universities and other levels of education.
4. Teachers and instructors in vocational and adult education programmes should utilize all the identified strategies in this study for teaching students critical thinking skills.
5. Government in collaboration with the authorities of educational institutions and the private sector should provide the needed equipment, tools, and materials and other incentives to motivate the teachers/instructors to effectively teach students critical thinking skills.

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