

An Integral Approach to the Meaning of Competence

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Abstract. Interest in the concept of competence is becoming crucial, as it is highly interconnected with the idea of life-long education and the requirement of continuing professional development. Improving competence and becoming a long-life learner are essential components of ensuring employability. From an educational perspective, a competence-based education addresses the problem of defining exactly what competence is due to the variety of interpretations of its meaning. On the one hand, the concept of competence is understood as an intermediate level of knowledge and skills developed in the future professional (the current student), and yet conversely competence implies efficient behavior in a non-standard situation that requires the highest level of knowledge, skill, and qualification. This paper is based on the analysis of the concept of competence and the variety of interpretations of its meaning. The goal of the paper is to discuss the different concepts of competence, seeking an integral approach to the meaning of competence. The literature review allowed the authors to conclude that the discourse that surrounds competence is widely analyzed in the scientific literature, and the meaning of competence depends upon the approach chosen. Each of these interpretations are rational, and majority of them resonate with Westera's competence model. According to this model, competence can be considered to be comprised of an individual's knowledge, experience, skills, abilities, attitudes, values, and other personal qualities that determine understanding and willingness to solve a concrete intellectual or practical challenge, and ensure success. An individual's competence depends not only on what qualities they have as a whole (their "quality pool") but also, most importantly, on the structure of qualities that they choose from their inner "pool" to solve a situation in life or in work. Attitudes and values are the bases of competence, which constitutes an action's driving force and forms both commitment to an activity and confidence in its success. Competence has a dynamic structure, as in every activity a person not only makes decisions but learns in parallel, and as such their knowledge, experience, and skills are enhanced.

Key words: competence, competency, life-long learning.

Anotacija. Sąvoka „kompetencija“ tampa vis svarbesnė, nes ji yra glaudžiai susijusi su mokymosi visą gyvenimą idėja bei būtinybe nuolat tobulinti savo profesines kompetencijas. Būtent kompetencijų tobulinimas didina profesionalo įsidarbinimo galimybes. Kalbant apie kompetencijomis grįstą išsilavinimą iškyla nemažai problemų, kadangi kompetencijos samprata suprantama gana skirtingai. Iš vienos pusės, ji vertinama kaip vidutinis žinių ir įgūdžių lygis, iš kitos pusės, reiškia efektyvų elgesį nestandartinėje situacijoje, kuriai reikia gilių žinių, įgūdžių ir aukštos kvalifikacijos. Šio straipsnio tikslas – aptarti įvairias kompetencijos sampratas, laikantis integruoto požiūrio į jos prasmę.

Literatūros analizė leido nustatyti, kad nors sąvokos „kompetencija“ diskursas yra plačiai diskutuojamas mokslinėje literatūroje, o jos supratimas priklauso nuo pasirinkto požiūrio, kiekvienas turi racionalumo aspektą. Dauguma požiūrių randa atgarsį Westeros kompetencijos modelyje. Juo vadovaujantis kompetencija galima laikyti individo žinias, patirtį, įgūdžius, gebėjimus, požiūrius, vertybes, kitas asmens savybes, lemiančius supratimą ir pasiryžimą įveikti konkrečią intelektinę (pažinimo, mąstymo) ar praktinės veiklos reikalaujančią situaciją bei užtikrinančius šios veiklos sėkmę. Asmens kompetencija priklauso ne tik nuo to, kokių kokybių visumą („kokybių baseiną“) jis turi, bet, svarbiausia, ir kokią kokybių struktūrą jis pasirenka iš vidinio „kokybių baseino“, kad įveiktų konkrečią veiklos ar darbo situaciją. Požiūriai, vertybės yra tas kompetencijos pagrindas, kuris pasireiškia kaip veiklos varomoji jėga ir formuoja pasiryžimą šiai veiklai bei pasitikėjimą sėkme. Kompetencija nėra statiška, ji yra dinamiška, gali kisti pačioje veikloje, nes veikdamas žmogus kartu ir mokosi, taigi kaupia žinias, patirtį, įgūdžius.

Esminiai žodžiai: kompetencija, mokymasis visą gyvenimą, kompetencijomis grįstos studijos.

Introduction

The concept of competence is becoming increasingly concrete, not only for the development of businesses but also for the economic, technological, and socio-cultural development of countries. This is due to the notion of learning “everywhere and every time” becoming a necessity for every professional (Desjardins, 2003; Clark, 2005; Jackson, 2011; Borkowska & Osborne, 2018; Polyakov et al., 2018; Matvieva et al., 2019). In a world that is changing rapidly both technologically and socially, it is necessary for a professional to continue the process of their learning, i.e., their professional development (Friedman & Phillips, 2002; Bolderston, 2007), to allow them to achieve their life goals (Tolliver et al., 2017). Moreover, learning and gaining new competences is a practice that has spread from formal learning institutions to become “an activity which happens through life, at work, play, and home” (Klamma et al., 2007, p. 72). It is expected that education should prepare future professionals by providing them with knowledge and skills that are not limited to one particular field. Educational institutions are called upon to equip their students to “have mental flexibility and emotional balance” in order to meet challenges in an ever-changing world (Voinea, 2019, p. 329).

