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How is critical thinking valued by the labour market? Employer perspectives from different European countries

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How is critical thinking valued by the labour market? Employer perspectives from different European countries

Although Critical Thinking (CT) has been a desirable aim expressed both by higher education institutions and labour market professionals, studies on what CT means and what it looks like in the workplace are scarce. The current study intends to tackle this gap by sharing findings about the importance of CT and its practical manifestation in professions from the points of view of 189 European employers. Data shows that CT is recognized mostly as: (1) the capacity to avoid mistakes and make right decisions; (2) the capacity to correct and regulate oneself; and (3) as a social responsibility. Our findings prove that CT is valued not only insofar as it contributes to professional success, but also for personal improvement and common good. Unfortunately, participants tend to share general and ambiguous ideas about the importance of CT rather than presenting concrete, practice-based professional life examples illustrating its understanding and application within their organizations.

Keywords: higher education; critical thinking; labour market; employers

Introduction

The global challenges of the 21st century (e.g. the political and economic crisis, social instability, climate changes) have placed Critical Thinking (CT) in the core of modern societies, and higher education has a primary goal in the preparation of undergraduate students to be active citizens and critical professionals. In response to those challenges, universities, accreditation bodies, and employers frequently call for CT in new graduates (WEF 2016; European Commission 2017). Nevertheless, serious concerns remain regarding the gap between higher education CT outcomes, the workplace and societal demands (Flores et al. 2012; Lee et al. 2015), especially if universities continue to see CT narrowly as the deployment of cognitive skills by individuals within their knowledge domain, without going beyond the skills-based ideas and conceptions that prevailed in literature (Barnett 1997). Higher education, with its mission to educate

knowledgeable and responsible people capable of living in rapidly changing complex realities, often fails to address the challenge of real world complexity and multidisciplinary (Kay and Greenhill 2011). More and more frequently CT is treated as an integral part of the core global competencies needed to live successful future lives (OECD 2018).

Although CT is being increasingly debated within the labour market (Davies and Barnett 2015), many studies did not take the employers' perspective or workplace characteristics into account (Grosemans et al. 2017), and empirical studies aiming to characterize how CT is needed, understood and applied in the workplace remain scarce, most of them focusing on academic perspectives (Moore 2013). Few attempts to address these gaps - academia and workplace - are found in the literature. For instance, in professions where the current practice models remain unsubstantiated by scientific evidence (e.g. in osteopathic medicine), CT is seen as particularly important for clinical practice (Grace and Orrock, 2015). In economics, CT is imperative for dealing with rapidly changing business environments in which inaccurate decisions and unreasonable thinking can lead to a financial crisis, as we verified in the very recent past (Knauff et al., 2010; Lunn, 2011).

Conclusions drawn as to the need for CT and its understanding across professions are not always clear. Several reasons have been identified. A mismatch between the discourse used among academic representatives in different countries (OECD 2016), between claims of educational experts, teachers and students (Indrašienė, Suboč, and Penkauskienė 2012), between employer demands and educational realities (NEA 2010; WEF 2016) is an obstacle for finding a common language on the topic. In general, the educational, political and economic documents (e.g. from Higher Education Institutions, Governments, Business Corporations) are too vague as regards what CT is,

even knowing that the term is being increasingly referred to as needed by future professionals and citizens. This makes it difficult to collect, analyse and interpret data (Sin et al. 2015), and to implement CT in different practical fields. The lack of University-Business Cooperation projects in curricula design is also evident. Cooperation focuses mainly on research and the development of technology and knowledge transfer procedures (Galán-Muros and Plewa 2016), and the premise that CT is a generic skill of similar understanding and application across domains (Davies 2013), leading to the provision of ineffective generalist CT courses taught in institutions around the world (van Gelder 2005).

To address these issues, this paper presents a qualitative exploratory research study that examines the personal perceptions, beliefs and experiences of employers from different fields on the topic of CT. Different interpretations and themes emerged from the data helping to better illustrate the understanding and expression of CT in the workplace. The study is intended to support universities with an overall understanding of CT application in the workplace in order to fill the existing gaps between the undergraduate curricula and the expected needs of new professionals.

