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Üniversite Öğretim Üyelerinin Eleştirel Düşünme Anlayışları: Bireysellikten Sosyalliğe Doğru Bir Süreklilik\*

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Makale Bilgisi	ÖZET
<i>Geliş Tarihi:</i> 23.04.2020	Bu makale, üniversite öğretim üyelerinin çalışma alanlarında ve profesyonel yaşamlarında eleştirel düşünmeyi (bundan sonra - ED) öğretme ve öğrenme deneyimlerini derinlemesine bir şekilde anlamayı amaçlayan bilimsel araştırmanın sonuçlarını sunmaktadır. Fenomenografik yaklaşım kullanılmıştır. Farklı üniversiteleri ve çalışma programlarını temsil eden on yedi öğretim üyesi, ED kavramına ilişkin kişisel algılarını, bu kavramı üniversitede öğretmenin yollarını ve ayrıca nasıl öğretileceğini öğrenme hususlarını paylaşmışlardır. Bu makale, öğretim üyelerinin ED kavramı hakkındaki algılarını ortaya çıkaran sonuçların bir bölümünü açıklamaktadır. Veri analizi, ED'nin niteliksel olarak sekiz farklı şekilde algılandığını ortaya çıkarmıştır: kendini yükseltme ve geliştirme olarak; çevre ile açık ilişki geliştirme olarak; karar verme aracı olarak; şüphe duymayı öğrenme ve bilgiyi yeniden kontrol etme olarak; seçmeyi öğrenme olarak; soru sormayı ve düşünceleri ifade etmeyi öğrenme olarak; yaratıcı bir kabiliyet olarak; sivil ve demokratik toplumun bir niteliği olarak. Kategoriler arasında dört tür bağıntı tespit edilmiştir: Bunlar ilişkisel bağıntı, sonuca yönelik bağıntı, öğrenme sürecine yönelik bağıntı ve başka bir olguya ait olma şeklindedir. Özgün beyanlar, ED'nin birey, kurum ve toplum için ne anlama geldiğini ve üniversitelerin ED'yi beslemeye nasıl katkıda bulunabileceğini tartışmaya açmaktadır. Sonuç, üniversite öğretim üyelerinin ED kavramına farklı anlamlar verdikleri, ancak farklı değer vermedikleri şeklindedir. ED'ye kişisel olarak, kişilerarası ve sosyal fayda açısından eşit derecede değer verilmektedir.
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**Anahtar Kelimeler:** Fenomenografi, üniversite öğretim üyeleri, eleştirel düşünme (ED), algı

University Faculty Members' Conceptions of Critical Thinking: A Continuum from Individualism to Sociability

Article Information	ABSTRACT
<i>Received:</i> 23.04.2020	This article presents results of the scientific research, aimed at in depth understanding of university faculty members' experience of teaching and learning critical thinking (further - CT) in their study fields and professional life. Phenomenographic approach was employed. Seventeen faculty members, representing different universities and study programs, shared their personal perception of the CT concept, ways of teaching it at university as well as learning how to teach it. This paper describes one part of the results, revealing faculty members' perceptions of the CT concept. The data analysis revealed that CT is perceived in eight qualitatively different ways: as self-raising and self-improvement; as development of open relationship
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with environment; as decision making instrument; as learning to doubt and recheck knowledge; as learning to choose; as learning to raise questions and express thoughts; as a creative capacity; as attribute of civil, democratic society. Four types of interconnections among categories were detected: relational, result orientated, learning process directed and belonging to another phenomenon. Authentic testimonies invite for discussion of what meaning CT has for individual, institution and society, how universities can contribute to nurturing CT. The conclusion is that university faculty members give different meaning to CT concept, but not different value. CT is equally valued as personal, interpersonal and social good.

**Keywords:** Phenomenography, university faculty members, critical thinking (CT), perception.

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## 1. INTRODUCTION

Higher education (further – HE) in many countries has similar goals – to contribute to personal development, to prepare for labour market, to prepare for life as active citizens in democratic societies (European Commission, 2017; Flores et al., 2012; Lee et al., 2015). Critical thinking (further - CT) is the competence that is considered to be equally important for personal growth, professional and social life. This is recognized not only by academia (Barnett, 1997; Davies & Barnett, 2015), but also by the world of work (Penkauskiene et al., 2019). Thus, CT naturally becomes integral part of HE objectives'. Presumptively we could think that it is already embedded into academia's strategies, programmes, courses, lectures. But how could we know? Nobody collects such data neither at European nor at single country level. In fact, we have limited knowledge about what meaning university administrators, programme developers, teachers attribute to CT, what conceptions they follow, what methodologies employ to teach it, as there is no clear consensus on those issues among academia (Elen et al., 2019). It means that the question "what does CT means in the context of HE" stays open for investigations and discussions.

The authors of this article tried to tackle this issue by looking at the scientific articles in the field of HE. We analysed 151 scientific articles, published during the period 1993-2017 in highly ranked publications (Q1 - Q4), looking for the conceptualization and actualization of CT in HE at different periods of time (Indrasiene et al., 2019). Our analysis proved an extreme increase of publications starting from 2003. We were not able to make clear scientific judgment about reasons of growing popularity on CT topic in scientific journals. But most popular citations of Barnett (1997); Beyer (1987); Ennis (1987), Facione (1990), Halpern (1998, 2014), Paul (1992); Paul & Elder (2001), Siegel (1998) and other authors, let us do presumption about impact of their work on growing number of research in different study fields. The other reason might be emphasis on CT as global, intersectional competence (High Level Group on the Modernisation of Higher Education, 2013; European Commission, 2017) and competitive tool in global market (World Economic Forum, 2016). HE institutions were and are expected to position themselves as places for development of intellectual forces, ready to employ gained competences, including CT, for labour market needs and economic growth, as well as for scoping with unpredictable challenges of today's and tomorrow's reality.