A competence-based education has started to become one of the main conditions for successful future professional development (Norris et al., 1991; Daelmans et al., 2004; Sullivan & Downey, 2015; Shah et al., 2016; Ash et al., 2019). It is outlined specifically by the European Commission in the Bologna process, aiming to create a common European higher education area (ECTS Users’ Guide, 2015). One of the main tasks of this process is to successfully implement competence-based study programs. It should be acknowledged that for some time competence was understood differently in the documents of the Bologna process (Davies, 2017) and other EU documents (Recommendation 2006/962/EC on Key Competences for Lifelong Learning, Recommendation 2008/C 111/01), however the European Higher Education Area has now started to move towards a more harmonious understanding. This can be perceived in the following contexts: 1) the recognition that competence consists of knowledge, skills, abilities, and attitudes; 2) the description of competence in terms of context and situation, paired with the recognition that it can only be demonstrated in practice; and 3) the notion that competence is a “proven ability,” meaning that it can only be demonstrated when an activity has been accomplished, i.e., in relation to the success of this activity.

A different understanding exists in academic discourse: the concept of competence is not clear, and there is broad discordancy in the field. It can be noted that the concept of competence—and even the term’s usage in scholarly articles and educational practice—varies across at least four forms: *competence* (Mulder et al., 2007; Willberg, 2015; Miracchi, 2015); *competences* (Voogt & Roblin, 2012; Salas Velasco, 2014); *competency* (Sullivan & Downey, 2015; Walsh et al., 2017; Sargeant et al., 2018; Kumar & Aithal, 2019; Zheng et al., 2020); and *competencies* (Duron & Giardina, 2018; Ramsaroop & Peterson, 2020; Fonseca & Picoto, 2020). Thus, it is necessary to delve deeper into the existing discourse, and to answer the following question: Which understanding of competence is appropriate to describe a successful unstructured work activity? This paper

aims to discuss different approaches to competence, seeking to reveal (or to construct) the most appropriate definition of competence which might be applicable both for analysis of the activities of twenty-first century professionals and for the universities that aim to produce these professionals via education.

Methodology. The research questions of this paper are as follows: What is the current state of knowledge in the field of competence and other related terms? What are the main achievements and omissions in understanding competence? What are the reasons for this? Can the integrative approach explain the meaning of competence?

The aims and research questions of this paper required a scrutinous analysis of the surrounding literature using Snyder's (2019) methodology, which involves the following methods: systematic literature review; semi-systematic review; and integrative review. Of the three suggested methods, it was decided to conduct an integrative review as this allowed the authors "to assess, critique, and synthesize the literature on a research topic in a way that enables new theoretical frameworks and perspectives to emerge" (Snyder, 2019, p. 335). This serves the aim of this paper exactly: providing new insights on a great number of sometimes contradictory approaches to understanding competence. The sources of this study came from the close reading and review of the conceptual papers and documents which were found in EBSCO with the key-words *competence*, *competences*, *competency*, and *competencies*. This review aimed to choose only those articles which allowed the authors to "assess, critique, and synthesize" the information, resulting in the composition of an integral approach to understanding competence.

Different approaches to the meaning of competence

Norris (1991) classified three approaches to, or definitions of, competence: behaviorist; generic; and cognitive. The behaviorist approach is understood as being composed of learning and performing behaviors that provide desired outcomes or products. As a result, this kind of competence is relatively easy to demonstrate, observe, and assess. The generic approach involves specializing in finding the most effective performer of a job or activity, and identifying the "skills, abilities, and characteristics which are responsible for this difference" (p. 333). Using the generic approach, it can at times be difficult to objectively evaluate these generic skills. The cognitive approach can be understood as the potential of the individual to perform under ideal circumstances (Messick, 1984), or the underlying attributes of a person (Hoffmann, 1999). Again, the question of measurement in the cognitive approach remains a critical issue, as in this sense competence "is a latent construct, i.e., something that may not be directly observable" (Glaesser, 2019, p. 73).

Alternatively, Chievers and Cheetham (2000) conducted a five-year analysis of competence (from 1994 to 1999) that sought to understand its nature and involved over 400 professionals. Their explanation of competence has a historical component, as they explain the development of competence through time and in some cases involve aspects of territory. Their approaches to competence can be classified as follows: 1) the apprenticeship model (up until the nineteenth century), which treats competence as a certain type of craft or mastery, where learners observe the master's practical expertise and the

theoretical background is left to the personal responsibility of the learner without further examination of the knowledge and skills acquired; 2) the technocratic approach (from the end of the nineteenth century up until 1980), which includes a certain set of criteria of specialist knowledge which are tested via examinations and then allow for qualification as a specialist; 3) the reflective practice approach, which is connected with Schön's (1983) skeptical view on formal education and the "knowledge-in-action" practice that he offers, followed by the internal reflection of the specialist; 4) the functional competence approach (from late 1980 onwards) used in the UK, Canada, and Australia, which implies the precise description of each job position and a teaching program that follows it, enabling learners to achieve specific goals in certain working positions; and 5) the personal competence approach (from the beginning of 1980 onwards), which is used primarily in the USA and is associated with Boyatzis' (1982) approach, where the central place is dedicated to the person and their personal characteristics, thus ensuring working efficiency.

It is important that, in their earlier work, Cheetham and Chievers (1996) offered that professional competence has four core elements: 1) knowledge/cognitive competence; 2) functional competence (also known as the UK approach); 3) personal or behavioral competence (also known as the US approach); and 4) values/ethical competence. Knowledge/cognitive competence is defined by the authors as: "...the possession of appropriate work-related knowledge and the ability to put this to effective use" (Cheetham and Chievers, 1996, p. 24). Functional competence is presented as "the ability to perform a range of work-based tasks effectively to produce specific outcomes" (p. 24). This subgroup is derived from the idea of the "functional analysis" of vocational training and the job competence model (Mansfield & Mathieus, 1985), which consists of the task, task management, and role/job environment in which a problem exists. The definition of personal or behavioral competence is "...the ability to adopt appropriate, observable behaviors in work-related situations" (Cheetham and Chievers, 1996, p. 24). This category concentrates more on the personal characteristics of the potential employee, whose potential could be the key to attaining the knowledge and skills required for successful job performance (Boyatzis, 1982). Values/ethical competence is explained as: "the possession of appropriate personal and professional values and the ability to make sound judgments based upon these in work-related situations" (Cheetham and Chievers, 1996, p. 24). Here the ethical, professional, and personal values are included, which directs a person to moral and ethical questions such as: "what is right for me from a personal, professional, and organizational point of view?"