Method

Focus group interviews, based on the work of Morgan (1996) and Onwuegbuzie et al. (2009) was applied in this research, with the aim of collecting data about employers' views on CT phenomena in the labour market. Focus group participants were asked to share personal opinions and experiences about the manifestation of CT in their own workplaces and in the labour market in general. This method was chosen due to the possibility of generating an appropriate volume of data in a relatively short time, as well as obtaining rich and interesting material - a result of intense group interactions (Rabiee 2004).

Participants

The selection of research participants was carried out using a purposive sampling approach. The selection criteria were the following: 1) no less than 3 years of management experience in actively working organizations; 2) positions held - heads and/or senior specialists responsible for recruiting new staff members. In order to ensure diversity in the research data, it was important that the focus group discussions involve participants from different professional fields and sectors. A 'snowball' strategy was used for simultaneous collection starting from the researchers' contact lists and continuing with invitations to others according to the participants' recommendations. This convenient strategy helped in a limited time frame to reach a busy and not easily accessible group of employers, especially those from the private sector. The selection of research participants was not based on any hypothesis about jobs being more and less in favour of CT or requiring it. Researchers decided to choose people from a familiar neighbourhood environment and to invite them for discussion on a topic not directly related with their daily work. Intentionally, no concept of CT was given to the focus group participants. Researchers looked for authentic ideas and opinions rather than for validation of one or another theoretical concept. For the sake of common understanding, researchers representing different European countries, research traditions and academic practices, agreed upon a unified CT concept during the research process. It was decided to follow a statement that appeared as a consensus of expert opinions from different fields (Facione 1990). For us, an international group of researchers, CT was "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 judgement is based" (Facione 1990, 2). According to this definition, good critical thinkers rely upon not only cognitive skills and sub-skills, but also on affective and dispositional

components, also called the ‘critical spirit’ (Siegel, 1988) or the ‘spirit of inquiry’ (Bailin and Battersby 2010). This means that for individuals to think critically, they must not only be able to start or engage in a thoughtful task, but also be persistent and willing to do so (Halpern 2014).

In total, 32 focus groups were carried out between October 2016 and February 2017, involving 189 participants from nine EU countries (Belgium, Czech Republic, Greece, Ireland, Italy, Lithuania, Portugal, Romania, and Spain). Each focus group was composed of four to seven participants. The average duration of the focus groups was 83 minutes (min= 46; max= 110). Focus groups were composed of 93 males and 96 females with an age range between 24 and 65 years, representing the public (n=67), private (n=66) and NGO sectors (n=56). The research participants covered 22 different professional fields which were, in the analysis stage, grouped into four larger categories, according to major study fields: Biomedicine (n=29); STEM (n=28); Social Sciences (n=125); and Humanities (n=6)¹. With such heterogeneous samples, it was possible to reveal the diversity of the phenomenon researched and avoid a bounded setting that could have a negative impact on the research data.

Procedure and data analysis

The research process followed the Patton (2002) conceptual research steps: planning, focus group composition, implementation and data analysis. The first step (planning) involved the preparation of different documents required to organize the focus groups, such as the *Invitation letter*, *Guidelines for researchers*, *Consent letter*, and *Thank you*

¹ Note: A detailed summary of the characteristics of the focus group participants is available from the authors upon request.

letter, as well as the design of the research instrument for data collection and scheduling. While identifying the questions, one opening question (Table 1, question A) and five analysis questions (Table 1, questions 1-5) were generated.

Table 1 goes here (see at the end).

The composition stage included the selection of potential research participants. Each transnational research team used agreed selection criteria and made a preliminary schedule for the focus group discussions. The implementation stage started with greetings and an explanation of the research aim and procedure, as well as the collection of signed consent to participate in the research. Each focus group discussion was conducted in the participants' national language by two researchers – a moderator and moderator's assistant. The moderator was responsible for organizing, conducting and controlling the whole focus group process. First of all, participants were asked to introduce themselves. Moderators emphasized the rules of confidentiality and invited focus group participants to ask clarification questions. Then moderators introduced the main research question and started the discussion following the interview questions. All focus group were recorded in two ways: taking notes and tape recording. The *Thank you letters* were sent out to focus group participants after the discussions.

Data analysis started with the transcription of the audio records in the national language. Researchers made transcriptions and started the process of data analysis immediately after the group sessions ended. Each participant's speech was coded according to the agreed system (*sector, _country, _number-of-participant, _professional-field*), which worked for the data analysis and confidentiality of the participants.