Our analysis disclosed CT to be a multidimensional and polysemantic phenomenon, which is conceptualised in various ways – as a personal trait, as thinking process and as end result. Critically minded person is recognized by certain skills and dispositions. The variety of CT concepts calls for discussion of what characterises critically minded person. Researchers also relate CT with essential process of thinking such as reasoning based on specific criteria (Penkauskiene, 2016), analysis and prevision (Loes & Pascarell, 2017). CT process starts from wonder, eagerness to know (Dewey, 1902), problem naming (Facione, Facione & Giancarlo, 2000) and continues as specific goal directed investigation, demanding higher order thinking (Helsdingen, van Gog, & van Merrienboer, 2011), and leading to a particular result - decision making, problem solving, self-improvement (Brookfield, 2012; Halpern, 2014).

The most common way to define CT is through cognitive skills and dispositions, that are named differently by various authors. We had no intention to analyse those differences. Our goal was to identify most popular ones in the analysed articles. The authors of 151 articles mention following skills: explanation, analysis, decision making, making inferences, interpretation, evaluation, self-regulation, reasoning, and critical thought. And following dispositions: concern for true beliefs and actions when it makes sense, meaning to try to "get it right" to the greatest possible extent, concern for fair and clear presentation of one's own and others' viewpoints in the context of seeking the best understanding possible, honesty, concern for every person, inquisitiveness, alertness, self-confidence, flexibility, clarity, diligence, reasonableness, willingness to engage and to persist in complex tasks, willingness to reject unproductive strategies and inclination for self-correction, meaningfulness, relevance, courage, persistence, scepticism, open-mindedness, criticality. The authors of the analysed articles, while distinguishing those CT components, make references to such well known scholars as Barnett (1997), Beyer (1987), Ennis (1987), Facione (1990), Halpern (1998), Siegel (1988).

We also looked at the articles from the perspective of individuality, inter-personality and sociality. It means that CT can be and is understood as a personal, interpersonal or/and social competence. We have found that scientists, representing different academic fields, are linked to associate CT with personal development for personal gain – more knowledge, better skills, stronger critical attitudes (Evans, 2012; Helsdingen et al., 2011; Mathias, 2015; Healey & Ribchester, 2016). Interpersonal and social aspects receive less attention. Others are needed mostly to support one's development and self-improvement (Garrison et al., 2001), to share knowledge and solve problems collectively (Pascarella et al., 2013). Interpersonal aspect in some cases reveals as a need to help, to be useful for others (Robinson, 2014; Samson, 2016). Social aspect reveals through considerations of broader issues that step out of academic space or professional area (Abrami et al., 2008; Danvers, 2016; Frijters et al., 2008; Johanson, 2010; Pence, 2009).

In short, CT is mostly conceived, used and valued as development of cognitive powers, aimed at personal and professional growth. And this leads to a question about ambitious HE goals (Liu et al., 2016). If students have to become critical beings (Barnett, 1997), and contribute to development of better societies (Biesta, 2019), do we keep to development of cognitive abilities for personal improvement? Our analysis shows that there is enough arguments for a broader conceptualization and implementation of CT in HE context. CT can contribute to broader HE goals (Danvers, 2016; Wang et al., 2011), education policy (European Commission, 2017) and societies at large (Asia Society/OECD, 2018).

Discussions about CT as general or specific domain, individual, interpersonal or social competence, probably will continue. It has to do with variations of meanings that different people assign to CT. Literature analysis revealed that scholars in search of CT meaning are linked to use already existing definitions and validate them in their own academic context. But what authentic meaning do teachers and students, employers and employees give to CT?

*Critical thinking is one of the most central concepts for teaching and learning in higher education, but definitions are manifold and disputed. It is argued that educational management and the professoriate have a shared strategic responsibility to facilitate critical thinking. Issues that should be considered include the arbitrary nature of the concept of critical thinking and the concept's normative nature. The need for realism in definitions is underlined, as well as the need for definitions that can be related to educational practice (Erikson, 2019, p.1).*

We believe that it is time to look for authentic experiences and meanings in connection with CT in HE context. Otherwise, we will be not able to know what it really means for those who are expected to teach and learn it. The current article contributes to the scientific knowledge about authentic meanings of CT concept by presenting findings of phenomenographic research.

The article shortly presents methodological underpinnings – phenomenographic approach, research participants profiles, data collection and analysis process. The Findings part describes results of the study – conceptual categories, dominant and non-dominant meanings, interrelations between different categories, and outcome space. The Discussion part synthesis the results and reflects upon them in the light of HE goals and theoretical frameworks. The article ends with short note about limitations of the current study.

## 2. METHODOLOGY

Phenomenography was chosen as main methodological approach to research university faculty members' perceptions of CT. This approach has been chosen because of its relevance to the research object and main question to be answered - *what meaning do university faculty members attribute to CT?* Or in other words – what do faculty members think about what CT is? Phenomenography is a research instrument to study peoples' perceptions and conceptions of a certain phenomenon in a living word (Marton, 1981). It aims to reveal different ways of understanding, to describe variations of conceptions and to discover interconnections between them.