It could be concluded that the concepts of competence have various meanings, and that they depend upon the point of view of the author. After completing an integrative literature review of the articles found which contained the keywords words *competence*, *competences*, *competency*, and *competencies* in EBSCO from the period of 1980 to 2020, a classification of the concept of competence was formed that presents seven different approaches to understanding competence:

1. The "Behavioral or personal competence approach" (or the US approach) or the "behaviorist competence approach" (Norris, 1991), which connects human personal abilities to the ability to work efficiently. For example, Boyatzis (1982) explained competence as a human quality that improves work performance and could be one

- of the main factors in ensuring efficient work. Spencer and Spencer (1993) treated competence as an essential characteristic of an individual that is directly linked with the effective performance of complex work activities.
2. The “Functional competence approach” (or the UK approach), which connects specific descriptions of job performance with the required competences of employees for the efficient performance of this job (Cheetham and Chievers, 1996). This approach could be compared to Norris’ (1991) generic competence approach, which attempts to pinpoint the most efficient worker, compare them to a less efficient worker, and define the skills, abilities.
 3. The “Cognitive competence approach,” which concentrates on a person’s potential to be developed and to perform in ideal circumstances (Norris, 1991)
 4. The “Competence as realized and/or developed capability approach.” Mulder (2000) sees competence as the capability of an individual or an organization to overcome problems and achieve success. Moreover, Mulder et al. (2007) contributes to the competence approach, and adds that “we can say that the concept has only two essential meanings, which is an authority (in the sense of possessing the responsibility, license or right to decide, produce, serve, act, perform or claim) and capability (in the sense of having the knowledge, skills, and experience to perform), as mentioned above” (p. 7). Kalsow et al. (2007) noted that “capability is the enhancement of competence—generally achieved through formative or summative feedback on one’s performance, self-assessment, and coping with unfamiliar contexts and challenges to one’s competencies” (p. 447). This suggests that the capability approach treats competence as a dynamic concept that can be developed by personal reflection on performance.
 5. The “Situated or constructivist competence approach,” which emphasizes the importance of viewing a person’s performance of an activity in relation to their environment or context. This approach is based on the theory of constructivism (Piaget, 1977; Kelly, 1991), and therefore positions the learner and their experience as a filter through which new information can be understood and built upon by connecting it with pre-existing knowledge (Hunter & Krantz, 2010). Barnett (1994) treated competence as the ability to “... cope with unpredictability and even allow for creativity” (p. 73). Kirshener et al. (1997), following Lewin’s ideas about human behavior, offered that competence (C) is a function of knowledge (K), skills (Sk), and situation (S), and consequently it can be presented as: $C = f(K, Sk, S)$. This implies that competence is connected to the knowledge available to an individual and the skills developed and adapted in the context of the situation. Masten and Coastworth (1998) presented the concept of competence as a behavior that allows for efficient adaptation to the environment, attaining a certain level of success in an existing community. The success factor is defined based on a person’s age, gender, or social position in the community in comparison to the level of the results achieved. In other words, competence is the ability to find a new configuration or usage of existing knowledge, through which success in the current environment is attained.
 6. The “Values-based competence approach” which, evidently, reveals the role that values play in competence. Shash et al. (2016) define the structure of competence as “various

components such as knowledge, skills, values, and attitudes” (p. 5). The impact of values and culture on competence is analyzed specifically by Barrett, who notes that human beings develop their competence based on the component factors of cultural and personal values (Barrett, 2016, 2020).

7. The “Organizational competence approach,” which focuses on the human ability to meet challenges in an organizational context. Slenning (1999) presented an understanding of competence in terms of an individual’s ability to cope with different challenges in a specific situation at the level of the organization. The definition offered by Slenning, which focuses on the “ability to cope with a different challenge,” could be understood to involve a person’s flexibility or ability to change their behavior according to the situation or context. As Arnold et al. (1999) outline, the functional characteristics of competence are, in essence, represented by the question of what a person can do at work in comparison to their general characteristics.

Thus, the meaning of competence depends upon the approach taken by the author. It develops depending on its purpose and/or the context that influences it. As such, it is natural that the field of competence research is characterized by the plurality of its discourse. In the course of exploring this discourse, one question remains to be addressed: what is the relationship between this discourse and large-scale political-educational decisions that affect not only a particular country but also large areas of the world, such as Europe?

What is the difference between *competence* and *competency*?

As was mentioned earlier, an additional factor of difficulty in the analysis of the concept of competence can be identified in the idea that there exist different versions of it, each with different spellings and different meanings. The most common of them are *competence* and *competency*. Mulder (2000) was one of the few authors who analyzed the differences between the terms competence and competency, and it is his position that “competency is an underlying characteristic of competence, an element of competence, and consists of clusters of knowledge, skills, and attitude that are necessary conditions for effective performance” (p. 5). According to the Longman Dictionary (2002), competence is the ability to do something well (p. 311), while a competency is a skill needed to do a particular job. It could therefore be suggested that competence is a more generic concept, while competency is the application of a concrete skill in a concrete situation (Naidenova, 2004).

