

Article

Linking Critical Thinking and Knowledge Management: A Conceptual Analysis

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Abstract: Knowledge management and critical thinking are two broad and important phenomena for contemporary society. Their concepts are both well-discussed in the literature. However, the existing conceptual links between them have not been analyzed, and the role of critical thinking in the process of effective knowledge management has not been revealed. This article aims to fill this gap by presenting the conceptual connections between knowledge management and critical thinking. In order to reveal the inner structure of each concept and identify the conceptual connections, a critical review was conducted. The results showed the links between the concepts of knowledge management and critical thinking within three dimensions: relationships, process, and goals. In conclusion, each dimension is presented and described, with a special focus on the unexpected and deep intersections revealed between the two concepts on a personal, interpersonal, and societal level. This research may be regarded as providing the basis for further analysis of the links between these two phenomena. Increased awareness of the existence of critical thinking in knowledge management can forge new directions in organizational strategies and staff training programs.

Keywords: knowledge management; critical thinking; critical review



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1. Introduction

The importance of the good management of knowledge and information has recently grown more than ever before. A person, organization, or country that effectively manages knowledge builds stronger capacities to create prosperity and wealth. Knowledge creates added value for an organization; it is the crucial factor for innovations and is seen as one of the most significant sorts of capital for obtaining sustainable competitive advantage [1]. It increases the capacity of an organization to compete at national and international levels in the area of sustainable development [2]. However, knowledge itself may be of little use without effective management. Knowledge management is described in the literature as “a popular challenge to today’s organizations” [3] (p. 153), “the most critical ingredient in recipes for organizational success” [3] (p. 153), “strategic for today’s company life” [4] (p. 1797), or a source of success in a sustainable organization [5,6]. Thus, the dissemination of knowledge and information and the use of co-created knowledge is directly linked to the emergence of innovative business models and the potential for sustainable business development [7–9].

The importance of knowledge management is emphasized not only at the organizational level but also at the wider political and economic level. For example, the Europe 2020 Communication from the Europe Commission [10] notes that one of the drivers of future growth is smart growth, which is based on the strengthening of knowledge and innovations in order to translate this knowledge into economic and societal value as much as possible [11]. In its Strategy on Development (2011) [1], the Organization for

Economic Cooperation and Development (OECD) identifies knowledge sharing as one of an organization's key tools for contributing to policymaking and promoting economic reform in different countries. To this end, organizations aim to develop knowledge sharing platforms [1,12].

The European Commission considers effective knowledge management to be an essential condition for modernizing work by moving to ways of working that emphasize teamwork, overcoming silo mentalities, and harnessing synergies between portfolios [13]. Thus, knowledge management is considered to be a prerequisite for effective and research-based policymaking [14], ensuring the development of a knowledge-based economy [15,16].

At the academic level, knowledge management has become one of the most relevant issues in recent research. The studies focus on problems related to knowledge management in the context of an organization's competitive advantage and analyze the links between organizational culture and knowledge management processes, knowledge management strategies, and problem-solving processes in an organization [17–20].

Employee commitment to organizations [21], mutual cooperation and trust [22,23], and promoting a diversity of views [24] have been found to have a positive impact on knowledge management processes. By being able to transform data and information into knowledge and use it to benefit an organization, an employee becomes a member of the organization's knowledge management process [25].

Even though the importance of human factors has been discussed in knowledge management research, both conceptually and empirically, there is still a lack of discussion and analysis on how the thinking and behavior of members of an organization can be changed to make knowledge management more effective in the organization. One such presumption related to streamlining the knowledge management process can be considered to be critical thinking. The latter concept, like many other popular concepts, is used widely and in a variety of senses, which often move away from the basic concept and are sometimes misleading [26–28]. Critical thinking tends to be equated with good or desirable thinking [29,30], effective solutions [31], the management of critical or crisis situations [32], and other positive phenomena. This sometimes gives the impression that it is a tool for solving various problems. The view of critical thinking as an effective tool is to some extent conditioned by the demand for it as a popular marketing “brand” [28]. Critical thinking is desirable in various spheres, sectors, and strata of public life. It is considered to be one of the most important abilities that determine the well-being of the individual and society. It is used as a strong argument in analyzing and evaluating employee abilities and organizational culture [33,34]. It is believed [35,36] that critical thinking, combined with such universal skills as collaboration, problem-solving, leadership, creativity, and self-discipline, will help employees function effectively in organizations today. The universality of critical thinking, along with other skills, is not only linked to employability or staying active in the labor market but also to the development of new products and new ideas to solve new, unprecedented problems. According to Elicor [37], critical thinking can be an essential tool in the management of organizations, aiding in the search for practical solutions when operating in modern market conditions, which require a consistently high level of competitiveness and efficiency. Analyzing the importance of critical thinking in the leadership of modern organizations, Elicor [37] also points out that the need to develop critical thinking has a strong pragmatic orientation—to help an organization solve problems, make key decisions, and direct its activities towards improvement. Therefore, all employees need critical thinking, regardless of their position.