*Differences in conceptions are explained by the fact that different people have different experiences because of their different relations to the world (Lepp & Ringsberg, 2011, p. 109).*

Those differences constitute people's knowledge, understanding and models of behaviour in various life situations. To be aware of those differences means to be aware of ourselves and reality (Barnard et al., 1999). Differences of conceptions are called "categories" (Marton, 1994). Our research was focused on search for qualitatively different ways of CT concept understanding by university faculty members in the context of higher education. We collected and analysed data, sorted into respective categories, described findings, outlined outcome space, that did represent all range of understandings found in the data.

### 2.1. Participants

The selection of participants was guided by the following criteria: 1) representation of different study fields and professional areas; 2) representation of different universities; 3) representation of different sex; 4) representation of different age; 5) representation of different teaching experience (duration of teaching); 6) representation of different scientific degree. We planned to have 20 respondents and had 17 at the end. Phenomenographic approach does not require having big numbers. It is recommended to have from 10 up to 20 research participants in order to be able to manage data and to have enough variations

of experiences (Larson & Holmstrom, 2007; Trigwell, 2000). The main characteristics our respondents were as follows: 1) 3 from medicine, 3 from engineering; 5 from social sciences; 3 from arts; 3 from humanities; 2) represented number of universities – 8; 3) 10 males and 7 females; 4) age range from 40 till 60 (see Table 1).

Table 1.

*The Main Characteristics of the Research Participants*

Code	Sex	Study field	HE	Age	Degree
C1	F	Arts	LMTA	52	Assoc. prof.
C2	M	Humanities	VK	42	Lecturer
C3	M	Social sciences	MRU	42	Assoc. prof.
C4	M	Engineering	VGTU	60	Prof.
C5	F	Medicine	LSMU	53	Assoc. prof.
C6	M	Engineering	VU	42	Assoc. prof.
C7	M	Engineering	VGTU	60	Prof.
C8	F	Arts	VDA	55	Prof.
C9	M	Arts	VDA	44	Lecturer
C10	M	Social sciences	VGTU	52	Assoc. prof.
C11	M	Social sciences	KTU	43	Assoc. prof.
C12	F	Medicine	VU	52	Assoc. prof.
C13	M	Medicine	LSMU	45	Prof.
C14	M	Humanities	VU	44	Assoc. prof.
C15	F	Social sciences	MRU	41	Assoc. prof.
C16	F	Humanities	VU	40	Assoc. prof.
C17	F	Social sciences	MRU	53	Prof.

The participants had different specific subject teaching experience. As concerns experience of teaching CT, nobody of them could say that they specifically teach it. No one of our research participants had taught CT as a separate subject. CT is considered to be integral part of their professional practice.

## 2.2. Data collection

Phenomenographic approach recognizes different ways of data collection - interviews, diaries, drawings, video recordings (Lepp & Ringsberg, 2011). But most popular one is interview. This way provides possibility to get into depth understanding of personal perceptions about certain phenomenon. Researchers are able to ask for clarification, expansion of thoughts, and provision of examples. Respondents can correct themselves, explain, add, and illustrate their conceptions. We decided to choose interviews because of above mentioned reasons and because of our own, as researchers, experience in making interviews. We felt quite comfortable with this data collection method. We started our research with an open and quite direct question – *what does CT mean for a concrete teacher?* We reframed this question during our interviews and used variations depending on concrete situation – *what do you think CT is about? What meaning do you attribute to CT? What is CT for you?* Such variations appeared in a natural way of discussion talking about faculty members' experiences in teaching and learning CT. Such open questions were directed towards getting not uniformed, scientifically correct, but rather personally treated CT concept – how it is perceived, understood, interpreted by each individual. Additional questions were asked only for clarification or for illustration of thoughts - *are you saying that...? Does it mean...? Could you provide an example?* The respondents were interviewed in a convenient and friendly environment (out of university) and felt free to express their independent opinions. We sought to avoid talking about what CT should or could be - rather encouraged to share personal believes that faculty members' have about CT concept. The interviews took from 30 to 45 minutes. They were audio recorded and later transcribed verbatim.

## 2.3. Data analysis

Data analysis started right after all data collection and transcription were completed. Such way was chosen because of few reasons. First, we wanted to be able to get acquitted with all ideas and compare different perceptions. It was only possible having all data at hand. Second, we were a big team of researchers and could share workload. Eight authors worked in two groups that consisted of four researches. Each group had a chief researcher that was more knowledgeable in a research approach and/or had practical experience. Each group member had: 1) to read to the whole transcribed text several times and get overall impression; 2) to read again and mark answers to the interview question. After those two steps were completed groups of four gathered to discuss individual findings and verify preliminary results of the analysis. Those discussions were valuable in terms of possibility to get true, in depth understanding of phenomenon under investigation – to argue, to reason, to get back into transcribed text (in some cases into audio material) and to check meaning. All members of the groups had to come to a common agreement about an answer to the question. In cases of disagreement, we asked for more qualified opinion, addressing experts, more knowledgeable colleagues. Afterwards we continued our work: 3) noted similarities and differences in the statements; 4) determined descriptive categories of conceptions; 5) determined interrelations between categories of conceptions. Then, again groups of four researches gathered to discuss individual findings that were checked, approved or corrected within group. One member of the group was in charge of preparing final, joint version of categories with illustration

of their meaning. The final stage of analysis included: 6) detection and description of non-dominant ways of understanding; 7) finding a structure in the outcome space; 8) assigning a name to each category of description. Steps of the data analysis were in line with common way used in phenomenographic studies (Larson & Holmstrom, 2007).

Two, divided groups of researchers, had regular monthly meetings to discuss results of analysis process and to consult with each other. All final decisions – on descriptive categories, dimensions of variations, and structure of outcome space were made collegially. In such a way, we ensured validity of our research.

