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Perception on Critical Thinking among B.Ed Teacher Trainees

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Abstract

This aimed to find out the perception on critical thinking among B.Ed teacher trainees. The objectives is to find out significant difference on perception on critical thinking among B.Ed teacher trainees in relation with gender, age, marital status, subject, community, living locality and family head annual income. Sampling: students studying in PSY B.Ed College, Sivagangai, India. Simple random sampling technique adopted. Mean, SD and 't' and 'F' test. It agreed that their rational thinking leads to clarity in mind, clarification and logical reasoning is not possible to carry out all time and abstract connections helped a lot to them respectively. 58% and 41% are disagreed to understanding logical connection between ideas is too difficult, believe and proceed based only on intuition.

Key words: Perception, Critical Thinking and teacher trainees

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1. Introduction:

Critical Thinking is several meanings associated with the word "critical" depending on the context, like "expressing or involving an analysis of the merits and demerits of a work. the main objectives of the study is to assess their perception on critical thinking among B.Ed teacher trainees in Sivagangai District of Tamil Nadu. There are a large number of instructional and related activities to be performed by the teacher inside and outside the classroom. These activities are of varied types. The effective organization of these activities would require that a teacher possesses a certain amount of knowledge and also certain attitudes and skills. For understanding and applying the life skill of critical thinking under thinking skills is pertaining the individual perception. Perception of the critical thinking under thinking skills have strong role among the teacher trainees. Here in this study students those who are studying in PSY College of Education at Sivagangai District. There are 100 teacher trainees were taken into the simple random sampling technique adopted on this study

2. Critical Thinking -Meaning, Definitions and Concept:

Critical Thinking is several meanings associated with the word "critical" depending on the context, like "expressing or involving an analysis of the merits and demerits of a work". Critical thinking starts as soon as individuals establish a connection between their individual experience and social conditions. There is a direct relationship between individuals' ability to establish this connection and the education they have on this issue. The most important place to offer this education in schools and teachers also trained in critical thinking. Perception of the critical thinking is individual but self awareness for all, hence, I have concentrate on perception on critical thinking under thinking skills.

Trilling and Fadel (2009) define critical thinking as the ability to analyze, interpret, evaluate, summarize, and synthesize information. Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered or generated (Scriven and Paul, 2003). Observation, experience, reflection, reasoning or communication, as a guide to belief and action (Most formal definitions characterize critical thinking as the intentional application of rational, higher order thinking skills, such as analysis, synthesis, problem recognition and problem solving, inference, and evaluation (Angelo, 1995). Dealing with ambiguity is an essential part of critical thinking (Strohm and Baukus, 1995).

The critical thinking traits included: Searching for meaningful, clear, consistent, logical, precise, accurate, justify, relevant and true in every things; avoid making mistake; follow some

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rules and criteria in the thinking process; think more precisely and critically in the process of thinking; avoid emotional reasoning; evaluate the degree of truth or false of things before making decision; like to evaluate the logic, validity, and the relevance of data; in evaluation of idea, believe that there is only one way of being right; evaluate carefully before any action taken; distinguish between observation and inference; trying to remain to the main points; respect clarity and precision; like to ask question: searching for the degree of truth; the ability of asking question, defining problem, examining evidence, analyzing assumptions and biases; always looking for the best way to solve a problem; good at reasoning; do not believe in illusion or magic; believe that things can't change overnight; argumentative and like to criticize fact; high judgment skills; like to discuss about political issues; establish clear criteria for evaluating ideas, issues, or positions.

Wade (1995) identifies eight characteristics of critical thinking. It involves asking questions, defining a problem, examining evidence, analyzing assumptions and biases, avoiding emotional reasoning, avoiding over simplification, considering other interpretations, and tolerating ambiguity. Educational research has identified several discrete skills related to an overall ability for critical thinking. These are: Finding analogies and other kinds of relationships between pieces of information. Critical thinking has been broadly defined as a purposeful, self-regulatory judgement, which results in interpretation, analysis, evaluation, and inference in order to achieve a judgement based on evidence, concepts, methodologies, criteria, and contextual considerations.

