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The Theoretical Framework of Factors Influencing the Pedagogical Decision-Making

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Abstract. The paper is based on the analysis and synthesis of scientific literature with the aim to disclose the peculiarities of pedagogical problem-solving as well as decision-making. It highlights the complexity of pedagogical decision-making. Most research of pedagogical decision-making concentrates on various constituents and psychological factors that are directly related to the features of teachers' personality. Some research of pedagogical decision-making focuses on the process of decision-making. Trying to answer the research question, this paper attempts to reveal the main groups of factors that influence the pedagogical decision-making. The theoretical framework, which is based on the insights concerning the pedagogical decision-making factors, is presented.

Keywords: *problem solving, pedagogical decision-making, factors of pedagogical decision-making, the philosophy of education, learner needs, learner and teacher values.*

Introduction

The nature of problem situations, solutions, and processes influence the various kinds of problems that humans solve (Jonassen, 1997). Although the definitions, process of problem-solving vary according to the formed research traditions (e.g. Herde, Wustenberg, & Greiff, 2016; Guss, Tuason, & Orduna, 2015; Funke, 2014), there is agreement that decision making as an integral part of problem-solving is a specific activity focused on a

problem of choice (Funke, 2014; Perkins, 2009; Galloti, 2002; Jonassen, 1997, 2011). Most theories of decision-making have tended to stress the operation of analytic processes in guiding choice behavior (de Martino, 2006), and rely on cognitive processes that ignore interactions with other psychic functions (Funke, 2014). Decision making, as a useful intervening variable offering a possibility to grasp the subtle interaction of the teacher's capabilities, is indicated as very important to teaching which Bishop (2008) called "the most complex of crafts" (p. 34).

Teaching is founded on the desire to combine the teacher's heart and mind and intuitively understand how to deal in a changing situation with a learner who is both a unique personality and a member of the group at the same time (Manen van, 2008). Teaching is a knowledge-intensive (Schoenfeld, 2010), cyclic and continuous process (Poulou & Norwich, 2002), involving dynamic activity (Schoenfeld, 2010) with constant changes, negotiations, actions, and responses to a numerous of variables (Freeman, 1989). Thus, as highly interactive activity (Schoenfeld, 2010), teaching encompasses complex causal relationships among the events taking place within it (Poulou & Norwich, 2002). Being so complex, teaching requires many spontaneous decisions taken at the actual time and place of teaching according to the present circumstances (Osam & Balbay, 2004; Manen van, 1995). According to Shavelson (1973), "any teaching act is the result of a decision, either conscious or unconscious" (p. 144). While pedagogical decisions are made in-the-moment and cannot be unmade (Aho et al., 2010), the need for understanding how teachers make decisions is emphasized. The organization of pedagogical activities must be based on such decisions that could facilitate to individuals not only the access to knowledge and the improvement of their intellectual abilities but also know-how, skills, attitudes, feelings, and emotions (Boghici & Boghici, 2013). However, if the teacher does not know how the teaching is taking place and what factors contribute to meaningful and optimal teaching, pedagogical activities cannot be planned and carried out successfully. Some pedagogical decision-making models focus only on the process of decision-making (Thomson, Bachor, & Thomson, 2002). Most of the pedagogical decision-making models concentrate on various constituents (Palmer & Rangel, 2011; Borko, Roberts, & Shavelson, 2008; Poulou & Norwich, 2002; Colton & Sparks-Langer, 1993; Freeman, 1989). There is a lack of a pedagogical decision-making model which emphasizes not only the peculiarities of the process itself but also the factors that influence the pedagogical decision-making. The research question of this paper asks: what core factors influence the pedagogical decision-making and lead the teacher towards better professional decisions.

The aim of the paper is to introduce the theoretical framework of groups of factors that influence the pedagogical decision-making.

The objectives of the paper: 1) to disclose the variety of approaches regarding problem solving and to reveal that decision-making is a part of problem-solving; 2) to reveal the groups of core factors that influence the pedagogical decision-making.

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The conceptual positions are based on the view that the teacher can be directed to a certain "virtuosity" regarding making unique pedagogical decisions especially about what is educationally desirable (Biesta, 2012a; 2012b). It means that teaching is referred to the search for a practical wisdom – a quality or excellence that spreads through and features the whole person enabling to become educationally wise.

The *research method* is the literature review which according to Grant, Booth (2009) "seeks to identify what has been accomplished previously, allowing for consolidation, for building on previous work, for summation, for avoiding duplication and for identifying omissions or gaps" (p. 97).