*In phenomenographic studies it is a common for the researcher to have a co-examiner who is assigned to test the validity of categories (Lepp & Ringsberg, 2011, p. 118).*

In our case we had pair of chief researchers as co-examiners in each group, but the final decision on research results were made collegially. The validity of the dimensions and outcome space was established by looking for and agreeing upon logical interrelations between categories of meanings, as well as general outcome space formed by categories (concepts), dimensions and level of conceptualization importance.

### 3. FINDINGS

Our analysis disclosed eight qualitatively different ways of CT concept perception that were grouped in following dominant categories: 1) CT is self-raising and self-improvement; 2) CT is development of open relationship with environment; 3) CT is a decision-making instrument; 4) CT is learning to doubt and recheck knowledge; 5) CT is learning to choose; 6) CT is learning to raise questions and express thoughts; and non-dominant categories: 7) CT is as a creative capacity; 8) CT is an attribute of civil, democratic society. Dominant categories are those that include most frequent, often repeated meanings, non-dominant are singular not repeated meanings. Each category presented below is described and illustrated with authentic quotes, with assigned code (C1/C2, etc.). Such system was used in order to keep our respondents anonymous.

Faculty members shared their personal perceptions about what CT is. Those perceptions were built either on their own personal or/and professional, academic experience. Their claims were built on examples of their teaching or/and learning of students. Very often respondents started their sharing with phrase *"I do not know if it is CT, but..."* We encouraged to share all, even vague perceptions, as we were looking for authentic, not uniformed concepts. It has to be admitted that our respondents are used to talk about themselves or their students using impersonal form – "one", "someone", "you" – instead "I", "my students". And conjunctive mood ("have to be") instead of indicative mood ("it is"). It is because of long standing scientific tradition, coming from past experience, to hide oneself beyond words, and to present oneself as a neutral which was used to be equal to an objectivity and scientific correctness.

#### 3.1. Dominant categories of CT description

##### 3.1.1. Category 1: CT is self-raising and self-improvement

University faculty members recognize CT as ability to know oneself better –to see and acknowledge weak and strong sides, to detect traits that have to be improved, believes to be revisited and actions to be corrected: *"the most important think in CT is to change readymade rules and steady attitudes"* (C7). It means personal inclination and readiness to practice critical approach towards oneself - ability to raise open, sometimes not convenient questions: *"is it everything correct? Am I in a right place with a right people?"* (C1). Such open and authentic questions lead towards *"personal freedom and courage to take on serious problems"* (C16) and *"move on in a life"* (C13). In summary, CT as self-raising and self-improvement is a process of active thinking and rethinking, changing habits and modes of behaviour for personal sake and for benefits of others. Personal sake means *"awareness of one's strong sides in order to compete and to realize one's capacities at best"* (C1), and improvement of personal character as such. Benefits for others means one's ability *"to understand others better"* (C13), to develop oneself in respect to others. In many cases personal and interpersonal aspects are interconnected.

##### 3.1.2. Category 2: CT is development of open relationship with environment

An open relationship with environment appears in a several ways. One way is *"to look at reality with open attitude and wonder"* (C14). It helps to break out of assertiveness and make space for a search of answers alone and with others. *"We might be very critical about our reality, but it is not in our power to search for answers on our own. We need to trust other side of a dialogue, and keep presence of mind, critical distance at the same time"* (C14). Presence of mind does not confront with empathy - rather opposite. One can be open to other's feelings and thoughts and at the same time keep calm. It is considered to be critical ability especially in cases of emergency, when someone needs help. Other way to nurture open relationship with environment is to study it. It means to observe social processes, tendencies and to name problems for the sake of common good. In such a case CT means ability *"to swim athwart stream, as heart feels and mind tells"* (C8). It is not easy task to complete, but necessary, if one strives for a truth. CT, as development of open relationship with environment, contains two "confronting" features – openness and distance. One has to be open and to be a little bit distant to understand reality and manage oneself in it for the sake of others and social good, general welfare. In this respect this category slightly differs from the previously described. It also embraces

interpersonal aspect – “to show empathy” (C5), “to demonstrate trust” (C14) for another person, but this aspect in many cases goes with a strong social notion –collegiality, alliance, humankind, holistic worldview. In general, the category “Open relationship with environment” notifies strong philosophical concepts - search for truth, trust, wonder.

### **3.1.3. Category 3: CT is a decision-making instrument**

CT as a decision-making instrument is considered to be of very practical use. Firstly, for making decisions in daily situations – what article to buy and what not to buy, what method of action to choose, what to refuse, what problem to solve first and what to leave. Secondly, for making right decisions in ambivalent, complex situations that do not happen often. For example, in a case of illness – “is it right to switch off breathing instrument if brain have died or not?” (C5). Complex situations always involve ethical aspects, morality. It is not easy to make right decision and sometimes nobody knows if it is really right. CT as a practical tool is used for finding one’s niche in a competitive environment. “CT has an organic relationship with economic science. A person needs to compete in a daily life. And it means to think how to use one’s time effectively, to tailor one’s capacities, and to sell oneself” (C10). Competiveness is considered to be a reality that anyone needs to adjust to and CT helps not to get lost, not to frustrate, but rather to look for the best place to put oneself in this life. CT helps to see, to name, to interpret reality and make practical informed decisions. Sometimes they are made after a certain period of time, not immediately.

This category includes personal and interpersonal aspects. Personal aspect means one’s ability to make good, right choices for one’s sake, interpersonal – for the benefits of others. Social aspect is not reflected in this category.