The differences between competence and competency can perhaps be explained most successfully by using the holistic and atomistic approaches (Krishner et al., 1997). A holistic approach treats competence as a whole which cannot be divided into separate parts. This might be reasonable, as competence is offered to measure a multi-trait, multi-method, and multi-informant process (Kaslow et al., 2007). An atomistic approach assumes that a competency “is broken down into specific skills or simpler competencies” (Krishner et al., 1997, p. 166). Each approach has its advantages and disadvantages, offering potential differences between competence and competency. However, these two terms are often misunderstood and used as substitutes for each other, leading to the many varying forms of analysis.

Another important question is: does a professional use only competence as a whole in their work, or can they also use a competency or multiple competencies? It could be said that they utilize both of these approaches. For example, a surgeon carrying out an operation during which they face unforeseen complications has to apply a required competence. However, at the end of this operation they in effect become a rudimentary tailor who sews together an incision accurately. This task requires the surgeon to apply a well-developed (sometimes even automatic) skill, which can be understood as a competency.

When discussing competences (the plural form of competence), we are talking about the several competences needed to perform a few complex tasks. For example, in a school there are many teachers with excellent competences in the teaching of their respective subjects.

Westera's model of a competence

Westera (2001) proposed a view of the concept of competence from both theoretical and operational perspectives. From the theoretical perspective, competence is understood as a cognitive structure that determines qualified behavior (i.e., a certain type of behavior which enables a successful outcome in an unknown situation or context). This approach can be useful for universities in developing competence-based study programs. According to the operational perspective, competence includes higher-level skills and behavioral strategies that allow individuals to find solutions to complex and unforeseen situations. In this sense, competence includes “knowledge, skills, attitudes, metacognition, strategic thinking, while it presupposes conscious and intentional decision-making” (p. 80).

Westera created a competence model (Figure 1) which could be used as the framework for understanding the structure of competence. He distinguished three main types of activities in producing an efficient result in a daily or professional context: knowledge reproduction; skilled behavior; and competent behavior. The simplest cognitive operation is knowledge reproduction, where a person simply needs to reproduce their theoretical or practical knowledge in a certain situation (arrow 1). This level is the most automatic activity, and does not require complex thinking. For example, recollecting the name of a capital city or stating that two plus two is equal to four are activities that are at the level of automatic behavior. Skilled behavior, such as a tailor's competence to routinely sew uncomplicated clothes on a daily basis, can sometimes require skills alone (arrow 2). For more complicated situations, however, these skills might be empowered with knowledge (arrow 4). To employ competent behavior (such as that of a pilot, teacher, or physician) and act in unpredictable situations, an individual must make use of their values and attitudes (arrow 5), together with the inclusion of knowledge (arrow 6), skills (arrow 7), and the use of mental competencies (arrow 3). All of these qualities are used only when a person has to deal with a complex or atypical situation. Therefore, competent behavior is always connected to conscious thought. The activities of modern work and life are full of complex and non-standard situations which are defined as “non-structured activities” (Jucevičienė, 2007, p. 130). For such activities (for example, the work of a doctor or a teacher), mental competencies are of extreme importance (arrow 3). As Westera (2001)

emphasizes, competent behavior requires conscious thought rather than the automatic behaviors that are common in daily activities. It should be noted that the Westera model emphasizes not only knowledge and skills, but also includes attitudes and values.

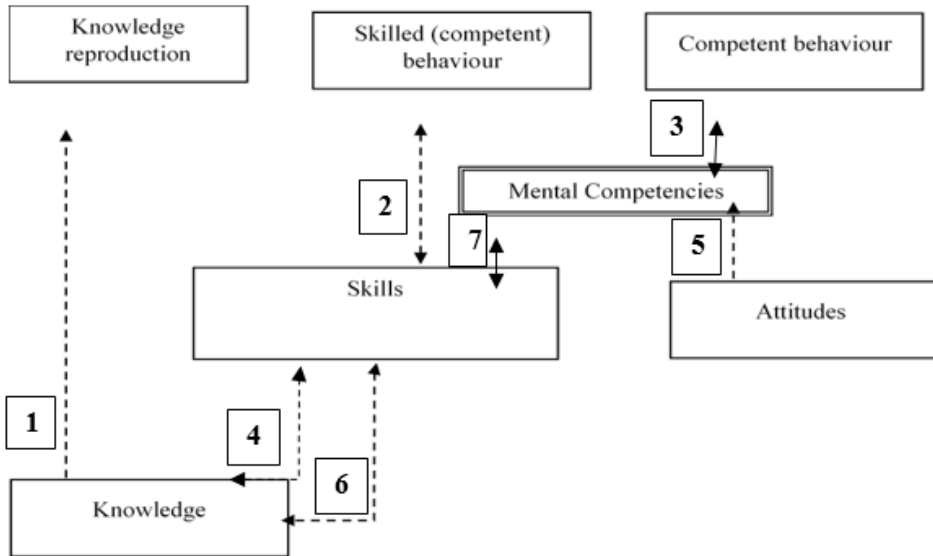


Figure 1. A competence model of Westera (2001)