Transcripts were analysed using thematic analysis (Braun and Clarke 2006) due to its appropriateness for summarizing key features of an extensive data set and the possibility of generating unanticipated insights (King 2004). The data-analysis process consisted of repeatedly reading each transcript until all the relevant text was categorized and all themes were compared with each other (Creswell 2014). Categorized data was translated into English by in-country research teams and prepared for final analysis and interpretation. Themes were then reviewed iteratively by two independent researchers with reference to the entire dataset, refining it as a process of resolving disagreement until a final set of themes and subthemes had emerged.

Findings

This section presents the main findings as regards the importance and manifestation of CT in the workplace of different professionals and specialists. Three major themes emerged from the data and are presented separately, even though their interaction provides us with a general overview of the participants' perceptions and experiences of CT understanding and application. Data analysis reveals CT as an important practical capacity, manifested in the avoidance of mistakes and making the right decisions, self-correction and self-regulation, and social responsibility. We present a short overview of our findings, pointing out common aspects and peculiarities of focus group employers' opinions.

CT as the capacity to avoid mistakes and make right decisions

The capacity to avoid mistakes is directly associated with right/correct decisions/judgements. According to the views of the research participants, there are concrete ways to come up with right decisions. One is to employ and practice critical interpretation skills that help to receive and to transfer messages in the right way.

Practising such skills reduces the possibility of being deceived and of deceiving others.

The latter aspect was expressed by representatives and professionals in all sectors – health specialists, public administrators, educators, tourist guides, etc. Research participants underlined that it is essential to know “*how to decode the patient language, make sure she/he understood the instructions*” [PB_PT_2_HEA]; that it is “*truly essential to read needs and interpret them with synthesis*” [PR_IT_2_ADMIN]; that “*ability to interpret (...), to understand [what is said] makes (...) difference in the daily work*” [PR_PT_3_TOU]. Interpretation is treated not only locally, but also holistically - as the ability to interpret messages coming from more complex contexts and diverse environments, stepping over professional, geographical and cultural boundaries:

Now critical thinking is crucial in a sense that we are thrown in a mass of information. We have to sort out it: this is a lie, that is propaganda, this is interpretation. If one does not think critically, it will be not possible to orientate oneself in today’s world - to find out where it is truth and where not. One can easily get manipulated by others in our days [PR_LT_6_HRS].

Employers representing biomedicine, STEM, and the social sciences expressed their wish not to be misinformed, misled, or manipulated by others because of the overall need to stay on the right track. This means not getting lost among different ideas, not losing direction and moving ahead according to agreed visions/strategy/plan, etc.

Another way to avoid mistakes and come up with right decisions is to engage in sound analysis, synthesis and evaluation of claims. Good analytical skills work for better understanding of a specific task or situation, and for taking the right action or developing a “*well-reasoned outcome*” [PS_IE_4_ENG]. Employers considered analyticity to be an efficient disposition because it is connected with readiness to act, to look for possible solutions to particular problems asking for a non-traditional approach.

It means “*out-of-the box thinking*”, which incites going beyond the typical ways of reasoning and looking for new scenarios and innovative ideas.

Many examples presented reflect analyticity not solely as a disposition, but as part of a complex skills-analysis and synthesis of different point of views, sources of information, interpretation of visible and hidden messages, evaluation of arguments and possible scenarios. The quality of the arguments depends on evidence, checked in a concrete or broader context. Checking one another’s arguments means “*to be well prepared – to come with done homework. And not only ours, but also other’s. How else could we understand who is right and who is not*” [NGO_LT_3 _HUMAN_RIGHTS]. In general, reasonable argumentation comes as the outcome of purposeful and systematic employee efforts to produce clear, generalized ideas and decisions. In such cases employees have to be able to explain how the decisions were arrived at:

We look at how candidates discuss a situation and present solutions, and we draw our own conclusions (...) it’s not about coming up with a right or a wrong result only, but it’s more about the way they build the solution. Therefore, all the thinking process that they have until the proposal of solutions [PR_PT_1_ENG].