This article aims to reveal the conceptual links between critical thinking and knowledge management. It is part of an ongoing research project oriented toward the discovery of the links between critical thinking competence in higher education and labor market demands.

2. Materials and Methods

The article is based on a critical review of two concepts—“critical thinking” and “knowledge management”—and uses the findings of this analysis to construct a model of critical thinking in knowledge management. Generally, a critical review can be applied in two opposite cases: to review well-known topics or to review new, emerging topics [38]. The latter is the case in this article, which suggests a new conceptual approach and does not review the old ones. This paper aims to present a synthesis of the existing approaches [39] to critical thinking and knowledge management and to provide a new phase of conceptual development in the analysis of critical thinking in knowledge management. While some authors (e.g., Snyder [38]) state that there are no strict standards for conducting a critical review, others argue [39,40] that a critical review should present, analyze, and synthesize materials from diverse sources. The general aim of this type of review is to analyze and examine critically the main ideas of an issue and the relationships presented in the literature [38]. This type of review often requires a more creative collection of data, as the purpose is usually not to cover all articles ever published on the topic but rather to combine perspectives and insights from different fields or research traditions [38]. Therefore, while searching for academic resources, the main emphasis was put on finding articles that would enable analysis and linking of the ideas of critical thinking and knowledge management and potentially lead to a synthesis of both, thus identifying and filling the research gap [40] and strengthening knowledge development by giving focus and direction to further studies [41], i.e., leading to further research on critical thinking in knowledge management.

Using the keywords, critical thinking, knowledge management, the search of scientific publications was conducted in the EBSCOhost (<https://www.ebsco.com/>) and eLABa (www.elaba.lt) databases. EBSCOhost is one of the largest multidisciplinary databases for academic web resources. The selection of the EBSCOhost database for article searching is based on the following advantages of this database:

- The possibility to perform a search in several hundred other databases;
- The availability of full-text journals from various publishers;
- The widest range of topics;
- The inclusion of a number of articles from Scopus and Web of Science;
- The possibility to select only peer-reviewed articles for the analysis.

The eLABa database is an integrated search system, allowing for searching in national academic libraries and other databases.

The following inclusion criteria for publications were applied:

- Period of publication: 1993–2020;
- Full-text;
- Open-access;
- Article published in a peer-reviewed journal;
- Lithuanian or English language.

The publications for detailed analysis were sampled during a two-stage process: a review of an abstract and full-text reading. First, the publications whose abstracts did not focus on critical thinking or knowledge management concepts were rejected. Second, consistent reading of the entire text of the article helped to determine if the critical thinking or knowledge management concepts were being analyzed and if so, the article was selected for analysis. The critical review emphasizes the conceptual contribution of each element of the literature included, so it can be assumed that the explanatory elements are subjective, and the resulting product is the starting point for further discussion.

The steps of critical review analysis described by Jessoni and Lacey [40] were followed. At first, the concept of critical thinking is analyzed to show the content of the critical thinking definition and its importance. Second, the concept of knowledge management is clarified and elaborated. Third, the synthesis of the two concepts is presented, revealing the connections between critical thinking and knowledge management.

To ensure the validity of the analysis, the sampled articles were read several times. The principle of researcher triangulation was applied when intermediate insights, possible interpretations, generalizations, and conclusions were discussed at each stage of the analysis in order to reach a conceptual and substantiated solution.

3. Results

3.1. *The Concept of Critical Thinking*

As mentioned before, the concept of critical thinking has many definitions and has been interpreted in different ways, giving it different meanings and notional nuances. The broad interpretation of the concept is conditioned by its complexity, various scientific approaches, and traditions. The complexity of the concept means that it is made up of many different components. Disposition, ability, skill, and competence are all attributed to critical thinking. Therefore, the question sometimes arises as to whether it is an intrinsic personality trait or a mental operation, a process of thinking, or a combination of all these things [42]. Critical thinking is also identified as a goal focused on the desired result—usually a sensible and right decision in various life contexts. Decisions resulting from critical thinking are considered to be not only correct, but also professional, “carried out in the interest of one’s client, wherein one gives reasoned consideration to relevant information, criteria, methods, context, principles, policies, and resources” [43] (p. 3). Researchers regard such instrumental understanding of the concept of critical thinking as one-sided, arguing that it narrows the concept itself and fails to see the wider possibilities of critical thinking [44–46].