Beyer (1985) elaborately explains what he sees as essential aspects of critical thinking these are. Dispositions: Critical thinkers are skeptical, open-minded, value fair-mindedness, respect evidence and reasoning, respect clarity and precision, look at different points of view, and will change positions when reason leads them to do so. Criteria: To think critically, must apply criteria. Need to have conditions that must be met for something to be judged as believable. Although the argument can be made that each subject area has different criteria, some standards apply to all subjects such as an assertion, must be based on relevant, accurate facts, based on credible sources, precise, unbiased, free from logical fallacies, logically consistent, and strongly reasoned. Argument: It is a statement or proposition with support of the evidence. Critical thinking involves identifying, evaluating, and constructing arguments. Reasoning: The ability to find a solution from one or multiple premises. To do so, it requires examining logical relationships among statements or data. Point of view: The way one view the world, which shapes one's construction of the meaning. In a search for understanding, critical thinkers view

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phenomena from many different points of view. Procedures for applying criteria: Other types of thinking use a general procedure. Critical thinking makes use of many procedures. These procedures include asking questions, making judgments and identifying assumptions.

Scheffer and Ruben (2000) discuss the critical thinking habits and critical thinking skills. Those are: Analyzing: Separate or breaking a whole into parts to discover their nature, functional and relationships. Applying Standards: Judge the situations according to establishing personal, professional and social rules or criteria. Discriminating: Recognizing differences and similarities among things or situations and distinguishing carefully as to category or rank. Information Seeking: Search for evidence, facts, or knowledge by identifying relevant sources and gathering objectives, historical, and current data from those sources. Logical Reasoning: Draw inferences or conclusions that are supported by evidences for. Predicting: Envision a plan and its consequences. Transforming Knowledge: Changing or converting the condition, nature, or concepts among the contexts.

The California Critical Thinking Disposition (CCTDI, 1994) by Facione & Facione, are explained critical thinking as follows:

Analyticity: Analyticity expresses the tendency to be cautious towards situations that might lead to potential problems and the ability to use logic and objective evidence even under difficult problems. High scores indicate that this tendency is strong. Self-Confidence: Self-confidence, as its name suggests, expresses the person's confidence and process of thinking. High scores on this tendency reflect that the individual has high self-confidence. Inquisitiveness: Inquisitiveness expresses the individuals' tendency to acquire and learn new things without any expectations regarding benefits. High scores mean that this tendency is also high in the individual. Maturity: The maturity addresses cognitive maturity and epistematic development. It gives preferences to those disposed to approach problems, inquiring and decision making with a sense that some problems are ill-structured, some situations admit more than one plausible option and many times judgment based on standard, contexts and evidence which precludes certainly must be made. Open-Mindedness: Open-mindedness expresses an individual' tolerance to different approaches and the sensitivity towards own faults. The main mentality being open mindlessness is that does not consider the individual own thoughts but also the views of others while making decisions. High scores indicate that the individual is good in terms of this tendency. Systematicity: Systematicity is the tendency to make systematic, organized, planned and cautions research. It is the tendency to use strategic decision-making skills based on information and a specific procedure. Truth-Seeking: This dimension measures the individual's

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ability to evaluate different alternatives and thoughts. A high score in this dimension shows that the individual has the skills of researching, asking questions, and being objective despite data opposing those ideas.

3. Objectives of the Study:

To know the perception of critical thinking among B.Ed teacher trainees in Sivagangai District of Tamil Nadu. To understand the perception of critical thinking among B.Ed teacher trainees in Sivagangai District of Tamil Nadu. To find out the significant difference critical thinking among B.Ed teacher trainees in Sivagangai District of Tamil Nadu in relation with certain demographic variables such as gender, age, marital status, subject, community, living locality and family head annual income.

4. Assumptions of the Study:

1. The perception of critical thinking among B.Ed teacher trainees may vary from every individual and they are assessable.
2. It is possible to develop the perception of critical thinking among B.Ed teacher trainees.

5. Hypothesis of the Study

1. There is no significant difference critical thinking among B.Ed teacher trainees in Sivagangai District of Tamil Nadu in relation with certain demographic variables such as gender, age, marital status, subject, community, living locality and family head annual income.