The definition and process of problem-solving

The nature of problem situations, solutions, and processes influence the various kinds of problems that humans solve (Jonassen, 1997). Such diversity indicates different types of problems: puzzle problems, well-structured problems, ill-structured problems (Jonassen, 1997), complex problems (Guss, Tuason, & Orduna, 2015) and others. These types of the problems rather represent a continuum from decontextualized problems with convergent solutions to highly-contextualized problems with multiple solutions (Jonassen, 1997).

Researchers (e. g. Funke, 2014; Guss et al., 2015; Herde, Wustenberg, & Greiff, 2016) reveal the absence of consensus regarding definitions, elements and process of problem-solving due to the formed research traditions. In Europe, most research refers to complex problem solving, in the North American tradition the term dynamic decision-making is more frequently used which is similar to complex problem solvingin that it also focuses on environments consisting of connected variables that change over time (for more information see Guss et al., 2015). The North American research tradition stresses problem-solving in distinct, natural knowledge domains, the European research tradition focuses on complex computer-based laboratory tasks that should mirror real-world problems (for more information see Herde et al., 2016). While North American research tradition prefers experts as problem solvers that impart domain-specific procedures with a lot of world and domain knowledge in the background, European research tradition prefers novices that present domain-general strategies influenced by little previous knowledge (for more information see Funke, 2014).

There is an agreement that problem-solving is a cognitive process (Jonassen, 1997; Mayer & Wittrock, 2006; Funke, 2014), a difficult and demanding activity (Raven, 2000), but "as an activity, is more complex than the sum of its component parts" (Jonassen, 1997, p. 66). Diamond (2012) pointed out that problem-solving is one of the three higher executive functions and, as well as reasoning, are completely synonymous with fluid intelligence. Problem-solving, according to Huitt (1992), "is a process in which we perceive and resolve a gap between a present situation and the desired goal, with the path to the

goal blocked by known or unknown obstacles" (p. 34). Mayer and Wittrock (2006) defined problem-solving "as cognitive processing directed at transforming a given situation into a goal situation when no obvious method of solution is available" (p. 287).

Whereas problem-solving engages "the conversation with the problem" (Raven, 2000, p. 479) aiming to clarify the nature of a problem and potential solutions, the attention must be addressed also to external (perspective, dynamicity, structure, difficulty, and context) and internal (problem solver's levels of prior knowledge, experience, reasoning ability, various cognitive styles, and beliefs) factors that affect problem solving (Jonassen, 2011). The core factor is the knowledge as a base that is unique to every problem (Huit, 1992). Also knowledge is as resource (Schoenfeld, 2010) which problem solver has potentially at his or her disposal: domain or factual knowledge (Jonassen; 1997; Mayer & Wittrock, 2006), structural or conceptual knowledge (Jonassen; 1997; Mayer, Wittrock, 2006); procedural and strategic knowledge (Mayer & Wittrock, 2006; Schoenfeld, 2010), metacognitive knowledge (Jonassen; 1997; Mayer & Wittrock, 2006; Schoenfeld, 2010), belief (Mayer & Wittrock, 2006; Schoenfeld, 2010). Moreover, problem-solving engages attitudinal component, motivation and emotional regulation due to frustrations (Jonassen, 1997; Funke, 2014). Thus, the teacher as a problem solver trying to make clear both the nature of a problem and potential solutions must rely on feelings as an "experimental interactions with the environment" (Raven, 2000, p. 479). The internal factors, as well as feelings, indicate the need for knowledge about self (Jonassen; 1997). Similar features could be found in a new problem-solving approach, the so-called "design thinking" (Lietdtka, 2015; Noweski et al., 2012; Rauth et al., 2010). Design thinking deals with everyday life problems including the mindsets of empathy, an attitude of prototyping, collaboration, iteration and feedback (Rauth et al., 2010). Design thinking is understood as constructivist methodology especially suitable for teachers seeking to enable learners to cope with the challenges of the twenty-first century (Noweski et al., 2012).

Though using different terminology, researchers (Huitt, 1992; Donovan, Güss, & Naslund, 2015) point out that there is agreement on the steps of problem-solving process: 1) problem identification and goal definition; 2) information gathering; 3) elaboration and prediction (forecasting); 4) strategic and tactical planning; 5) *decision-making* and action; 6) evaluation of outcome with possible modification of strategy. Each step of the process should be finished before moving to the next step (Huitt, 1992). It is possible to find the individual steps of problem-solving overcoming boundaries of a linear systematic order (Dostal, 2015), but it "has to be orchestrated and integrated into the course of action regulation" (Funke, 2014, p. 496).