This article is not intended to be a deep and comprehensive analysis of the concept of critical thinking. However, it must be stated that however good an instrument critical thinking may be, it does not work on its own. Its effectiveness requires certain conditions: a favorable environment, basic knowledge, abilities, and personal willingness to expand one’s knowledge, attitudes, and values, which enable one’s available abilities to be used purposefully and fairly.

An environment conducive to critical thinking is defined as one which: respects diverse opinions and encourages their diversity; is free and does not restrict independent thought; creates conditions one is not likely to feel afraid to take the risk of expressing thoughts that differ from those of the majority and invites even opposing sides to engage in dialog and look for common solutions. An environment in which critical thinking predominates is recognizable precisely from the traits listed above. Such an environment is found in a variety of communities, organizations, structures, and systems, regardless of cultural, social, economic, or other differences.

While the importance of critical thinking to organizations and society is unquestionable, this concept is primarily associated not with them but with an individual with certain intellectual qualities. A critical thinker is described as being curious, open, inquisitive, and reflective [46]; able to form an independent opinion and decide what to believe and what not to believe [47]; and inclined to make independent and informed decisions [48]. A critical-thinking person is also recognizable by certain intellectual virtues that Paul and Elder [49] associate with a person who thinks honestly and responsibly and has a strong moral, ethical, and value foundation. Facione [50] describes such a person as characterized by specific attitudes: the pursuit of truth, impartiality, analyticity, systematicity, self-confidence, curiosity, and maturity.

A critical thinker is characterized not only by attitudes and values but also by abilities—analytical and synthetic [51]. Their aptitude ranges from information selection, analysis, and interpretation to making informed decisions and conclusions. Analytical skills include analysis of the structure of arguments, which includes identifying the conclusions and functions of the individual elements of an argument and identifying the validity of the evidence. Synthetic skills include the development of valid or meaningful arguments by selecting information that contributes to the substantiation of those arguments. Overall, critical thinking is described as a synthesis of cognitive skills and dispositions [52].

The relationship of critical thinking with knowledge is not unambiguous. On one hand, knowledge is necessary for critical thinking because it forms the content of thinking. A person thinks critically not in the abstract but on the basis of concrete content. Critical thinking always manifests itself in connection with some identifiable activity or subject area and never in isolation [53]. On the other hand, knowledge is in itself, as accumulated capital, of little value. It is not having it and accumulating it that is important but knowing what to do with it and how to use it. Therefore, it is often said that in the context of critical thinking, knowledge is only the starting point for reasoning and further intellectual operations. It must be processed—analyzed, questioned, interpreted, recreated, synthesized, reflected, evaluated, and applied. One additional and more important aspect stems from the fact that the same knowledge in different contexts can have different weights and meanings. In some places, it will be relevant and applicable, while in others, it will remain purely theoretical knowledge. Therefore, critical thinking can be considered to be something of a knowledge filter in assessing its relevance, reliability, and usefulness.

3.2. The Concept of Knowledge Management

Knowledge is a multi-component concept, the essential aspects of which can be identified as follows: it is a valuable intangible resource based on personal experience, abilities, and skills that can be used to make appropriate decisions [54]. Knowledge is primarily created by individuals engaged in social relations, combining tacit and explicit knowledge [55]. Knowledge co-creation, rather than individual creation, is the foundation of knowledge management in an organization [56].

For knowledge to be valuable, it must be given the context, experience, and interpretation assigned by the individual. The knowledge used by an individual is the basis for turning data into information and creating greater value in solving problems and forming, evaluating, making, and implementing decisions [57,58]. It is important for an organization to combine the knowledge of individuals and use it to manage business processes and create value. This is how an organization forms its knowledge base: knowledge potential, e.g., the potential of the people working in an organization; the organization's environment, which can increase (synergistic effect) or decrease (anti-synergistic effect) knowledge potential; and developed knowledge components [59].

Knowledge management is defined as the clear strategy, tools, and practices used to make knowledge part of an organization's resources [60]. In the context of an organization, it is the ability to collect and use what employees know in order to develop innovative products and services and implement effective and socially responsible business methods. Organizations must therefore develop systems that ensure that knowledge is processed in a way that delivers knowledge to the right person, at the right time, and in the right place [61].

An organization is an institution that determines the ways in which the individual knowledge and skills of different people must be accumulated and transformed into products and services. That is, organizations, in managing knowledge, have the main goal of turning individual, hidden knowledge, which is embodied and perceived, into coded organizational knowledge [62]. It is important to ensure systematic and consistent knowledge management in an organization in order for its activities to be effective. For knowledge to be managed, it must be identified, accumulated, and analyzed, and operational processes must be improved in order to obtain better company results [63,64]. Applying knowledge management processes in an organization's activities ensures that organizational knowledge is used in the development of new products and services [54,65–67].