### **3.1.4. Category 4: CT is learning to doubt and recheck knowledge**

University faculty members understand educations as raising independent thinkers. Independence manifests in learning to be a healthy sceptical - “not to trust everything what is written in scientific articles” (C12), because things change during lifetime and science as well. Scientific knowledge has to be revisited and rediscovered by students themselves. They have to look at same phenomenon from different time, space, context perspectives and to find responses to questions supported by sound arguments. It means that students have to learn that there is no one single right answer neither in theory, nor in practice. “There is nothing finally defined in an economic science that one could learn as a finished poem <...>  $2 \times 2 = 4$  is not the answer that requires CT. We teach students to think for themselves <...> if they can find their own way to resolve task, and get closer to the truth we are happy (C10). University faculty members feel committed to teach not to take everything what is said and written by others for granted. They see CT as tool of a certain provocation to dig deeper into a topic, question, not to be satisfied with already given answers. University is considered to be a place where critical minds learn to rethink and to rebuild knowledge without fair of authorities.

This category embraces two aspects – personal and social. Personal aspect is reflected by individual efforts not to get fooled, manipulated, to become more critical in order to protect oneself and be wiser. Social aspect reveals as an attempt to demonstrate importance of not-uniformed thinking, watchfulness and accuracy as a social value for all, as a precondition for a science and humankind development.

### **3.1.5. Category 5: CT is learning to choose**

CT is learning to choose point of view, position and values, topic to be studied and its interpretation. Faculty members say that to choose topic of independent task or final work is not easy task. Students have to do a lot of work - search for information, think about its appropriateness, sort it out, decide what is meaningful for them. And then choose. “Students choose their own position, their own truth and have to prove their choice” (C11). Making choices requires time, efforts, persistence and willingness to work on details. “One learns to look for nuances, to search for accents, to understand where problem is and then to choose mode of action” (C8).

University faculty members argue importance of choosing the ways of interpretation – results, scientific findings or piece of artistic production. They argue that ability to choose way of interpretation notifies students’ ability to think critically. In other words – ability to use basic knowledge, apply it for deep analysis and make informed choices. “CT is directly connected with interpretation. Piece of music may be presented in different ways <...> Students have to know different styles, to understand features of a certain era <...> and choose logical way of interpretation” (C1).

CT as learning to make choice is understood as a final decision that is presented in the oral or written way of reasoning, performed in an artistic or scientific form. Learning to choose is valued as personal ability and for personal favour. Critical choices are beneficial in terms of proving one’s ideas and actions in learning and daily life situations.

### **3.1.6. Category 6: CT is a learning to raise questions and express independent thoughts**

CT is recognized through students’ ability to formulate questions and express independent thoughts. University faculty members emphasize that such ability has to be developed through entire life, starting from the childhood. “It is a regular practice – to work, to research, to search, to solve tasks. Regularity trains mind. I myself, as scientist, I am not afraid to get stuck in a certain place, I interrogate, take risky steps, as a science is a risky business” (C7). Students at the very beginning are not able to

demonstrate such kind of CT- they just state what they have read. Later they start wondering “*is it correct or not, is it positive or negative*” (C11). Independent thought comes as a result of interrogation and investigation. If student dares “*to question, disagree, to fight for independent ideas and support them by evidence - it means that he or she has achieved high level of criticality*” (C11). And opposite, if student comes with a question “*what do I have to do? Is it correct or not*” (C9), it notifies absence of CT. University faculty members acknowledge importance of learning to raise critical questions at university. And not only for the sake of cognitive training. “*It is crucial to learn to raise questions, sometimes even not convenient ones, because they can help to shorten work process. If you execute task humbly according instructions, you might come only at satisfactory result. But if you seek for original solutions, you have to learn posing critical questions.*” (C 9). Capacity to question, disagree, search for not ordinary decisions may condition health of a patient. Students, future doctors, have to raise questions for oneself: “*what is happening in an organism<...> why do I animate or do not animate patient, where do I have to stop and where to proceed further <...> those are complex things that not easy to converge into one algorithm*” (C5). Courage to ask is under demand in any professional field. Employers value those who pose authentic questions, that “*sometimes nobody knows answers to*” (C9).

CT concept in this category discloses as questioning and thinking independently that results either in intellectual or/and practical ability. Intellectual ability is connected with a scientific, academic work at university, practical - with mastering profession out of university. This ability is beneficial personally – it develops one’s mind and makes person stronger. But it is also beneficial for others. In case one (teacher or student) acts as “provocative agent” - questions reality and expresses independent thoughts, he/she models desirable way of teaching and learning and creates wider critical discourse. Social benefits lie down in outcomes of independent thinking – new, original solutions, innovations, responsible professionals and honest citizens.

### **3.2. Non-dominant ways of CT understanding**

#### **3.2.1. Category 7: CT is as a creative capacity**

There were few, but very strong notions about CT as a creative capacity in the research data. One respondent expressed steady believe that “*creativity is very important part of CT*” (C7). He sees interrelation between criticality and creativity in many aspects – refusal to follow patterns, freedom to think and to decide, to approach problems in non-common way, to think about “not possible” ways of problems resolution and try them, to create new rules and reality. “*Critically minded person creates himself <...> it is only way to come up with a new quality <...> more creative you are - more CT you have <...>. It is the essence. I do not care about other components- analysis, synthesis and so on. It is a business of special literature*” (C7). In short, critically minded person is a creator, discoverer of something new, at least for himself/herself.

