

A Study on Behavioral Indicators of Teacher Candidates' Critical Thinking Dispositions

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Abstract

Critical thinking, one of the 21st century skills along with entrepreneurship, problem solving and digital competences, has been on the comprehensive skills agenda for Europe [7]. These skills are considered fundamental to learning in the Digital Era [8][9]. In this context, developing critical thinking skills has been a hot issue in educational institutes at all levels. Critical thinking can be briefly defined as an active process with unique and intentional thinking [2][3]. Finding out the critical thinking dispositions of teacher candidates and enhancing them is expected to be the part of contemporary teacher education since the candidates function as change agents. The purpose of this study is to investigate the critical thinking dispositions of language teacher candidates and find out the behavioral indicators of their critical thinking dispositions. The study is a qualitative one and the data has been collected through the questionnaire developed by the researchers. The participants have been asked to state the behavioral indicators of the candidates' critical thinking dispositions based on their experiences and observations. The findings may lead to discussions and recommendations for teacher educators who are responsible for helping teacher candidates gain more critical thinking skills.

Keywords: *Critical thinking skills, teacher education;*

1. Introduction

Critical thinking is currently accepted as one of the most important 21st century skills; however, it is a broad concept developing throughout the past 2500 years [1]. It is known that the concept has been defined in various ways, and all of the definitions include thinking which has a purpose. Dewey [2], the leading figure in educational sciences, defines critical thinking as "reflective thought" to suspend judgement, maintain a healthy scepticism, and exercise an open mind. Similarly, Paul [3] defines critical thinking as an active process with unique and intentional thinking. According to American Philosophical Association Delphi Research Report [4], "critical thinking is the purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation and inference as well as explanation of the evidential, conceptual, methodological, criteriological or contextual considerations upon which that judgement was based". Cottrell [5] states that critical thinking is a cognitive activity, associated with using the mind and also a complex process of deliberation which involves a wide range of skills and attitudes. Wagner [6] states that the 21st century learners need seven survival skills to be prepared for life, work and citizenship: Critical thinking and problem solving, collaboration and leadership, agility and adaptability, initiative and entrepreneurialism, effective oral and written communication, accessing and analysing information and curiosity and imagination. The European Commission employs a similar approach to teach and learn the 21st century skills [7]. In 2016, the Commission adopted a new and comprehensive skills agenda for Europe. Critical thinking skills are one of the most emphasized skills along with entrepreneurship, problem solving and digital competences, and are considered fundamental to the 21st century learning [8][9]. In this context, enhancing critical thinking has been a hot issue in educational institutes at all levels. Bearing the fact that critical thinking skills can be taught, practiced and mastered in mind [10], the contemporary educational institutes have been offering updated curricula and programs in which developing critical thinking skills has been given a special emphasis. In accordance with these trends, teacher education institutes are expected to pay attention to enhance the critical thinking skills of the teacher candidates since they will be the change agents in the future. Several studies on critical thinking disposition of candidates have been carried out. Some of them have tried to find out to which extent initial teacher education process influences development of candidates' critical thinking competences [11][12][13][14]. The participants of these studies are the candidates in different departments and are asked to evaluate themselves. This study asks about the teacher educators' observations on the behavioral indicators of the candidates' critical thinking dispositions. The purpose is to learn more

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about the behavioral indicators of dispositions relying on the teacher educators' observations and experiences.

2. The Methodology

This study is a qualitative one in which the views of the academic staff on the behavioral indicators of teacher candidates' critical thinking dispositions have been investigated. Research studies that investigate the quality of relationships, activities, situations, or materials are frequently referred to as qualitative research [15]. The variable in the study has shown a qualitative change. This kind of variables is not in numerical form [16]. The study group is the teacher educators working at Educational Faculties of two Turkish Universities. The purposeful sampling is used to study a particular sample of persons or documents because of the sample's usefulness and the research using purposeful sampling is thus aimed at explaining a phenomenon rather than making a generalization [17]. 16 teacher educators participated in the study. 75% of them have been working at Mersin University and 25% at Istanbul University. 12.5% of the participants are professors, 12.5% associate professors, 68.75% assistant professors and 6.25% lecturers. 50% of the participants have had experience on teacher education for more than 20 years and the other half for less than 20 years. In this study, the personal experiences of the teacher educators have been focused on and hence, a questionnaire consisting of open-ended questions have been prepared. The unstructured responses of the participants have been collected as written texts. As for the data analysis, the written texts have been investigated through content analysis and the findings have been thematically expressed. After unitizing the texts, the unitized text segments have been coded. According to the context of each segment, the names of the categories have been determined and the categories have been thematically titled. The frequency and percentage of the behavioral indicators have been shown.