Westera divides competence into internal and external components. The internal part of competence consists of knowledge, skills, mental competencies, attitudes, and values. These can be collectively considered to represent the “pool,” because they are integral parts that exist “inside” the individual. Some of the content of this “pool” can be used to form a single competency, and this process can be repeated to form a wide variety of competencies for simple activities or work (this is called “knowledge reproduction” and “skilled behavior” in the Westera model of competence). However, when considering complex performance or work (“competent behavior” in the Westera model), a person uses their mental competencies, attitudes, and values, integrating these with knowledge and skills and thus achieving synergy by producing a holistic competence that is more than the sum of its parts. This means that in each specific act of complex work a set of different units of knowledge, skills, attitudes, values, and mental qualities is collected from the “pool,” and all of these are synergized to produce the whole competence which is required to attain success. It should be noted that during such a transformation towards an indivisible holistic competence, a person takes from their “pool” the best existing knowledge, skills, values, attitudes, and qualities to apply to a specific situation. Alongside this process, the learning process also takes place (Westera, 2001). A person does not automatically take the required components from their “pool,” instead they usually perform unique actions or decisions in the process of doing so, and therefore learn from that process. This learning is primarily based on the observation and reflection of situations and tasks after they have been completed. Therefore, transformations of competence occur during this

process as a result of receiving feedback and integrating it into the other elements in the “pool.” In practice, such an application of competence often takes place intuitively, so a person may not even know or be able to name which exact competence was required to perform a complex task. However, individuals who perform “reflection-in-action” have more opportunities to notice changes in their competence. It should be emphasized that the more complex an activity is, the more difficult it is to keep track of changes in competence.

In comparison to other authors and earlier classifications of competence in this paper, it could be stated that Westera’s understanding of competence is a rather broad and complex concept that includes several approaches to its classification. This idea can be found in Westera’s explanation of competence, where he notes that “from a theoretical perspective, competence is conceived as a cognitive structure that facilitates specified behaviors. From an operational perspective, competences seem to cover a broad range of higher order skills and behaviors that represent the ability to cope with complex, unpredictable situations” (Westera, 2001, p. 81). The cognitive aspect of Westera’s definition of competence, which was earlier presented as a “cognitive competence approach” (Norris, 1991), is particularly important. On the other hand, one might point to the “behavioral” component of Westera’s presentation of competence, which helps to achieve efficiency in complex situations and could be understood as the “behavioral or personal competence approach” (Boyatzis, 1982; Norris, 1991; Cheetham and Chievers, 1996). Finally, further analysis of Westera’s competence model indicates that it has components of values and attitudes which connect it to the “values-based competence approach” (Shash et al., 2016). As a result, Westera’s competence model clearly presents a deeper and fuller understanding of the complex phenomenon of competence, and thus requires special attention within the framework of this article.

Detailed analysis of the nature of competence enabled Westera to outline the most typical difficulties connected to this concept. These could be named as follows: the theoretical entity problem; the competence standards problem; the competence assessment problem; the role of values as an integral part of competence; the competence stability problem; the competence complexity problem; and the competence subcompetences problem. For a more detailed analysis, each of these problems are discussed below:

- 1) The theoretical entity problem can be summarized as the difficulty of revealing all of the components of competence. “All we know about the internal structure of competence is that it comprises knowledge, skills, attitudes, and something ‘extra’ that is associated with a new, unknown (theoretical dimension)” (Westera, 2001, p. 82). This new unknown element is difficult to describe, and thus it is more difficult to develop it or to consciously measure it.
- 2) The competence standards problem is connected to the definition of competence which emphasizes the “complex or unpredicted context” of the situation in which the competence is used. It could transpire that several professionals equally well manage a situation in dealing with an ill-defined problem, but each of them chooses a different way in which to address it. As the result, they all use a different competence.
- 3) The competence standards problem is connected to the fact that, in terms of competence-based education, competence is understood as the standard level of behavior in

a working situation. In this case, the concept of competence should be redefined to provide an intermediate level of performance. But does such a compromise meet the educational goal of creative professionals?

- 4) The competence assessment problem is connected to the difficulty of providing a “complex,” “ill-defined,” or “unique” environment in which a student can demonstrate competence, and additionally concerns the high cost of assessment procedures.
- 5) The role of values as an integral part of competence opens up the question of what exactly is meant by “successful performance.” It could be supposed that for different people in different historical periods and places, the same competence would have had a different meaning (for example, the ideas of Nicolaus Copernicus were perhaps too early for the people of his time).
- 6) The competence stability problem is connected to short-term and long-term results. It is understood that a successful result can be achieved by a competent politician or manager who emphasizes short-term actions which could lead to long-term problems in the future (e.g., environmental problems that might appear when a company overuses natural resources for profit).
- 7) The competence complexity problem is associated with the idea that competence is always connected with the “characteristics and background of the person involved” (Westera, 2001, p. 84). In this sense, it could be understood that competence requires the analysis of the learner’s identity, including a more holistic analysis that is not limited to competence (Korthagen, 2004). This conclusion of Westera is perhaps his most important for understanding competence.

Unfortunately, it is difficult to connect this last conclusion with Westera’s other idea that competence, in terms of integral activities, is made up of individual components formed from different skills. For example, an integral activity such as writing a report consists of separate activities: collecting information; performing analysis; applying critical thought; synthesizing information; and, finally, producing the report, receiving feedback, and reflecting on mistakes. Integral tasks require a person to possess certain skills, and it would be impossible to write a report without having and applying the competences that are required for this sort of activity. Thus, according to Westera, the “distinction between skills and competences as different entities is highly unfortunate” (Westera, 2001, p. 84). However, this kind of approach to competence has a more operational character, which appears to contradict Westera’s more epistemological (knowledge-based) and ontological (values-based) approaches to competence.