Another idea about interrelation between creativity and CT is about embedded critical message into piece of art. “*CT is not necessary reflected in words. It can be reflected in piece of art <...> creative person cannot do without CT. Because artistic idea born after careful investigation of an environment, material and personal abilities <...> a piece of art has to bring some critical message, some idea that comes from environment*” (C8).

Those examples notify CT and creativity to be two equal parts of the same “apple”. Creative solutions require critical mind. Criticality is reflected in final products, whatever they be – piece of art, engineering solutions or math formulas. CT as well creative thinking is about bringing new, qualitatively different and significant message to oneself and others, as well as to society as such. Personal significance has to do with educating one’s mind and finding original ways of acting. Interpersonal aspect has to do with modelling criticality as part of creative thinking process with other and among others in academic environment. Other students get positive inspiration to think “out of box”, to look for non-uniformed solutions. Social significance lies in creative products to be used by wide audience and for progress of science.

#### **3.2.2. Category 8: CT is an attribute of civil, democratic society**

University is considered to be a very special educational institution, different from others in terms of providing wide approach, not necessarily limited to subject knowledge. “*Students have to know what is done for the sake of humankind and what has to be done <...> in this respect university and CT are closely connected. CT is a basic competence acquired at university*” (C10).

University widens horizons and allows seeing oneself as a part of a society, connected with others by past, present and future. CT helps to nurture “*an honest, with clear values person that contributes to a civil society*” (C17). Civil democratic society is understood as an open space for thinking without boundaries, speaking without fear (C17). Widely educated, free and responsible person is always committed to social good and ready “*to contribute meaningfully with one’s work*” (C8) and to act always in favour of mankind. In this respect, CT is characterized as socially orientated competence.

### **3.3. Relationships between categories of description**

The eight different ways of CT conceptions fall into following dimensions: CT as relationship; CT as practical result; CT as a learning process and CT as an integral part of another phenomenon.

### **3.3.1. Dimension I: CT as relationship**

Two categories – “CT as self-raising and self-improvement” and “CT as development of open relationship with environment” constitute this dimension. It represents CT concept as value-based competence. On the one hand, it has to do with value for personal development for one’s sake (categories 1 and 2). CT helps to reshape a person’s relationships with oneself and improve oneself – make better. It means more open, braver and wiser, self-critical. On the other hand, it is about bringing value for others (categories 1 and 2). A critically minded person is more sensitive to others and can adequately respond to the needs of a person, but it also tackles the wider community and society at large (category 2). It means disposition to respect diversity, to be open to the outside world and wonder, to search for the unknown and seek for truth. A critically minded person nurtures a holistic approach to an environment, is willing to build relationships with others in spite of differences, attempts to see more than is given by concrete moment, and relates past, present and future.

### **3.3.2. Dimension II: CT as a learning process**

Three categories – “CT as learning to doubt and recheck knowledge” (category 4), “CT as learning to raise questions and express thoughts” (category 5) and “CT as learning to choose” (category 6) build this dimension. CT is treated as developmental process of intellectual capacities. This process starts from learning to be healthy sceptical and not to take any information or scientific truth for granted. Students are taught to check and recheck knowledge, to look for claims, reasoned justifications. It is closely related to learning to raise open, critical questions, leading for purposeful and careful investigations, verification of theories and concepts. This process teaches to make informed, independent decisions and choices for personal (categories - 4, 5, 6), interpersonal (category 6) and social (categories 4 and 6) benefits. CT as a learning process embraces all people - their cognitive, emotional, affective capacities. A critically minded person is learning to become cognitively skilful, accurate and cautious, emotionally resistant, trustful in one’s capacity to learn to be critical, independently thinking.

### **3.3.3. Dimension III: CT as practical result**

This dimension is constituted by single, but largely represented category 3 – “CT as decision making instrument”. This dimension reflects CT concept as practical, positive end orientated. Its practicality has very concrete forms – solutions of problems or finding ways from complex situations, resolution of conflicts, coming up with right decisions, management of risks. CT helps to come up with a positive resolution of the right *things and the right resolution* of things. It means, that in some cases it is important not only positive end result, but also the way of its achievement. Right decisions in many cases include the process of critical analysis, consideration of different solutions, and making difficult, even risky choices in cases of uncertainty and ambiguity. Critically found result has value at personal and interpersonal scale. It means, that critical decisions have a positive impact on oneself and others either in academic or professional life environment.

### **3.3.4. Dimension IV: CT as an integral part of another phenomenon**

Two non-dominant categories – “CT as a creative capacity” (category 7) and “CT as an attribute of civil, democratic society” (category 8) constitute this dimension. CT is understood as natural, integral part of other concepts - creativity and civil society. CT is understood as an attribute of another phenomenon without any prioritization of what is of primary and what is of secondary importance. CT belongs to creativity and creativity entails criticality. Both are equally important for a person (category 7), other persons (category 7) and society (categories 7 and 8). Both are connected with originality and innovations, the evolution of a science and life world. CT is also a precondition and one of the main characteristics of civil society. More critically minded persons’ society has, more democracy exists.

## **3.4. Summary of the findings: Outcome Space**

Detected categories and variations of dimensions’ form outcome space. It is a summary of our study, that represents the perception of CT (what it is?) and notifies its significance (what is for?). Table 2 presented below shows the outcome space of our study. It connects conceptual (what is it?) and value (what is for?) components. The conceptual part is represented by categories and variations of dimensions, as inter-conceptual units. The value component is constituted by three different aspects - personal, interpersonal and social, that represent different levels of importance.

Table 2.