3. The Findings

The behavioral indicators of the candidates' critical thinking dispositions according to the views of the teacher educators are seen in Table 1. The behavioral indicators are in two themes: the tendency for scientific thinking and being active. The theme of the tendency for scientific thinking includes the categories of questioning, reasoning, being objective and being open-minded, and the most of the indicators are under this theme (68.4%). As an indicator, questioning an event, a problem or information has been most recurred categorical indicator (25.3%). The candidates are able to pose sound questions related to the context and to look for different sources of information. The second most recurred categorical indicator is reasoning (15.8%). They can process the given information, draw conclusions and produce new ideas. 14.7% teacher educators claim that candidates are objective and, have the ability to evaluate the events and phenomenon by employing different perspectives. The least recurred category under the theme of tendency for scientific thinking is open-mindedness (12.6%); however, almost half of the educators state that the candidates listen to others' ideas actively.



Table 1. The Thematic and Categorical Frequency and Percentage of Behavioral Indicators of Teacher Candidates' Critical Thinking Dispositions

Theme	Category	Behavioral Indicators	f	%
Tendency for scientific thinking	Questioning	Poses new questions about the context	8	8.4
		Seeks different sources of information.	6	6.3
		Not accept authority-based information as the correct one. Inquiry the source of information.	5	5.3
		Is sceptic. Not accept the correctness and firmness of the information given before.	3	3.2
		Favors learning instead of exam achievement	2	2.1
		Reasoning	15	15.8
		Processes the given information. Reaches consequences and produces new ideas.	4	4.2
		Looks for cause and effect relationship.	3	3.2
		Offers reasonable solutions to the problems.	3	3.2
		There is consistency between his discourse and his actions.	2	2.1
		Notices the contradictory discourse.	1	1.1
		Understands the hidden messages and analyses the discourse.	1	1.1
		Not react emotionally.	1	1.1
		Being Objective	14	14.7
		Evaluates the events or problems from different perspectives.	8	8.4
		Tries to reach the truth.	3	3.2
		Accepts he is mistaken if there are reasonable proofs. Reviews his ideas.	3	3.2
	Being open-minded	12	12.6	
	Actively listens to others' ideas.	7	7.4	
	Tends to show empathy.	3	3.2	
	Respects for different views .	2	2.1	
Being Active	Communicative Motivation		17	17.9
		Takes part in discussions.	6	6.3
		Not hesitate to think independently and take action.	6	6.3
		Shows reactions with gestures and mimics.	3	3.2
		Is a group leader and convinces his peers to go further.	1	1.1
		Academic Motivation	13	13.7
		Uses sense of humour when needed.	1	1.1
		Has high scientific curiosity.	4	4.2
		Defends his views or ideas consistently in both oral and written ways.	3	3.2
		Follows the current changes.	2	2.1
		Has an academic success.	2	2.1
		Is sensitive towards problems.	1	1.1
		Has future plans.	1	1.1

The second theme titled as being active includes two categories: Communicative and academic motivation. The most frequently recurred indicators are within the communicative motivation category (17.9 %). The candidates participate in discussions and tend to think independently. As for the academic motivation category, the behavioral indicators such as following the current changes, academic success, and having future plans are low-ranked. Among the indicators, the lowest-ranked categories are “being open-minded” and “academic motivation” (respectively 12.6%, 13.7%). The behaviors in these categories are varied; nevertheless, they have been recurred quite less.

4. Discussion

The findings have revealed the behavioral indicators of the candidates' critical thinking dispositions from the perspective of the teacher educators. Although the indicators have been put into categories under two themes, they cannot be rigorously diverged from each other. For instance, there should be reasoning within the behaviour of questioning. In addition to these two categories, objectivity and open-mindedness can be intertwined. Within the categories under the theme of being active, several indicators point out that there are affective domains within dispositions.

The California Critical Thinking Disposition Inventory (CCTDI), one of the significant studies in the literature, is the first instrument designed to measure seven aspects of critical thinking dispositions whose initial delineation stems from Delphi report: Inquisitiveness, systematicity, analyticity, truth-seeking, open-mindedness, critical thinking self-confidence, and maturity [18]. The findings of this study considerably correspond to the dimensions of CCTDI although this study is based on the views of the outsiders unlike the self-evaluation of the participants in CCTDI.

The findings are limited to the study group and cannot be generalized. Nevertheless, they may point out the strengths and weaknesses in teacher education curricula and may shed light on the discussions for the new courses to be offered to the candidates. Teacher candidates who are supported to enhance their critical thinking skills will fulfil their future teaching responsibilities more effectively. The further studies might focus on determining the behavioral indicators of critical thinking dispositions of candidates in different levels of teacher education from the perspectives of teacher educators. Also investigating the dispositions of working teachers might make contribution to the weaknesses in teacher education system. Moreover, such studies may lead to develop more reliable assessment tools to be used in the future. It is clear that the success of future education depends on how teachers are educated and how their learning to teach is facilitated.

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