Employers emphasized that those who demonstrate critical analysis and evaluation skills usually also demonstrate analyticity and systematicity, and are self-confident in their decisions regardless of the profession and position held. Self-confidence integrates both personal and interpersonal aspects, such as honesty and mutual trust. Self-confidence also relates to resistance to wishful thinking, and the ability to withstand external or group pressure to accept non-justified decisions. Self-confidence has a dual role: it is a precondition for coming to a right decision and the outcome of the decision. Good judgments require self-trust, self-respect and the “*desire to be better*” [PB_RO_9_EDU].

The ability to explain and transfer messages or ideas is another way to give rise to the right decision. It is not about an aspiration to argue with somebody or against someone, or eagerness to prove one is right, but about a wish to be understood by others. In this sense, explanation is closely related to interpretation, as it manifests in employees' attempts to rightly transfer personal and professional ideas to others. In some cases, explanation has to do with efforts "*to translate*" professional language into ordinary language, because "*it is crucial to know what a client wants from us and what we can do for him/her*" [PB_LT_5_ENTERTAINMENT]. Mutual understanding is possible when sound argumentation and explanation abilities cross, addressing the context-specific nature of each workplace.

It has to be emphasized that employers make a clear difference between the concepts of "*seek for truth*" and "*come up with right decisions*". To "*seek for truth*" means the continuous and long-term process of learning, (re)search and self-improvement. To "*come up with right decisions*" means the achievement of specific goals during a concrete, time-framed process. Still, both concepts include sensitivity to personal bias, which helps to avoid mistakes in the workplace, as well as flexibility and the ability to adapt to ever-changing realities, and to remain open to divergent perspectives. The avoidance of mistakes and acceptance of right or correct decisions has professional and human/universal connotations. On the one hand, employers look for employees capable of accurately completing professional tasks. On the other hand, employers value those who keep looking for the right decisions, having these general mind-set and personal intentions.

CT as the capacity to correct and regulate oneself

Self-correction is an outcome of careful self-monitoring, self-reflection and self-evaluation. Self-reflection is displayed in the employees' constant self-questioning and

critical analysis of thoughts, ideas and actions. Self-reflection aims at professional improvement as well as at seeking for truth and right decisions or judgments.

Employers admitted that sometimes self-reflection is uncomfortable because it exposes one's mistakes. However, it is necessary in order "*to remain open and to kind of self-critique the solutions as you arrive at them*" [PS_IE_3_ENG]. Self-reflection helps to detect personal bias, evaluate it and correct oneself. It minimizes mistakes and supports professionals in their search for the best decisions. Self-reflection and self-evaluation were mentioned across all the researched sectors, professional fields and specialities.

Self-reflection is valued not only because it enables one to come up with the right professional decision, but also because of its overall educative aspect. It challenges the "taken for granted" opinions, previous beliefs, and inspires one to learn from others. Employers said that is important to be "*in a constant process of analysis of weaknesses and strengths*" [NGO_PT_1_ARTS], as this creates an adequate relationship with oneself, the others and the world. Self-reflection is neither an innate nor an easily acquired capacity. Employers related it with the cultivation of self-awareness – knowing what one wants to achieve, is capable of, and the knowledge of personal limits.

It is not enough to know oneself and one's professional competencies. Employees have "*to measure*" themselves in a wider context, because the labour market "*is moving towards an ever more widespread international dimension*" [PR_IT_3_EDU]; the world itself is more and more diverse and pluralist. Future professionals and specialists will therefore be "*dealing with life, with complex communities (...) environmental (...) sociological (...) technical*" [PR_IE_3_ENG]. For this reason it is important to keep awake, be watchful and open to changing reality. Employers also argued that those not willing to reflect, self-correct and improve "*will*

do more routine jobs, contributing less to the institution's mission" [PB_IT_2_EDU] in a close perspective.

Self-correction and self-regulation have a strong interpersonal aspect. Employees have to listen to others, to hear what is said, to consider different points of views and to correct themselves. This suggests that self-regulation goes hand in hand with open-mindedness – respecting diverse opinions and points of views, and considering different experiences. Sometimes openness helps to see oneself better from the “outside” and self-correct:

For me it is very important when my colleagues question my suggestions and decisions in favour of better and best solution. Critical attitude or position of ‘devil’s advocate’ helps to find best solution – better than I myself have proposed [NGO_LT_6_LAW]

The “devil’s advocate” position does not work well in all cases. Sometimes employers keep their own opinions unchanged. Nevertheless, the majority of research participants value those who think openly and are not afraid to present publicly different, alternative ideas.