*Outcome Space: Conceptual and Value Components of University Faculty Members Perceptions of CT*

<b>Conceptual component</b>		<b>Value component</b>
<b>Variations of dimensions</b> (interrelations between categories)	<b>Categories</b> (concepts)	<b>Level of importance</b>
<b>CT as relationship</b>	CT as self-raising and self-improvement (1)	personal/interpersonal
	CT as relationship with environment (2)	interpersonal/social
<b>CT as learning process</b>	CT as learning to doubt and recheck knowledge (4)	personal/social
	CT as learning to raise questions and express thoughts (5)	personal
	CT as learning to choose (6)	personal, interpersonal, social
<b>CT as practical result</b>	CT as decision making instrument (3)	personal/interpersonal
<b>CT as an integral part of another phenomenon</b>	CT as a creative capacity (7)	personal, interpersonal, social
	CT as an attribute of civil, democratic society (8)	social

It is interesting to notice, that there is no big gap between indicated levels of importance. Six categories stand for personal, five for interpersonal and five for the social value of CT. Same categories/concepts notify two or even three levels of importance, with the exception of the fifth category. In fact, all three levels of importance are interrelated, as they are equal parts of the same process and follow, support each other. CT as relationship starts from personal efforts and for personal good, but further it steps out of private space and touches others, as well as wider society. CT as learning process also begins at personal level, but continues as a process with a clear understanding of CT as entailing broader sense of value. Even instrumentality of CT, conceptually practical result orientated, is received as having not only singular value. The last dimension, formed by two non-dominant categories, notifies all three levels of importance within category 7, and one, social level, within category 8. The latter one is clearly advocating for CT as having not doubtful social value. The figure 1 below demonstrates hierarchical relationships between value components and categories of conceptions.

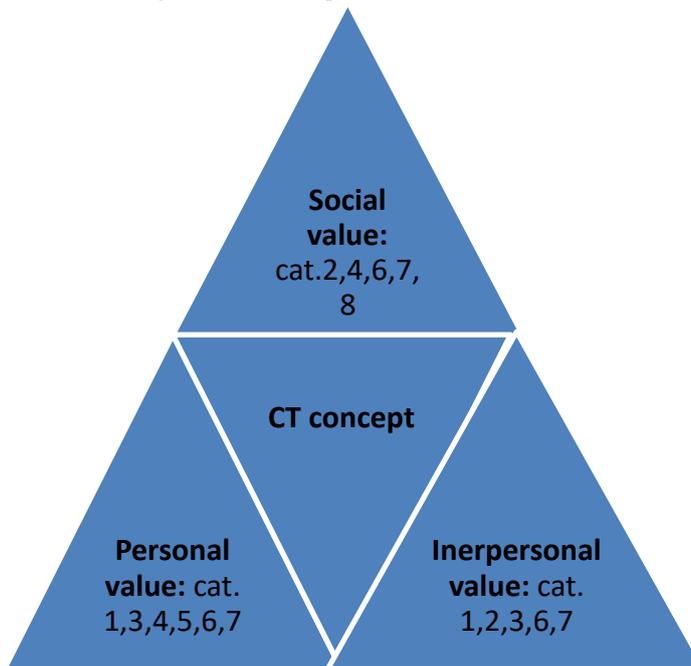


Figure 1. The hierarchical relationship between value components and categories of conceptions

There are two possible ways to interpret the hierarchal order of concepts and value components. One way is to look at the size of three triangles and discover that they are equal. It means, that all three components receive qualitatively equal attention from the research participants. Another way is to look at the bottom and at the upper part of the whole figure. Personal and interpersonal value components are placed at the bottom because of two reasons. First, it is because of the fact that they are about person to person contact and individual interrelation either between the same person (internally) or two persons or among a relatively small homogenous group (externally) – teachers’, students’, and employees. Second, because of the common space shared by individual and others in the story’s contexts. This space is either academia or a specific professional field where he/she meets and the shares value of CT. Social value component is placed on the top because is more distant in terms of space (neither academia nor professional field) and ‘does not notify any specific group to share value of CT.

This hierarchical relationship represents summed up, generalized perceptions of CT and its value. Picture of individual perceptions might be different. But the goal of our study was is no possibility to the weight personal, interpersonal and social value of CT.

#### 4. DISCUSSION AND LIMITATIONS

The research findings reveal quite a broad spectrum of CT perception – from openness towards oneself and critical self-awareness till the development of new value for others, support of democracy. The research results prove that CT is recognized not only as cognitive ability, mastery of knowledge and skills for better academic results or/and personal development. This is considered to be a start, but not an end point. CT competence embraces groups of people, communities and societies, and helps to understand them better, to establish authentic relationships, individually or/and collectively to come up with informed decisions, right choices, to contribute to innovative solutions.

*After years of viewing higher education as more of a private good which benefits only the student, we are again beginning to appreciate higher education as being also a public good which benefits society. Is it not a wiser social policy to invest in the education of the future workforce, rather than to suffer the financial costs and endure the fiscal and social burdens associated with economic weakness, public health problems, crime, and avoidable poverty? (Facione, 2015, p.1).*

This statement is strongly supported by our research data. University faculty members consider CT as “solving social problems”, “bringing social message with new products development”, “contributing to democratization processes”, etc. It proves CT to have individual and social dimensions, as equally important and interconnected (Davies & Barnett, 2015). Coming back to HE mission and goal to educate knowledgeable, responsible citizens, capable to live in changing reality and contributing to science and social progress (Kay & Greenhill, 2011), we could say that CT concepts, shared by university faculty members are in line with official statements.