Effectively managing the knowledge of an organization's employees is one of the greatest challenges for any organization. The variety of knowledge management models [68–72] suggests that knowledge management in an organization can take place in different ways. Nevertheless, effective knowledge management processes only occur when employee knowledge is transformed into the intellectual capital of an organization. Intellectual capital is generated and dynamically recombined by knowledge, produces

knowledge, and is fed by knowledge itself, both codified and tacit [4]. At present, the expression of an organization's value needs to be more focused on employee retention, using their knowledge and innovative skills to emphasize the image and brand and build core equity [73]. Hence, people are a critical component that enables the existence of knowledge management in an organization and encompasses elements such as organizational culture, learning, strategy, and leadership. People create, use, and convey knowledge, and they encourage each other to share knowledge [74]. It is, therefore, necessary to facilitate the sharing of knowledge for individuals, groups, and organizations alike, as this is the key to success [68,75]. It should be noted that knowledge is subjective, so in order for employees wanting to share their knowledge and experience, a conducive environment must be ensured—an appropriate cultural environment in an organization [76,77] based on trust, openness, and cooperation [78], lifelong learning, and teamwork [79,80].

Since knowledge is a source of competitive advantage, motivation is required for an employee to share his or her knowledge [81].

Thus, the transformation of individual knowledge into organizational knowledge is determined by an organizational culture that guarantees security and is based on the free will and cooperation of employees, a system of motivation, promotion, knowledge sharing, habit formation and support, and a flexible leadership culture that looks to the individuality of an organization [82] (p. 156). Organizations must not only be able to identify relevant individual knowledge themselves but also to create and develop a system that helps employees express the knowledge they have. In order to encourage employees to share knowledge, an organizational culture that ensures this, based on mutual trust between team members, is necessary. Developing a culture of knowledge sharing is one of the human resource management problems that organizations must negotiate. It is a process that takes place in an organization's cultural environment, which is seen as a context of social interaction that influences the creation and maintenance of new knowledge [83,84].

It should be noted that knowledge management is designed to present the strategy, process, and technology that increase an organization's efficiency and aid in the development of an organization's innovative capacity [85,86]. Thus, the creation, organization, dissemination, and application of knowledge are factors influencing the innovation capacity of an organization [87], as the creation and application of new knowledge are the basis for innovation, emphasizing the strong link between innovation and knowledge, and this is a source of competitive advantage [88,89]. Consequently, knowledge management is one of the activities consciously carried out in an organization, an integrated part of strategic management that ensures the creation of knowledge potential and the systematic accumulation of knowledge and its application through the development of continuous innovative activities. The links between innovation processes and knowledge creation processes have been highlighted; for example, the efficiency of innovation processes is ensured by the continuous processes of knowledge creation and sharing [54,90].

In order to manage knowledge optimally, one "need[s] to know 'enough' about it and all the relevant aspects that pertain to the identification of its present state, handle any problems, envision and create knowledge-related opportunities, and make the required changes that will bring about the desired results" [71] (p. 18). Nevertheless, it is worth noting that knowledge generation and knowledge sharing are more closely associated with primary knowledge management processes that promote the accumulation and use of knowledge in organizations. In order for organizations to turn this into a better outcome for their organization, they should know how to use the knowledge created, shared, and captured there [91].

3.3. Connections between Critical Thinking and Knowledge Management

The analysis of critical thinking and knowledge management concepts allows for the identification of the links within three dimensions: the relationship (the relationships between the different people and bodies in the process of critical thinking and knowledge

management), the process (how the result is achieved), and the goal (what the process is oriented toward) (Table 1).

Table 1. Elements connecting the concepts of critical thinking and knowledge management within three dimensions (developed by the authors).

	Critical Thinking	Dimensions	Knowledge Management
Personal attitudes, personal abilities and skills, contextual knowledge	Dialog, freedom, respect, openness, collaboration	Relationship	Culture of knowledge sharing, positive organizational environment, trust, openness, cooperation
	Thinking process: Information selection, analysis, interpretation, the development of valid or meaningful arguments during information selection, etc.	Process	Knowledge accumulation, analysis, use/application and sharing
	Right and professional decisions and/or conclusions	Goal	Organization decisions, effective, socially responsible activities, process management and improvement, innovations, new products and services
			Knowledge of the organization's members, abilities and experience of the organization members

Critical thinking and knowledge management goals are related to the development and progress of individuals, organizations, and society, giving it a very broad and ambiguous content and, at the same time, very pragmatic and specific aims—solving relevant problems and making effective decisions. For example, in global structures, such as the World Health Organization [92], knowledge management is clearly focused on fact-based policies and decision-making. Therefore, critical thinking is used as a tool to achieve this goal. Elicor [37] points out that critical thinking, like evidence-based thinking, aids in the making of essential decisions and directing one's activities toward organizational improvement. "Critical thinking as a normative principle, is a powerful tool that contributes to the professional arsenal of any organization, particularly in crucial decision-making, trouble shooting, and steering the company towards holistic organizational advancement that benefits not only the few, but all its members" [37] (p. 19). Critical thinking is perceived as a protection against possible failures, with the hope that recurring problems will be easier to overcome in the future, and an organization will acquire a certain resilience to hardships and will be able to use "lessons learned" in taking on new challenges.