The practical aspect of openness has to do with moving from the usual, “old way” of thinking and mode of actions towards updating professional knowledge and innovative practice. Employers referred to openness mostly as a general mind-set and a personal value. They speak about the ability to surprise and be surprised, to be attentive and responsible for personal development:

What is really important – wonder. If one does not wonder at least three times in workday, one has no critical thinking at all. [PB_LT_3_EDU]

The paradigm has changed; contrary to what used to happen, nowadays we tell people that they are responsible for their own evolution, they are responsible for their career. [PR_PT_3_ENG]

Self-correction and self-regulation have a great deal to do with intellectual growth and cognitive maturity manifested in decisions that are either quick and immediate or slow or postponed. To be cognitively mature means to be more than a knowledgeable person. Besides expertise, it also includes intuition, insight, and flexibility. Cognitive maturity has to do with internal intelligence and broad horizons. Cognitive mature persons can correct and regulate themselves because they “*read messages that the world sends*” and are not afraid to acknowledge mistakes. Furthermore, they value different opinions and consider ethical norms (professional and universal). It might be said that cognitive maturity is in line with intellectual modesty, but at the same time it does not contradict self-confidence. Cognitively mature persons count not only on themselves, but also on others:

When he faces a patient he also faces himself (...) he has to develop critical thinking in the following sense: neither put himself in the situation of incapable, nor put himself in the situation of fully capable. To deal with a situation, to call a colleague to see, whatever the moment in life we are in. it only benefits those who do it, and obviously those who receive it [PB_PT_1_HEA].

Cognitively mature professionals seek to correct themselves for the sake of those whom they serve in different professional fields - e.g. health, education, engineering, social work, ICT, public administration, etc.

The data revealed a quite complex concept of self-correction and self-regulation. On the one hand, such a capacity is related with professional improvement to achieve right decisions and on the other hand, with personal growth and social integrity. This implies the capacity to correct and regulate oneself. It integrates critical analysis and reflection, synthesis and evaluation, open-mindedness and cognitive maturity. Self-correctness and self-regulation are a personal endeavour, inspired and supported by the workplace environment and community.

CT as social responsibility

Employers linked CT with the connotation of social responsibility, as it has to do with responsibility that manifests as sound and efficient communication, mutual understanding and unified team efforts. This kind of responsibility is twofold. On the one hand, it is connected with efforts to contribute to corporate success – efficient problem solving, development of high-quality products and organizational competitiveness. Research participants mentioned that organizations are stronger when each team member contributes to working cooperatively. This notion includes feelings of ownership, corporate responsibility and mutual trust:

We are stronger if we are together: It is an interpersonal relationship competence. Why this? Because we believe that this ability to work as a team, not being isolated, will also allow us to grow, which does not mean that we do not have the capacity to be alone, introspectively, to think, but to know that we are part of a team. [PR_PT_3_ENG]

On the other hand, this responsibility is also connected with personal growth. Togetherness makes not only the organization stronger, but also its members. The understanding of this interconnectedness and interdependence is treated as an attribute of a critically minded person. Employers referred to missing such a way of thinking and argue that this capacity will be:

Needed in the near future above all (...) Knowledge, we have. We don't have the proper context maybe. We don't have cooperation and communication and self-awareness skills, perhaps. And we complement one another. [PB_GR_TEI_7_EDU]

The capacity to combine self-awareness and self-improvement with social responsibilities was considered important by representatives of all professions and all sectors. Research participants talk about the need for “*relationality*” in medicine

practices, for “*cooperativeness*” in engineering, for “*togetherness*” and “*strategic decision making*” in charity and human rights, for “*contribution to social issues*” in education, for “*sharing, communication and social thinking*” in law:

Many colleagues, members of a professional community that I belong to, are individualists. They have little wish to share ideas (...) I don't know why. I only observe some tendency to avoid sharing and social thinking. I can only guess that we lack such habits that are necessary for us. [PB_LT_4_LAW]

Representatives of different specialities treat the avoidance of sociality as a lack of CT and a serious obstacle for individual, professional and corporative growth.