The research findings also disclosed importance of CT dispositions. Openness, integrity conscientiousness, truthfulness, believe in a reason are those dispositions that are helpful not only in academia environment. Person, disposed to CT, is able to monitor, correct and manage oneself in any life situation. He/she nurtures open, critical relationship with oneself and others. It was not our task to measure if CT skills or dispositions have bigger priority for our research participants, but we can confirm that university faculty members do not separate them. On the contrary, critical skill and action is almost not possible without critical habit or critical spirit (Siegel, 1988).

*People with a critical spirit tend to ask good questions, probe deeply for the truth, inquire fully into matters, and strive to anticipate the consequences of various options. In reality, our skills may or may not be strong enough, our knowledge may or may not be adequate to the task at hand. The problem may or may not be too difficult for us. Forces beyond our control might or might not determine the actual outcome. None of that cancels out the positive critical thinking habits of mind with which strong critical thinkers strive to approach the problems life sends their way (Facione & Gittens, 2016, p.2).*

Our findings prove that critical spirit or habit of mind at a certain level penetrates all conceptual categories and dimensions of variations respectively as well as value components.

In terms of CT conceptualization as personal trait, thinking process and end result, our research findings are in line with findings of scientific literature analysis. University faculty members treat CT as complex phenomenon, which manifests as personal ability in process of teaching and learning and has clear positive end. The most remarkable abilities are self-improvement and self-raising. They correspond to self-regulation disposition, as named by Facione (1990) – to regulate oneself means consciously to monitor one’s cognitive activities and be ready to improve. Ability to improve and to develop open relationship with environment requires open-mindedness (Beyer, 1987; Facione, 1990). Openness to oneself and to others is highly valued by faculty members, and is recognized as necessary precondition for self-improvement and critical, open relationship with others. University faculty members recognize CT as process through doubting and questioning, checking knowledge, making right decisions, reasoned choices. All this include wide range of skills – explanation (Ennis, 1987; Facione, 1990), analysis (Halpern, 1998; Facione, 1990, Beyer, 1987; Siegel, 1988), interpretation (Facione, 1990), evaluation (Ennis, 1987; Facione, 1990; Beyer, 1987), reasoning (Halpern, 1998; Beyer, 1987). CT as practical result is conceptualized by faculty members as decision making instrument. They consider it as positive outcome of problem solving (Ennis, 1987; Halpern, 1998; Beyer, 1987), making correct inferences (Ennis, 1987; Facione, 1990, Beyer, 1987) and coming to justified solutions.

In terms of CT conceptualization as individual capacity, current research findings confront results of previously done scientific literature analysis. We found that many research papers describe CT as individual cognitive ability and disposition directed towards positive end result mostly (Fitzpatrick, 2006 ; Helsdingen, van Gog, van Merrienboer, 2011; Kilic-Cakmak, 2010 ; Kreber, 2014; Magno 2010; Raveendra & Chunawala, 2015). CT as relational and social concept got significantly less attention (Danvers, 2016; Turner, 2005; Walkner & Finney, 1999). Phenomenographic study enabled us to disclose slightly different approaches on CT. This concept got quite distinctive appearance in our research. Firstly, it showed up as critical relationship

between oneself and another oneself, oneself and others. Secondly, it manifested as learning process to become more knowledgeable, aware, stronger, better in academic and non-academic settings, for oneself, others and society. Thirdly, it disclosed as practice orientated result with strong emphasis on making right decisions for one's and others' sake. This approach has most in-common with concepts found in the researched literature. CT as part of other phenomenon has been partially echoed in the scientific publications as well. However, current research proved that creativity is considered not to be just one of the characteristics of CT, but rather constitutes, and penetrates another phenomenon, as the same with civil, open society. CT is three in one – precondition, process and outcome of building democracies.

Otherness of our results is conditioned by selected research strategy. We stepped into the research field without suggestions for definitions and ready-made theoretical frameworks. Openness to individual experiences, willingness to meet unexpected ideas created possibility to come up with the results that we have now. It will be interesting to compare them with the results of quantitative research that we are to start about. Quantitative research instrument will be built on the results of the phenomenographic study, findings of scientific literature and in-country study programs analysis.

This study has some limitations. *First*, we were not able to ensure bigger representation of different study programs due to the time limits. The majority of interviews were taken during summer holidays. We approached teachers in person during their free time at home or close neighbourhood. We refused the possibility of doing interviews with support of virtual means. We wanted to have close and not mediated contact, in order to keep natural flow of the conversation, and avoid possible technical problems. *Second*, we were not able to ensure wider representation of different experience in teaching CT. We could invite teachers who teach CT as a separate subject, but we do not know many of them. And those that we know belong to our research team. *Third*, our article does not describe relationships between teachers' conceptions of CT and experiences of teaching CT. It would be interesting to compare their conceptual considerations with practice. Because of the big amount of the data, we were not able to present everything in one article. The study that we plan in the near future will cover all aspects of our phenomenographic research. We will be able to compare CT concepts and their practical application.

### Research and Publication Ethics Statement

This article is approved by the Ethics Board of the Education Science and Social Work Institute at Mykolas Romeris University, Lithuania. The permission date 12/12/2019, no ESDI-12/02. The research process as well as publication were introduced to the Ethics Board of the Education Science and Social Work Institute at Mykolas Romeris University, Lithuania. The Board proved that our research and publication ethics are complied with regulations for the intellectual works.

### Contribution Rates of Authors to the Article

All authors participated in every stage of the research and equally contributed to the article. The names of the authors do not reflect level of the contribution as they are listed in the alphabetic order.

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