Critical thinking is understood as an adequate response to changes in the environment and risk management, both inside and outside an organization, by solving problems and introducing innovations for business development [93]. Risks are managed in a timely and proper manner, and smart solutions create the conditions for the development of new products and the improvement of existing products [60]. This creates added value for the organization and society [94]. Thus, in the context of knowledge management, critical thinking is perceived as a fundamental competence that guarantees the success of an organization and ensures its progress, improvement, and competitive advantage [95,96].

The practical goals of critical thinking—the identification of fallacies, ill-structured problems [49], the selection of the best alternative solution, the method of problem-solving [53,97]—are easily linked to the goals of knowledge management. However, the goals of critical thinking also have an idealistic perspective, which is termed the pursuit of truth and justice and is sometimes equated with the pursuit of objectivity. From this philosophical perspective, the links between critical thinking and knowledge management are not obvious.

The processes of critical thinking and knowledge management are similar in that they are undoubtedly related to the consistent, step-by-step, and final processing of information.

Critical thinking researchers name a different number of stages and group them in their own way. Dewey [98] associates the initial stage with intellectual curiosity, leading to the raising of questions and hypotheses, searching for and selecting ways to solve a problem, and finding the best solution. Facione, Facione, and Giancarlo [43] point to these stages of critical thinking: interpretation, i.e., identifying and naming a problem and constructing future research; analysis, i.e., studying and comparing various data and information and searching for connections; assessment, i.e., logically examining the available material and making decisions; self-regulation, i.e., justifying how and why one or another decision was made and reflecting on how those decisions affected a person's thinking, changed it, or improved it. Paul and Elder [49] name eight stages: setting a goal; raising questions related to a problem associated with the phenomenon under study; gathering information; interpreting it; formulating concepts and theories; making assumptions; anticipating the possible consequences; formulating an autonomous approach, and drawing conclusions.

The stages of the knowledge management process in an organization are similar and are referred to as finding, selecting, organizing, disseminating, and communicating information [99]. Selection involves analysis, synthesis, and evaluation, the organization involves giving new forms and/or meaning, and communication is for the use of knowledge. The process of knowledge management is also described as knowledge creation (including both search and selection), validation, presentation, dissemination, and use [100]. The success of the knowledge management process in an organization is directly related to the success of an organization. The International Institute of Management created a model for executive education, which singles out five areas of successful knowledge management [101]: knowledge, analysis, synthesis, application, and communication (KASAC). Particular emphasis is placed on the ability to make decisions and discern and understand the inherent opportunities, critical success factors, potential obstacles, and evaluation criteria. The basis of all this is critical thinking competence with clearly identified components, which include the above-mentioned abilities as well as others—attention to details, articulation and transmission of ideas, and ensuring the sustainability of knowledge in making fundamental changes in organizations.

This model could be related, in part, to the levels of Bloom's [102] well-known basic critical thinking taxonomy: (1) knowledge (concepts and theories); (2) comprehension (ability to understand and name); (3) application (ability to apply and to transfer); (4) analysis (ability to break down information into component parts and explore); (5) synthesis (ability to put parts together to form a new whole); and (6) evaluation (ability to make a judgment). In the Bloom model, the transfer of knowledge, unlike in knowledge management models, is identified not as one of the last stages but rather as one of the first. In any case, in terms of both critical thinking and knowledge management, knowledge in the initial stage of processing cannot be considered "explicit", justified, and reasoned knowledge. Despite being based on past experience and available knowledge, it is initially treated as information requiring verification and validation. In order for knowledge to become a valuable product for an organization, it must be subjected to continuous processing, which means being questioned, rethought, recreated, supplemented, and sometimes even rejected if its erroneousness is proven. Organizations, therefore, strive to make sure that before making decisions, their employees carry out thorough preparatory work, detecting discrepancies and errors and eliminating shortcomings by analyzing, synthesizing, and evaluating information. In analyzing the path of an organization's managers and leaders that leads to successful, solid knowledge-based results, Jenkins and Cutchens [103] identify 12 critical actions: (1) being aware of situational contexts and evaluating decision implications; (2) both asking questions and listening to the responses; (3) understanding the variety of values, opinions, and decisions of others; (4) using open-mindedness and flexibility in decision-making; (5) being able to accept critiques from others and accepting and internalizing them; (6) evaluating others' assumptions before challenging them; (7) understanding processes before trying to change them; (8) knowing followers' weaknesses and strengths and using them accordingly in their direction and empowerment; (9) having