6. Need and Importance of the Study

According to Categorization of life skills by UNICEF (1999): problem solving skills, critical thinking skill, effective communication skills, decision making, creative thinking, interpersonal relationship skills, self-awareness building skills, empathy, coping with stress and emotions. According to Partnership for 21st Century Skills: critical thinking, creative thinking, collaborating, communicating, literacy skills, information literacy, media literacy, technology literacy, flexibility, initiative, social skills and productivity. From that, we came to know that critical thinking skill is one of the components of the life skills. So we need to concentrate on life skills oriented concept for measuring the critical thinking among the teacher trainees. Mere possession of knowledge and certified qualification gives no assurance to meet the aforesaid objectives. It is obligatory for a teacher to have appropriate comprehension of human nature, its needs, and developmental principles in light of urbanization, technology advancements and industrialization locally as well as globally. Due to vast extension in roles and responsibilities, a teacher has to display high order of professionalism inside and outside the classroom. It is

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impossible for a teacher to possess all competencies in perfect amalgam though training and experience lead teacher towards proficiency critical thinking. A competent teacher is temperamentally warm, critical thinking and cordial.

The need is realized to envisage critical thinking for the youth, adolescents and the teachers to be introduced at all levels of education. Very less has been done to provide critical thinking in Indian context. Indian educational practices give much importance to numeral and literacy/language skills. It is more concentrated on developing the cognitive aspects rather than on the applying reflective practices and developing psychological dimensions. Policy makers and administrators have to recognize that teaching core subjects alone is not sufficient to equip students for the knowledge economy. B.Ed Teacher trainees are to be prepared for the demands of the knowledge economy and teacher trainees need to know how to use their knowledge and skills in a given situation. Teachers are responsible to develop critical thinking among adolescents and youth. The need is realized to introduce critical thinking for the prospective teachers at pre service teacher education programme. It is desired that the future teachers would develop essential constructs of critical thinking which not only help them to face challenges in life confidently but also to train their students, in future, to utilize the skills in their personal and professional life (Chauhan, 2016). Teachers should be given critical thinking training as they are the ones who contribute most in the development of the children. If teachers would not be competent enough, then that would affect the development of students at a large scale as development of children is directly related to teachers' competency (Jones, 1989). Hence, it is desired that the future teachers would develop essential constructs of critical thinking which not only help them to face challenges in life confidently but also to train their students, in future, to utilize the skills in their personal and professional life.

It is not always possible for the parents to be a role model for their wards in molding behavior. It is the responsibility of teachers to give importance for critical thinking in their teaching. To attain this goal, the teacher educators must prepare the B.Ed and M.Ed trainees consequently. Most of the teacher educators are not acquiring high level critical thinking. And research also shows that, even if they have life skills, they are not inculcating the same in teaching. They are concentrating only on finishing the curriculum. Hence the critical thinking oriented curriculum must be included at all levels, especially in B.Ed and M.Ed curriculum (Prema, 2013). For realizing the facts and feasibility, it is instantly not possible to include critical thinking in teacher education curriculum at B.Ed and M.Ed levels for prospective teachers. It takes its own time to be implemented in any situations. Therefore, the investigator has realized

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the need to inculcate critical thinking which will result into enhancement of critical thinking as a single nutshell. Hence from the above all discussions and research facts, the investigator has realized the need and importance and made an honest attempt to have a study on "Perception on Critical Thinking among B.Ed Teacher Trainees".

7. Statement of the Problem

For realized to envisage critical thinking for the youth, adolescents and the teachers to be introduced at all levels of education. Very less has been done to provide critical thinking in Indian context. Indian educational practices give much importance to numeral and literacy/language skills. It is more concentrated on developing the cognitive aspects rather than on the applying reflective practices and developing psychological dimensions. Policy makers and administrators have to recognize that teaching core subjects alone is not sufficient to equip students for the knowledge economy. Teacher trainees are to be prepared for the demands of the knowledge economy and teacher trainees need to know how to use their knowledge and skills in a given situation. Now a day, students and teachers is more knowledge based rather than the application of skills. The imbibing of critical thinking by the teacher trainees would automatically led to the enhancement of knowledge. Hence, the input of the critical thinking components is indispensible in Teacher Education Curriculum. The method of inputting critical thinking to the existing teacher trainees should not be over burden and it should be enjoyable in learning. Therefore, this study is considering all possible and practicalities to know the perception on critical thinking among B.Ed teacher trainees with given importance to their convenient.