Although difficult to implement in terms of the assessment of professional performance—and criticized by the author himself—Westera’s competence model (Figure 1) is the only one which unites all of the approaches to competence that are presented in this paper. This can be demonstrated via the following statements:

1. Competence determines successful (efficient) performance.
2. This kind of performance and its success is determined by human determination, responsibility, knowledge, skills, and ability to act; thus, competence is based on human qualities.
3. This performance is conditioned by the context and the situation.

4. Competence is based on attitudes and values.
5. Every human activity is functional. This means that the individual adapts their competence to the context or to the situation, and so competence is flexible. In other words, from all of the qualities that they possess in their pool the individual, at the right time and place based on the activity-conditioned situation, chooses and applies the required qualities that ensure the success of the activity.

It should be emphasized that the more complex an activity is (see Figure 1, “competent behavior”), the more integral competence is required from the individual, i.e., the more difficult it is to break down the competence into separate elements.

More concisely, competence is the individual knowledge, experience, skills, abilities, attitudes, values, and other personal qualities that condition understanding and willingness to deal with concrete intellectual or practical activities and ensure their success.

Of all these personal qualities, special attention should be dedicated to the psychophysiological qualities involved in human activity, such as concentration or attention span. It extremely important that a person dealing with a problem or difficult situation should have the strong conviction that they are responsible for this activity and are capable of accomplishing it. Another important factor is the level of empowerment given to the person by their position or job (for example, a police officer is empowered to investigate a crime), and the extent to which an individual is committed to their values (in this example, whether they decide to take action which is important for society but could be personally dangerous to them).

Thus, competence is a complex concept which, according to Westera (2001, p. 82), has “something extra.” According to Stephenson and Weil (1992), it is an “integration of confidence in one’s knowledge, skills, self-esteem and values” (p. 1), not only in a typical and familiar situation but also in a stressful or novel one (Stephenson, 1998). A more detailed example can help to illustrate the nebulous nature of this concept. An experienced surgeon who is well-known amongst their colleagues undertakes surgery on a serious case that hangs in the balance between life and death, although they know that the success of the operation is very unlikely and, if unsuccessful, will negatively affect the professional standing of the surgeon. However, their position empowers them to act, and their professional values (such as the Hippocratic Oath) call for an attempt to save the patient’s life despite the low probability of success. Therefore, this “something extra” might perhaps be the readiness to take responsibility, where competence plays a role as the driving force that encourages the surgeon to take action.

Additionally, Westera’s “something extra” can be a special characteristic of competence that can be expressed in the concrete activity or in the moment of action. It can be noted that by performing a task a professional is also learning at the same time. This is especially clear if the individual has a particular proactiveness in their daily work, and applies the practice of reflection-in-action. As such, it could be concluded that competence is not a static concept, but has a dynamic and changing nature.

Although the competence of the individual is important in the initial stage of the activity and the moment of action, it is usually consciously acknowledged by the person only after the task has been completed. They can attempt to understand which the most

important quality was that led to their success by performing reflection-in-action. However, it is doubtful whether the person will manage to identify all of these qualities because: 1) the elements that constitute competence often operate integrally and synergistically (especially in non-structured situations); and 2) although the individual's willingness to act and achieve the planned result is mainly based on explicit knowledge that is consciously realized and easy to express, their success is also influenced by the tacit knowledge that they have accrued through experience, which is most often of a subconscious nature and is thus difficult to express. Therefore, not all of the elements of competence can be easily identified, although the ability to do so would be very valuable for the professional as it would enable them to: (a) reflect on a completed task and analyze work, enabling them to develop a required competence and to strengthen its integral components; and (b) anticipate the potential competence required for more complicated tasks and goals in future, and begin to improve existing competences or gain new ones.

Finally, using Westera's model it is possible to identify the differences between *holistic competence* (or competences) and *atomistic competency* (or competencies), and to shed light on the internal workings of these concepts and the situations in which they are deployed.

Conclusions

In seeking to discern the essence of competence without losing sight of its many interpretations, the unique differences in meaning between the terms: *competence*, *competences*, *competency*, and *competencies* were discussed.

The term *competence* is used to express a holistic approach to a non-structured human activity that is hardly, or not at all, divided into separate actions or operations because of its complex nature. This type of concept is difficult to analyze as the components of competence exhibit synergies between each other during the activities and tasks performed. The term *competency* is used to express an atomistic view of a person's ability to accomplish a working task. This atomistic approach means that the working tasks can be classified into separate actions or operations. The accomplishment of a single action or operation requires the usage of a single competency, and such a competency is relatively uncomplicated. The accomplishment of a task that is structured into actions or operations requires the usage of several competencies. For a person to do such a job, they have to accumulate a varying number of competencies depending on the level of complexity of the task.

As has been discussed, the discourse that surrounds competence in the scientific literature is very broad, and while the meaning of competence depends upon the chosen approach, each presents the complex concept of competence rationally. Three of the seven approaches outlined were identified in Westera's competence model. According to this model, competence could be considered to represent an individual's knowledge, experience, skills, abilities, attitudes, values, and other personal qualities that determine their understanding and willingness to solve a concrete intellectual or practical challenge and ensure their success. An individual's competence depends not only on what suite of qualities as a whole (the "quality pool") they have within themselves but, crucially, on

which structure of qualities the individual chooses from the “pool” in order to resolve the situation before them. Attitudes and values are the bases of competence, acting as a task’s driving force and developing both a commitment to accomplishing it and confidence in future success. Competence is not static, but rather possesses a dynamic structure; it can be transformed within an activity, because in every activity a person not only takes steps towards a successful result but learns concurrently, and as such their knowledge, experience, and skills are transformed.