a purpose and knowing the values and mission of an organization when decisions are made; (10) being involved with others by meeting them in their present state, rather than their potential state; (11) encouraging critical followers; and (12) taking informed action. These detailed actions reveal an approach to knowledge and understanding that can be characterized as an ongoing check on an organization—whether it is on the right path, what changes are needed and where, and by whom, and when and how they should be initiated. Therefore, it can be argued that knowledge management processes are directly related to the renewal and growth of organizations.

Critical thinking processes also are focused on an individual's intellectual growth, community maturity, and the progress of society. In this way, the processes of critical thinking and knowledge management also become a learning process that involves individuals, communities, and organizations. To make learning effective, the processes must be well understood, communicated, interpreted, and reflected on by participants. Learning from mistakes, which in the concept of critical thinking refers to self-correction, has a particular value in the learning process [104]. Mistakes are also inevitable in knowledge management. The abundance of information and variety of sources offer wider opportunities but at the same time cause difficulties. It is thus easy to get lost or make the wrong decisions, especially if the sources are not reliable. Knowledge managers, therefore, need strong critical thinking skills, particularly in assessing the validity and reliability of information obtained from different unknown sources [105].

There is also a variety of models in knowledge management. This article does not aim to examine each of them in detail but provides some general features. The main elements of any knowledge management model, with some variations, are information selection, the identification of good practices, the accumulation and filtration of target knowledge sets, and the use of this knowledge for further planning and strategic decision-making. Researchers in the field of critical thinking are able to identify the points and aspects at every stage of the knowledge management process where critical thinking would be the key factor of the successful implementation of these stages. The elements of critical thinking competence do exist throughout the knowledge management process.

Critical thinking and knowledge management cannot exist without relations, i.e., without connections between people, organizations, and communities. While the discourse on critical thinking constantly emphasizes that critical thinking is individual and independent thinking, it is at the same time emphasized that it is social thinking too. No contradiction exists between these two positions. Critically thinking people do think for themselves and make decisions themselves, but their thinking and decisions are influenced by the living context, social reality, and interpersonal relationships. Critical thinking comes from being in an intense relationship with another, whoever this other may be. Critical thinking is as individual as it is communal and social [106]. It is what people do “most often collaboratively, while they engage in pursuing the activities and goals that fit their daily lives. Thinking rarely remains a solitary activity conducted inside people's heads” [107] (p. 13). All of the above suggests that critical thinking has several dimensions: personal, interpersonal, and communal/social.

As already mentioned, an organization's knowledge is an accumulation of individual and community knowledge. It is created by individuals through relationships and the use of tacit knowledge with explicit knowledge [55]. Therefore, knowledge management in an organization also has clear individual, interpersonal, and organizational levels. Knowledge, if not shared, becomes meaningless because it does not create added value. The more knowledge is created, managed, and used, the more its value grows, making knowledge sharing a key process that organizations should constantly pursue to maintain their competitiveness [108]. To create a sustainable competitive advantage, an organization's employees must not only share knowledge but also put it into practice [109]. One of the most important goals of knowledge management is to ensure that knowledge exchange takes place in a systematic way and creates added value. Research shows that these exchanges are particularly valuable when exchanging diverse and different knowledge, as a diversity of

opinions and experiences opens up wider horizons; learning takes place through interactive relations, and new organizational knowledge is created [110]. Exchanging knowledge aids in the development of a better understanding of complex processes and a better ability to recognize solutions to problems that would have seemed unimaginable or even considered impossible. “It is, hence, hardly possible for a single person to solve a complicated problem. People must learn how to work together so that they can solve the problems and construct meaningful knowledge” [111] (p. 95). Employees exhibit more creativity when exposed to a range of perspectives and out-of-the-box thinking enabled by individuals with dissimilar rather than similar backgrounds [112].

Treating relationships as an opportunity to learn from others, both critical thinking and knowledge management skills could be strengthened. Opportunities arise when a conducive environment is created for finding them. Any organization that values an independent but reasoned opinion encourages research and experimentation, provides the opportunity to make mistakes and learn from them, and fosters a culture of collaboration, and collegial decision-making can be called a critically thinking and functioning organization. It is likely that in such an organization, valuable personal experience and knowledge will be internalized, accumulated, and consolidated for the success of an organization.