Summarizing, problem-solving is a process of cognitive activity that is directed and personal. Whereas problems may be represented in different categories, depending on the nature of the learning desired, according to Jonassen (2011) most of the ill-structured problems can be referred to as decision-making problems. Indeed, decision making as

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a part of problem-solving is a specific activity focused on problem choice (Funke, 2014; Perkins, 2009; Galloti, 2002; Jonassen, 1997, 2011).

What is the decision-making?

The meaning of a *decision* is presented as "a process that weighs priors, evidence, and value to generate a commitment to a categorical proposition intended to achieve particular goals" (Gold & Shadlen, 2007, p. 563). This meaning emphasizes the main aspects of decision making also trying to disclose how decisions are made. According to Gigerenzer and Gaissmaier (2011) the mind applies logic, statistics, or heuristics. Rules of logic and statistics are connected to rational reasoning and heuristics is connected to "error-prone intuitions or even irrationality" (Gigerenzer & Gaissmaier, 2011, p. 453). Whereas abstract decisions are shaped by circuits involved in abstract forms of behavioral planning (Gold & Shadlen, 2007), logical decisions depend on choosing the ways of thinking and behavior seeking to reach the aims, results, and ethical values (Baysal, 2009). Complex decisions are made using sources of evidence that come completely from memory (Gold & Shadlen, 2007).

The origins of the decision-making are based on psychology and economics (Johansen & O'brien, 2015; Kable & Glimcher, 2008). The economic approach offered the rationality models of choice and information processing theories (McFall, 2015; Galotti, 2002, Huitt, 1992). In other words, rationality models of choice (bounded rationality and procedural rationality), claim that humans use logical decision rules to maximize outcomes of scarce resources (McFall, 2015). Whereas bounded rationality approach highlights that humans have limited cognitive resources (McFall, 2015), procedural rationality approach refers to careful decision structuring by creating a list of options and considers the criteria to be used in evaluating and re-evaluating of those options (Galotti, 2002). Bounded rationality models specify six common steps (antecedent conditions, recognizing the opportunity to make a decision, judgment and interpretation of the problem, surveying alternatives, action, and reflection) (McFall, 2015), procedural rationality – five steps (setting goals, gathering information, decision structuring, making a final choice, and evaluating) (Galotti, 2002). Information processing theories present three continuous processes (inputs, processing, and outputs) that allow human experience compared to the metaphor of a computer (McFall, 2015), and indicates that decision making includes at least four phases (an input phase, a processing phase, an output phase, and a review phase) (Huitt, 1992). These classic economic models seek to explain not the process by which those choices are generated, but an individual's evident choices, and could be called "as if" models (Kable & Glimcher, 2008). However, there are attempts to create and develop a more holistic meta-model, including bounded rationality, information processing, and fuzzy-trace theories of decision-making which aim both explain the

process of how a decision is made as well as analyze the outcome of decisions and factors that predict such outcomes (McFall, 2015).

Although above-mentioned models of decision-making are constructed on rationality as well as logic, according to Korte (2003), often decision making does not follow such logical structure. According to Beach (1990), in real life situations, most decision making depends on assumptions and attitudes of decision maker: values and beliefs, the specific objectives pursued by the decision-maker and defined actionplan how to achieve these goals. Scientific literature that deals with decision-making (e.g. Korte, 2003) emphasizes that decision maker also must take into account biases concerning prior hypotheses and focus on limited targets, exposure to limited alternatives, insensitivity to outcome probabilities and the illusion of manageability.

The economic approach has been changed by decision-making covering the psychological aspects of the decision-maker. In general psychology-based decision-making models seek to explain the systems by which choices are generated, behaviour with its causes, and could be called "because models" (Kable & Glimcher, 2008, p. 733). Cognitive theories such as dual process coding theories of cognition to decision making and reasoning stressed internal cognitive and learning processes as sources of decision-making (McFall, 2015). Most theories of decision-making have tended to stress the operation of analytic processes in guiding choice behaviour (de Martino, 2006), and rely on cognitive processes that ignore interactions with other psychic functions (Funke, 2014). Still, there are no clear boundaries between decision-making and other forms of thinking, because they are closely intertwined as a person "decides on a plan or plans how to decide, reasons out a decision or decides on the most important reasons" (Perkins, 2009, p. 2). Consequently, decision-making is focused on a problem of choice (Galotti, 2002), when a person must choose between alternative plans, go/no-go choices, or beliefs to accept or reject leading toward the future (Perkins, 2009).