References

- Ash, S., Palermo, C., Gallegos, D. (2019). The contested space: The impact of competency-based education and accreditation on dietetic practice in Australia. *Nutrition & Dietetics*, 76 (1), 38–46.
- Barnett, R. (1994). *The Limits of Competence: knowledge, higher education and society*. Buckingham, Open University Press.
- Barrett, M. (2016). *Competences for Democratic Culture: Living together as equals in culturally diverse democratic societies*. Strasbourg: Council of Europe Publishing. Online. <https://rm.coe.int/16806ccc07> (accessed 1 December 2019).
- Barrett, M. (2020). The Council of Europe’s Reference Framework of Competences for Democratic Culture: Policy context, content, and impact. *London Review of Education*, 18 (1), 1–17. DOI <https://doi.org/10.18546/LRE.18.1.01>
- Bolderston, A. (2007). Maintaining competence: a holistic view of continuous professional development. *Journal of Radiotherapy in Practice*, 6 (3), 133–141.
- Borkowska, K., Osborne, M. (2018). Locating the Fourth Helix: Rethinking the Role of Civil Society in Developing Smart Learning Cities. *International Review of Education*, 64.3, 355–372.
- Boyatzis, R. E. (1982). *The Competent Manager: a model for effective performance*. New York: Wiley.
- Cheetham, G., Chivers, G. (1996). Towards a holistic model of professional competence. *Journal of European Industrial Training*, 20 (5), 20–30.
- Chivers, G., Cheetham, G. (2000). *Towards an Holistic Approach to Professional Learning and Development*. Adult Education Research Conference. <https://newprairiepress.org/aerc/2000/roundtables/10>.
- Clark, T. (2005). Lifelong, life-wide or life sentence? *Australian Journal of Adult Education*, 45 (1), 47–62.
- Daelmans, H. E. M., Hoogenboom, R. J. I., Donker, A. J. M., Scherpbier, A. J. J. A., Stehouwer, C. D. A., Van der Vleuten, C. P. M. (2004). Effectiveness of clinical rotations as a learning environment for achieving competences. *Medical Teacher*, 26 (4), 305–312.
- Davies, H. (2017). Competence-based curricula in the context of Bologna and EU higher education policy. *Pharmacy*, 5 (2), 17.
- Desjardins, R. (2003). Determinants of literacy proficiency: A lifelong-lifewide learning perspective. *International Journal of Educational Research*, 39 (3), 205–245.
- Duron, J. F., Giardina, T. D. (2018). Teaching philosophies and practices in social work education: do the core competencies influence our consciousness? *Social Work Education*, 37 (5), 603–616. <https://doi-org.ezproxy.ktu.edu/10.1080/02615479.2018.1450371>
- ECTS Users’ Guide used by EU (2015). Available online at: https://www.eurashe.eu/wp-content/uploads/2015/06/ECTS_users_guide_2015.pdf, Accessed on 30th of October, 2020.

- Fonseca, P., Ng Picoto, W. (2020). The competencies needed for digital transformation. *Online Journal of Applied Knowledge Management*, 8 (2), 53–70. [https://doi.org/ezproxy.ktu.edu/10.36965/ojakm.2020.8\(2\)53-70](https://doi.org/ezproxy.ktu.edu/10.36965/ojakm.2020.8(2)53-70)
- Friedman, A., Phillips, M. (2002). The role of mentoring in the CPD programmes of professional associations. *International Journal of Lifelong Learning*, 21 (3), 269–284.
- Gardner, H. (1993). *Frames of Mind*. 2nd ed. Fontana, London.
- Glaesser, J. (2019). Competence in educational theory and practice: a critical discussion. *Oxford Review of Education*, 45 (1), 70–85.
- Hoffmann, T. (1999). The meanings of competency. *Journal of European Industrial Training*, 23 (6), 275–286.
- Hunter, J. L., Krantz, S. (2010). Constructivism in cultural competence education. *Journal of Nursing Education*, 49 (4), 207–214.
- Jackson, N. (Ed.) (2011). The Lifelong and Lifewide Dimensions of Living and Learning. In N. Jackson (Ed.), *Learning for a Complex World* (pp. 22–38). USA: Author House.
- Jucevičienė, P. (2007). *Besimokantis miestas*: monografija. Kaunas: Technologija.
- Kaslow, N. J., Rubin, N. J., Bebeau, M. J., Leigh, I. W., Lichtenberg, J. W., Nelson, P. D., ... Smith, I. L. (2007). Guiding principles and recommendations for the assessment of competence. *Professional Psychology: Research and Practice*, 38 (5), 441–451.
- Kelly, G. A. (1991). *The psychology of personal constructs: Vol. 1. A theory of personality*. London: Routledge. (Original work published 1955).
- Kirshner, P., Van Vilsteren, P., Hummel, H., Wigman M. (1997). The design of a study environment for acquiring academic and professional competence. *Studies in Higher Education*, 22 (2), 151. <https://doi-org.ezproxy.ktu.edu/10.1080/03075079712331381014>
- Klamma, R., Chatti, M. A., Duval, E., Hummel, H., Hvannberg, E. T., Kravcik, M., ... Scott, P. (2007). Social software for life-long learning. *Journal of Educational Technology & Society*, 10 (3), 72.
- Kumar, P. M., Aithal, P. S. (2019). Competency Assessment and Grading in Higher Education. *SCHOLEDGE International Journal of Multidisciplinary & Allied Studies*, 6 (12), 127–136.
- Lovell, R. B. (1980). *Learning skills. Adult Learning*. Halsted Press, New York, NY.
- Masten, A. S., Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist*, 53 (2), 205.
- Matvieieva, O., Ovcharenko, N., Korchagina, A., Kuznetsova, O., Grineva, V. (2019). Study of Aspects Facilitating «Lifelong Learning» Competence Development in High School Students. *Revista Romaneasca pentru Educatie Multidimensionala*, 11 (2), 180–197. doi:10.18662/rrem/124
- Messick, S. (1984). The psychology of educational measurement. *Journal of Educational Measurement*, 21, 215–238.
- Miracchi, L. (2015). Competence to know. *Philosophical Studies*, 172 (1), 29–56. <https://doi-org.ezproxy.ktu.edu/10.1007/s11098-014-0325-9>
- Mulder, M. (2000). *Creating Competence: Perspectives and Practices in Organizations*.
- Mulder, M., Weigel, T., Collins, K. (2007). The concept of competence in the development of vocational education and training in selected EU member states: a critical analysis. *Journal of Vocational Education & Training*, 59 (1), 67–88.
- Naydenova, V. (2004). *The professional image of the modern teacher (on the example of the Chemistry specialist)*. Sofia.
- Norris, N. (1991). The trouble with competence. *Cambridge Journal of Education*, 21 (3), 331–341.
- Piaget, J. (1977). *The development of thought: Equilibration of cognitive structures*. (Trans. A. Rosin). Viking.