In summary, it can be stated that the links between critical thinking and knowledge management are revealed through the object that connects both of these concepts—knowledge. Critical thinking can be interpreted in three ways—as a precondition for knowledge management goals, as a tool for knowledge management, and as a condition for knowledge exchange (Figure 1).

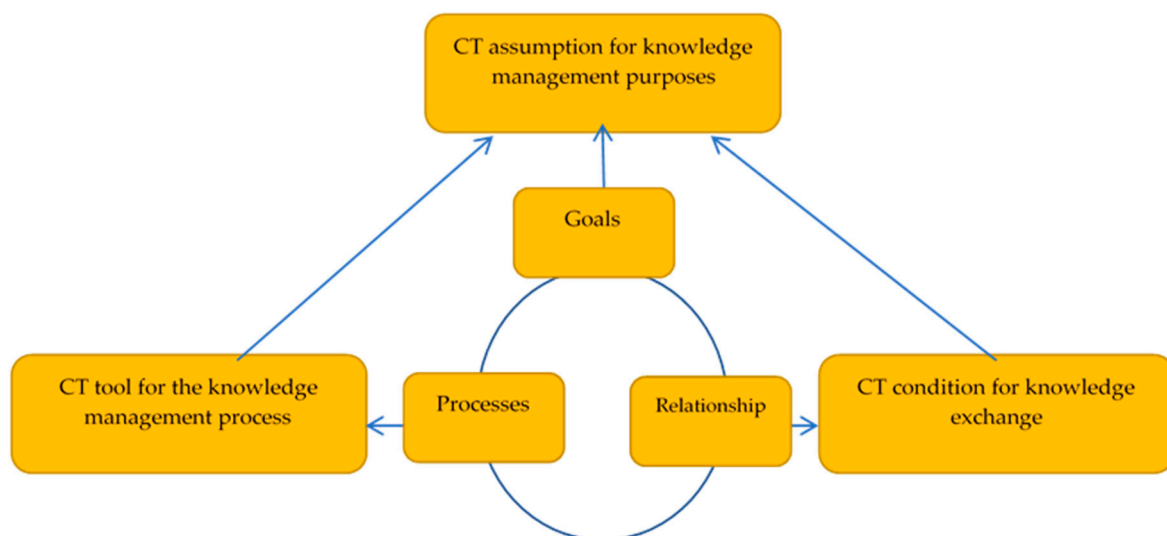


Figure 1. Interfaces between the concepts of critical thinking (CT) and knowledge management (developed by the authors).

People create and use knowledge, share it, and encourage others to share specific goals and/or objectives. In mutual relationships, knowledge is recreated, transformed, and used in activities that focus on certain results. In the process of knowledge creation, critical thinking serves as a tool for processing knowledge—it is analyzed, evaluated, substantiated, explained, and so on. In short, it enables the creation of new knowledge through purposeful thinking and implementation for the benefit of an organization. For the knowledge management process to take place, relationships between people are necessary. Knowledge depends on people, and it is up to them how (and whether) knowledge will be shared. An organization must be able to create and develop a system that helps to identify employees’ knowledge and enable them to express their own knowledge, adopt that of others, internalize it, and use it purposefully at both the personal and organizational levels. In this respect, critical thinking becomes a condition for knowledge exchange.

Knowledge is created through a conscious and reflective thinking process—discussing, raising questions, questioning existing solutions, checking assumptions, and raising new ones. Finally, critical thinking is one of the most important prerequisites for realizing knowledge management goals. As already mentioned, knowledge is not only one of the main resources of an organization but also the most important source of innovation. Simply sharing knowledge does not create added value for an organization. Only thought-out, evaluated, and grounded knowledge steers the organization toward improvement.

4. Discussion and Conclusions

The analysis of critical thinking and knowledge management and their links revealed an ambiguous treatment of these concepts. It is common to emphasize the importance of the whole of knowledge management in developing innovation [87,91], maintaining an organization's capacity and suitability to managing changes effectively [113], and ultimately ensuring a highly competitive advantage [114]. In other words, the added value of knowledge management is treated within the economic dimension.

Critical thinking is also often seen from a pragmatic and rather consumeristic point of view as the ability of members of an organization to act in vague, stressful, and uncertain circumstances [27,115] and as a fast and efficient instrument for solving various problems [115–119] in order to achieve economic viability. It is important for critical thinking (as well as for knowledge management) to build on the existing knowledge so that it can be further developed, improved, and turned into advanced ideas and innovations and sustainable and long-lasting results. Critical thinking is, therefore, often associated with the ability to initiate and develop advanced products [120,121]. All of this is clearly focused on specific goals—technological progress, increasing competitiveness, and growing economic advantage.