Another kind of interpretation is related with contributing to overall good: efforts to meet people's needs, to overcome societal challenges, and make some change in the lives of all of us. This is considered no easy task, because it requires knowledge and understanding of a broader context:

How understand[ing] the role in society and how that develops I think because more and more work is actually dealing with society (...) People are much more informed now. They know much more about their rights and entitlements, so you have to be able to deal with all that as well as just dealing with the day to day. [PR_IE_1_ENG]

Critically minded people have to be ready to cultivate and improve their thinking in order to be useful and supportive to others. This includes constantly updating knowledge, broadening literacy skills, and widening horizons. A socially responsible person is proactive, empathic, and emotionally mature.

It has to be said that very few examples (quotes) from the professionals were specific illustrations of practical CT cases in a form of social responsibility. Instead, there are several examples of general reasoning in the current data. Research participants share their opinions on the overall social role of CT, but what is important

is that they indicate how it has to be achieved – by constant learning, personal and professional growth, by taking challenges, by interaction and collaboration.

Discussion

The research findings reveal quite a broad interpretation of the CT concept and its role in professional practice. It is striking here that employers are calling for many often-desirable educational ends under the topic of CT. Some of the attributes that they variously look for within this scope are: problem solving, communication skills, clinical judgement, truthfulness, tolerance to uncertainty and creativity. However, even accepting that the consideration of other significant human traits is important, proper distinctions between CT and some of these educational aims were not the purpose of this paper and still need scrutiny.

In general, CT is understood not only as a cognitive skill and/or disposition, but as critical and active position taking, personal initiative and social responsibility. Professionals across fields endowed CT with a similar interpretation, and as a basis to be developed by new graduates. For them, an ideal professional must present an informed habit of thinking and the desire to learn and improve both personally and professionally. Thus, CT is anchored in interdependent cognitive skills (e.g. self-regulation, evaluation, interpretation) and disposition elements (e.g., analyticity, systematicity, open-mindedness) allowing professionals to anticipate and be prepared for any situation (Sin et al., 2015), as well as to regulate and monitor their own thinking and behaviour in such a process. This was noted by Halpern (2001, 284):

Virtually every business or industry position that involves responsibility and action in the face of uncertainty would benefit if the people filling that position obtained a higher level of the ability to think critically (...) Critical thinking skills offer the greatest chance of success for creating and adjusting to change.

Therefore the first implication is that it is imperative for universities to ensure a continuous shared understanding as to whether students' CT learning outcomes are aligned with the expectations and needs of labour-market stakeholders.

The emphasis on dispositions suggests that CT cannot be developed on a short-term basis. It is something that emerges from experience, lifelong learning and continuous effort. Both CT skills and dispositions empower people to think and act critically (Bailin and Battersby 2010; Halpern 2014). This perspective is aligned with several other researchers, including Facione (2000, 81):

Educational and professional success require developing one's thinking skills and nurturing one's consistent internal motivation to use those skills.

The complementarity between skills and dispositions requires different approaches and methodologies in CT education. If the development of skills can be supported through the curricula (e.g. establishing different learning outcomes or performance indicators), dispositions should be developed through pedagogy (Facione 2000), e.g. motivating students to think and change their attitudes and behaviours towards CT. If a university wants to develop students' powers of criticality (Barnett, 2015), teachers have to engage with them in certain ways, to provoke them, to face them with awkward situations, and to push them into discomforting spaces where they have to form their own appraisals. This is much less a matter of formal curriculum design and much more a matter of 'critical pedagogy' (Freire, 1970, 62). Valuing dispositions goes straight to the university mission and its responsibility to educate critically minded persons. The implication here is that universities should promote teacher training and support to foster students' CT dispositions across the curricula (e.g. embedding CT within the institutional quality teaching frameworks). Also, more than adopting CT teaching practices within each classroom (i.e. at the individual course level), it is crucial to align

them at the program level – this will potentially increase the possibility of changing students’ thinking habits and ensuring CT transfer across disciplines.

Professionals understood CT in a broader perspective, where it reveals itself as essential both for professional and organizational efficacy, and also for personal improvement and common good. It plays a major role in directing professionals both to the desired outcome and in attending to people’s needs and expectations, considering different ethical and social concerns, contributing in this way to a better future and quality of life. Accordingly, CT was associated with social responsibility, and integrating the professionals’ personal and interpersonal dimensions.