- Polyakov, M., Khanin, I., Bormatenko, N., Kosenchuk, S. (2018). Ontology of sign: a key to information and technological advancement of the knowledge society. *International Journal of Technology, Knowledge and Society*, 14 (3), 27–46.
- Ramsaroop, S., Petersen, N. (2020). Building Professional Competencies Through a Service Learning “Gallery Walk” in Primary School Teacher Education. *International Journal of Economic & Administrative Studies*, 17 (4), 1–16.
- Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning. (Annex to Recommendation 2006/962/EC). Available online at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32006H0962>. Accessed on 30th of October, 2020.
- Richards, J. C. 1943-. (2002). *Longman dictionary of language teaching and applied linguistics*. London; New York: Longman.
- Salas Velasco, M. (2014). Do higher education institutions make a difference in competence development? A model of competence production at university. *Higher Education* (00181560), 68 (4), 503–523. <https://doi-org.ezproxy.ktu.edu/10.1007/s10734-014-9725-1>
- Sargeant, J., Wong, B. M., Campbell, C. M. (2018). CPD of the future: a partnership between quality improvement and competency-based education. *Medical Education*, 52 (1), 125–135.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. London: Maurice Temple Smith Ltd.
- Sen, A. (1985). *Commodities and capabilities*. Amsterdam: North Holland.
- Sen, A. (1999). *Development as freedom*. New York: Anchor Books.
- Shah, N., Desai, C., Jorwekar, G., Badyal, D., Singh, T. (2016). Competency-based medical education: An overview and application in pharmacology. *Indian Journal of Pharmacology*, 48 (Suppl 1), S5. DOI: 10.4103/0253-7613.193312
- Slenning, K. (1999). *Future school management: do plans and needs match?* Stockholm: Elanders Gotab.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339.
- Spencer, L. M., Spencer, S. M., (1993). *Competence at work*. New York: John Wiley and sons, Inc.
- Stephenson, J., Weil, S. (1992). Four themes in educating for capability. In *Quality in Learning. A Capability Approach in Higher Education*. London: Kogan Page.
- Stephenson, J. (1998). The concept of capability and its importance in higher education. In *Capability and quality in higher education* (pp. 1–13).
- Sullivan, S. C., Downey, J. A. (2015). Shifting educational paradigms: From traditional to competency-based education for diverse learners. *American Secondary Education*, 43 (3).
- Tolliver, D. E, Martin, A., Salome, N. (2017). *Competency-based education, lifelong learning and adult students: Insights from international partnerships between East Africa, Southern Africa and USA-based institutions of higher education*.
- Voinea, M. (2019). The Development of Future Competences—A Challenge for the Educational System. *Revista Românească pentru Educație Multidimensională*, 11 (4 Sup1), 328–336.
- Voogt, J., Roblin, N. (2012). A comparative analysis of international frameworks for 21 century competences: Implications for national curriculum policies. *Journal of Curriculum Studies*, 44 (3), 299–321. <https://doi-org.ezproxy.ktu.edu/10.1080/00220272.2012.6689>
- Walker, M. (2005). Amartya Sen’s capability approach and education. *Educational Action Research*, 13 (1), 103–110.

- Walsh, A., Koppula, S., Antao, V., Bethune, C., Cameron, S., Cavett, T., ... Dove, M. (2018). Preparing teachers for competency-based medical education: Fundamental teaching activities. *Medical Teacher*, 40 (1), 80–85.
- Westera, W. (2001). Competences in education: a confusion of tongues. *Journal of Curriculum Studies*, 33 (1), 75–88.
- Willbergh, I. (2015). The problems of ‘competence’ and alternatives from the Scandinavian perspective of Bildung. *Journal of Curriculum Studies*, 47 (3), 334–354. <https://doi-org.ezproxy.ktu.edu/10.1080/00220272.2014.1002112>
- Zheng, B., Ward, A., Stanulis, R. (2020). Self-regulated learning in a competency-based and flipped learning environment: learning strategies across achievement levels and years. *Medical Education Online*, 25 (1), 1–7. <https://doi-org.ezproxy.ktu.edu/10.1080/10872981.2019.1686949>