However, in the research on both knowledge management and critical thinking, there is often no discussion about where it all comes from, under what conditions and circumstances, and in what relations. In this article, it was revealed that knowledge management and critical thinking could be seen as a goal and desired outcome, as well as a process that uses both technological tools and human resources. In these processes, a person is important, but the essential element is relationships in which knowledge is found, nurtured, and disseminated, knowing is cultivated, and the horizons of thought are expanded. Relationships are based on an open, trust-based culture that brings clear benefits to each organization and/or community, both tangible and intangible. Successful organizations can be considered to be those that naturally and organically internalize personal knowledge and use it as a collectively accumulated asset [122]. This approach is also in line with the attitude of representatives of pragmatism and social constructivism towards critical thinking as a social construct. According to Weber [123], the concept of social action also makes it possible to treat knowledge management as a social construct. Weber claims that social action is social when the actor gives the action a subjective meaning and focuses on the behavior of other people. In other words, individuals assign meaning to the actions of others and take them into account when acting themselves. Thus, if Weber's terminology is used, any meso- or macro-level social structure is created from individual social action. From this perspective, looking at an organization (meso) and the behavioral (micro) relationships of its members reveals the deep configuration of the social structure—individual social action is the starting point from which the development of consequences above the micro-level begins. Using Weber's concept of social action enables the relationships between members of an organization as individual actors and organizations as social institutes and social structures to be explained. The entirety of individual actions driven by a particular motive, or the aggregation of individual actions, can change the order and life of an organization. It is particularly important to emphasize the significance of the whole of individual actions when all social actions produce a unique result or cause an unintended consequence that can only emerge in relation to other social actions. This means that investing in the critical thinking of employees, i.e., motivating

them to improve their critical thinking skills and attitudes and apply them in the day-to-day decisions of an organization, will eventually lead to a critically thinking organization that uses effective knowledge management. The critical review of the literature on the concepts of knowledge management and critical thinking showed that these phenomena have many common points. It would therefore be purposeful for an organization to strengthen the critical thinking skills of each member, which would subsequently allow for the development of competitiveness of an organization as a whole of social relations through individual social actions.

The process of both critical thinking and knowledge construction can be described as a two-way street. A person thinks, creates, and constructs the knowledge individually. In the relationships, which can be treated as a meeting point between individuals and others, an exchange of thoughts, ideas, information, and knowledge takes place. Then, the contemplated, recreated, and accumulated thoughts and knowledge are used at the organization and community level, as well as at the individual level. Organizations use them to improve and expand their activities, and individuals use them to develop themselves. This does not happen automatically but rather through consistent, in-depth analysis, consideration, reflection, and evaluation. Therefore, it can be said; there is an active two-way learning process: from the personal space of knowledge and experience to the common space, and from the common space to the personal. During this process, various types of learning take place: “community building, collaborative learning, observational learning . . . mindful learning . . . ” [124] (p. 1319).

This article revealed the links between the concepts of critical thinking and knowledge management. The critical review enabled a discussion of the inner structure of these two concepts and a deeper look into their nature. The analysis confirmed the existing interrelations within the following dimensions: goal setting and orientation towards final results; the process of result achievement; and the relationships, i.e., the relationships between the different people and bodies in the process of critical thinking and knowledge management. The findings contribute to an increased awareness of both concepts and the ways they support each other, as well as indicate new directions for future studies.

The findings of the theoretical analysis highlighted the importance of personal, interpersonal, and social relations for critical thinking and knowledge management. At the same time, they opened the phenomenon of mutual learning in the process of critical thinking and knowledge management. The idea of mutual learning can be discussed more broadly in relation to each concept separately. However, it would also make sense to analyze this at the intersection of the two concepts in terms of learning in an organization that both fosters critical thinking and values knowledge creation at all levels. The manifestation of mutual learning in the context of discussed concepts is very important, considering the reality today—the fast exchange of ideas and knowledge, the acquisition of new skills in the workplace, and the demand for reasoned decisions, as well as for long-lasting, sustainable results. The absence of this topic might be considered as one of the limitations of the current article. However, this topic is not the focus of this paper and is therefore left for future research. The authors of this article were also not able to reveal all the nuances of the concepts discussed nor to analyze all of the possible interrelationship aspects. The research area is wide and rich, and this article is limited in scope. The publication could be illustrated by examples from different organizations and testimonies of employers and employees regarding how they use critical thinking for knowledge management. The authors have provided the first data on this aspect, but it needs to be researched further. It would be worthwhile to also look at knowledge management from the perspective of critical theory, exploring knowledge as a tool of power and authority. This topic is becoming increasingly relevant in the turbulent times of contemporary life.

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