However, participants mainly focus on the “critical reasoning” and “critical self-reflection” forms of CT within professional practice – associated with the “skills-plus-dispositions” view of CT (Barnett, 2015, 13). Thereby, the implications that CT may have on the preparation of new graduates as critical professionals for the benefit of society, entrenched in social justice and dialogical strategic questioning practice (Trede and McEwen 2015), were neglected: e.g. the importance of a health professional as a critic in participating and constructing national health policies, and arguing against authorities and power structures towards social justice. This calls for the doctor to be a constructive critic of a nation’s health policies and arrangements. It also calls for the doctor to speak out against the authorities and even to take on the role of a ‘whistle-blower’. This is far from easy on several fronts (not least, the formation and sustaining of a doctor’s professional identity vis-à-vis colleagues and power structures). This ‘critical action’, is proposed by Barnett (2015, 15-16):

A critical person exhibits a critical orientation toward the world and has a trait, thereby, to act accordingly (...) While skills and dispositions are crucial for critical thinking, they are not sufficient unless a person is in her- or himself critical and unless she or he is disposed to act in a critical vein. To adapt a famous line from

Kant: criticality without critical thinking skills is empty; critical thinking without action is myopic.

Universities should therefore not neglect this socio-active dimension of CT that implies understanding of how CT can contribute to a transformative and social development process, enabling students to attain a level of emancipatory criticism (Giroux, 2010).

Limitations

In the current qualitative exploratory research, different methodological limitations can be identified that might have a potential impact on the findings. These are mostly related to the profiles and language of research participants. Although researchers attempted to ensure heterogeneous representation in terms of professions, age, sex, and work experience, the representation still has to be treated as uneven for the purpose of coming up with more generalized conclusions. We assume that differences in numbers (for example, very high representation in the Social Studies group and very small in Humanities) do not allow conclusions to be drawn for separate professions and study fields as such. Data was collected and recorded in national languages and later translated into English. It might be that some ideas were left not fully expressed, or some meaning lost in translation. Many ideas were left out of the current research focus because of their conciseness and lack of context.

This study shows that CT is considered to be an important part of various professions, but it does not reveal significant differences in CT concept understanding and its practical expression. It might be that individual interviews would lead to better visualization of CT and more in-depth insights. Unfortunately, the planned volume and time of the research project led to a different research method. In order to detect important peculiarities leading to valid conclusions, further research studies should be designed (e.g. comparative, survey research).

Final considerations

This paper aimed to characterize how CT is understood, needed and expressed by European employers, representing biomedicine, STEM, social sciences and humanities. Employers' interpretation of CT falls into three main categories: (1) capacity to avoid mistakes and make right decisions; (2) capacity to correct and regulate oneself; and (3) capacity to be socially responsible. A multitude of data proves CT to be desirable and needed, rather than an evident ability. Employers tend to share general and ambiguous ideas about the importance of CT rather than to present concrete, practice-based professional life examples that illustrate its understanding and application within their organizations.

They also treat CT as a spacious ability embracing many desirable outcomes: good professional knowledge, social skills, psychological resistance, etc., which leads to the conclusion that CT is associated with many other desirable professional aims and characteristics. This is a serious matter, since to fail to make proper distinctions here is to fail to give due weight to CT itself. Not just its scope and challenges but, just as importantly, its possibilities go unaddressed. In this sense, CT is only one of many desirable educational aims, and should therefore be apportioned its due and only its due weight; and the tensions between it and other educational aims should be identified and reflected in wise curricula planning and pedagogies.

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Tables and captions

Table 1. Focus group interview questions

Introduction/Question A: The World Economic Forum (2016) in its report titled “The Future of Jobs” indicated the top 10 skills needed for 2020. Complex problem solving, critical thinking and creativity are numbered as the main three most important skills in a near future. This data is based on a survey of more than 13 million female and male employees across nine broad industry sectors in developed and emerging economies. We would like to find out: How important is CT for your organization?

1. What personal skills/ traits/ abilities do you consider as most important while starting working in the organization after graduating from university?
 2. What CT abilities/skills do your employees/ colleagues/workers master? Please specify. How do you recognize them?
 3. What CT abilities/skills are of the most importance today? Please specify. Why?
 4. What CT abilities/skills have to be improved/ acquired today? Please specify. Why?
 5. What CT abilities/skills will be needed in the near future in your organization? Please specify. Why namely these? Who has to be responsible for that?
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