8. Locale, Sampling and Statistical technique used in this study

Sampling: students those who are studying in PSY College of Education at Sivagangai District, Tamil Nadu, India. There are 100 B.Ed Teacher Trainees are taken into the simple random sampling technique adopted on this study. **Statistical technique used in this study: P**ercentage**,** Mean, SD and 't' and 'F' test are used for computation.

9. Development of Research Tool Used in the Study

Data are required to carry out any type of educational research because answer to these research problems is sought on the basis of empirical data. Data can be collected using readily available tools of those which are modified or developed by the investigator with proper validations. The investigator has to take important decisions regarding the selection of appropriate tools for data collection. Usually in survey method, interview schedule, questionnaire, scale, test inventory and observation schedule are used. As the questionnaire can

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be easily administered and also the time and the effort consumed are less than interviews, the questionnaire is widely used. So in the present study, the investigator used a questionnaire for collecting data. The investigator decided to construct the tools himself as **K.Gopinath (2019) - Critical Thinking Assessment Scale (CTAS).**

10. Item Analysis

Item analysis is the set of qualitative and quantitative techniques and procedures used to evaluate the characteristics of items of the test before and after the test development and construction. Item analysis allows selecting or omitting items from the test, but more importantly, item analysis is a tool to help the item writer improve an item **(Salkind,** 2010**).** Item Analysis is an important tool to increase test effectiveness. To write effective items, it is necessary to examine whether they are measuring the fact, idea, or concept for which they were intended. This is done by studying the student's responses to each item. An item analysis provides the quality of test items, finding the truthfulness of test items and interconnectedness of different items in the same questionnaire and item validity Realizing this, the investigator has applied item analysis for 7item statements from the pilot stage. 7 Critical Thinking item statements items with the weightage of 35 scores (7 items x 5scores) was given to 30 teacher trainees. From the responses obtained, 'r' is calculated by correlating the individual item score and the corresponding component score. The correlation coefficient at 5% level of significant is 0.42 to 0.90 (Best, 1989). Finally 6 items out of 7 items having 'r' Values between is 0.42 to 0.90 significant at 0.05 levels are selected for the final format of Critical Thinking Assessment Scale (CTAS). The 7 item statements with 'r' values are given in following table

Table-1:Calculated 'r' Values with applying Item Analysis for Critical Thinking Assessment Scale (CTAS)

1.	Rational thinking leads to clarity in mind	0.514
2.	Critical thinking involved imagination and creativity	0.953@
3.	Understanding the logical connection between ideas is too difficult	0.615
4.	Believe and proceed based only on intuition	0.427
5.	Conceptualizing of ideas made in every time during thinking	0.599
6.	Abstract connections helped lot	0.836
7.	Clarification and logical reasoning is not possible to carry all time	0.567

@ Not Significant at 0.05 levels, those items are omitted in the final format

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11. Overall Mean SD and Percentage of Critical Thinking of B.Ed Teacher Trainees

Overall Mean, SD and percentage of Critical Thinking of B.Ed Teacher Trainees with Strongly Agree (SA), Agree (A), Un-Decided (UD), Disagree (D) and Strongly Disagree (SD) under critical thinking, are presented in the following table

Table-2: Overall Mean SD and Percentage of Critical Thinking of B.Ed Teacher Trainees

	Item Statements	**Mean**	**SD**	**Percentages**				
				SA	**A**	**UD**	**D**	**SD**
				5	**4**	**3**	**2**	**1**
Critical Thinking	Rational thinking leads to clarity in mind	4.19	0.631	27	69	0	4	0
	Understanding the logical connection between ideas is too difficult	2.29	0.743	0	7	25	58	10
	Believe and proceed based only on intuition	2.13	1.089	3	12	12	41	42
	Conceptualizing of the ideas made in every time during thinking	3.99	0.990	30	51	13	0	6
	Abstract connections helped lot	3.72	1.153	29	39	11	18	3
	Clarification and logical reasoning is not possible to carry all time	4.11	0.764	29	59	6	6	0
	Overall Critical Thinking (68.13%)	**20.44**	**2.42**					

From the above table the following findings are drawn: 69%, 59%, 51% and 39% of B. Ed teacher trainees agreed that their rational thinking leads to clarity in mind, clarification and logical reasoning is not possible to carry out all time, conceptualizing of ideas made in every time during thinking and abstract connections helped a lot to them respectively. 58% and 41% of B. Ed trainees disagreed that they are understanding the logical connection between ideas is too difficult and believe and proceed based only on intuition. The major findings of the study is to B.Ed Teacher Trainees agreed that their rational thinking leads to clarity in mind, clarification and logical reasoning is not possible to carry out all time, conceptualizing of ideas made in every time during thinking and abstract connections helped a lot to them respectively.

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12. Significant differences of Critical Thinking of B.Ed Teacher Trainees with Reference to Certain Demographic Variables

t-tests and F-tests have been calculated with mean and SD scores for finding the significant differences on critical thinking of B.Ed teacher trainees with reference to certain demographic variables such as gender, age, marital status, subject, community, living locality and family head annual income and given hereunder.

Table-3:Significant Difference on the Critical Thinking of B.Ed Teacher Trainees in relation with Gender and the Calculated 't' Values

Critical Thinking	Male	06	22.00	1.788	
	Female	94	20.34	2.429	**0.327@**

@ Not Significant at 0.05 level df- (100-2) = 8

Table-4: Significant Difference on the Critical Thinking of B.Ed Teacher Trainees in relation with Age and the Calculated 't' Values

Below 25 Yrs	80	20.60	2.196	**9.448****
26 – 35 Yrs	07	17.00	2.645	
36 & Above Yrs	13	21.30	2.287	.

**** Significant at 0.01 level df- (100-3) = 97**

Table-5: Significant Difference on the Critical Thinking of B.Ed Teacher Trainees in relation with Marital Status and the Calculated 't' Values

Critical Thinking	Married	33	20.55	2.611	**0.217@**
	Single	67	20.40	2.342	

@ Not Significant at 0.05 level df- (100-2) = 98

Table-6: Significant Difference on the Critical Thinking of B.Ed Teacher Trainees in relation with Subject and the Calculated 't' Values

Critical Thinking	Tamil-Mother Tongue	13	19.38	2.992	**0.331 @**
	English	12	20.33	2.741	
	Mathematics	25	20.68	2.561	
	Physical Science	25	20.24	2.618	
	History	10	21.40	0.142	
	Biological Science	02	20.00	2.228	
	Commerce	03	18.33	2.886	
	Economics	02	22.00	1.414	
	Computer Science	08	21.50	1.414	

@ Not Significant at 0.05 level df- (100-9) = 91

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Table-7: Significant Difference on the Critical Thinking of B.Ed Teacher Trainees in relation with Community and the Calculated 't' Values

Critical Thinking	Other Community	06	20.66	1.032	**0.294@**
	Backward	35	20.42	2.852	
	Most Backward	19	19.84	1.979	
	Denotified Caste	03	21.00	0.681	
	SC/ST	37	20.67	2.461	

@ Not Significant at 0.05 level df- (100-5) = 95

Table-8: Significant Difference on the Critical Thinking of B.Ed Teacher Trainees in relation with Living Locality and the Calculated 't' Values

Critical Thinking	Rural	51	20.41	2.578	**0.876@**
	Urban	43	20.53	1.856	
	Semi Urban	06	20.00	4.516	

@ Not Significant at 0.05 level df- (100-3) = 97

Table-9: Significant Difference on the Critical Thinking of B.Ed Teacher Trainees in relation with Family Head Annual Income and the Calculated 't' Values

Critical Thinking	Less than 50,000 Rs	63	20.28	2.599	**0.695@**
	50,001- 1, 00, 000 Rs	34	20.67	2.142	
	Above 1, 00, 000 Rs	03	21.00	1.732	

13. Conclusion:

The critical thinking ability among B.Ed teacher trainees has attempted to explore all feasible findings related to constructed objectives. This study had nullified the significant differences in relation with selected personal/demographic variables.

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