Decision-making is defined as "a selection process where one of two or more possible solutions are chosen to reach a desired goal" (Huitt, 1992, p. 37). Another important issue focuses on trying to find the alternatives and choose between them based on certain parameters (Baysal, 2009). Johansen and O'brien (2015) claim that "decision-making is a composite process whereby the use of knowledge and experience is integrated with heuristics enabling the practitioner to engage in effective decision making" (p. 46), present the comprehensive and integral definition of decision-making. On a daily basis, people face making decisions both in their private lives and in social issues (Baysal, 2009). Social environments determine that many of decisions are made in the context of social interactions when decisions also depend on the related choices of others (Rilling & Sanfey, 2011). This explains why decision-making is represented as one of the most important abilities, and seeking to develop this ability, according to Baysal (2009), additional knowledge, personal values, and abilities are needed.

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The framework of core groups of factors influencing the pedagogical decision-making

Jackson (1968) had initiated a paradigm shift in educational research, according to Westerman (1991). In order to reveal the complexity of the classroom, Jackson (1968) presented predictive (occurring before teaching), interactive (occurring during teaching), and positive (occurring after teaching) teacher decision making styles. Thus, pedagogical decision-making is indicated as very important to teaching (Palmer & Rangel, 2011; Aho et al., 2010; Borko et al., 2008; Colton & Sparks-Langer, 1993) which Bishop (2008) called "the most complex of crafts" (p. 34). However, such craft must become "an art" (Noweski et al., 2012, p. 78) which leads to discovering the balance between instruction and creative construction of educational practice.

This requires a new approach to teaching which could become education if it leads to becoming a personality. Such education as a unique interpretative-transformational process reflects a teacher's effort and condition to grow, to create original subjectivity and try to conceptualize the learner's meaning based activity (Aho et al., 2010). However, a teacher has to make decisions in a "genuine" way to teach according to circumstances, experience and individual interpretation of reality grounded on their knowledge base (Palmer, Rangel, 2011; Aho et al., 2010; Borko et al., 2008; Colton & Sparks-Langer, 1993). Pedagogical decisions defined "as the fundamental link between complex, real-time teaching situations and practical actions in classrooms" (Borko et al., 2008, p. 39), highlight that pedagogical decision-making must be at the heart of the teaching process (Bishop, 2008). Thus, as pedagogical decision-making is in-the-moment and cannot be unmade (Aho et. al., 2010), the need for understanding how teachers make decisions is emphasized (Borko et al., 2008; Thomson et al., 2002; Colton & Sparks-Langer, 1993).

In the past decade, there has been an increased attention to data-based decision-making in education (Prenger & Schildkamp, 2018; Vanlommel et al., 2018). Data-based decision-making according to Prenger and Schildkamp (2018), can be defined „as teachers' systematic analysis of data sources in order to study and adapt their educational practices for the purpose of maximizing learning results" (p. 1). The main idea of data based decision-making is that teachers must invoke the findings from their data use to their personal teaching activities (Prenger & Schildkamp, 2018). This use can increase the quality of educational decisions (Vanlommel et al., 2018). Vanlommel et al. (2018) research findings show that teachers' decisions are largely based on the intuitive gathering of process data that is supplemented by the rational gathering of data. It turned out that those teachers who focused their teaching approach on socio-emotional processes rather than on transferring of the curriculum showed very little demand for rational data collection for decision-making.

The literature review reveals that some pedagogical decision-making models focus only on the process of decision-making (Thomson et al., 2002). Other pedagogical

decision-making models deal with issues concerning constituents of pedagogical decision-making. Different research highlights experience (Johansen & O'brien, 2015; Lihua, 2010; Aho et al., 2010; Borko et al., 2008; Poulou & Norwich, 2002; Colton & Sparks-Langer, 1993), practice (Borko et al., 2008; Manen van, 2008, 2007, 1997, 1995; Kumaravadivelu, 2001; Colton & Sparks-Langer, 1993), knowledge base (Palmer & Rangel, 2011; Freeman, 1989), values (Schwartz, 2016; Palmer & Rangel, 2011; Aho et al., 2010; Borko et al., 2008; Colton & Sparks-Langer, 1993), awareness (Kumaravadivelu, 2001; Freeman, 1989), beliefs (Palmer & Rangel, 2011; Schoenfeld, 2010; Lihua, 2010). Prenger & Schildkamp (2018) conducted a literature review to identify psychological factors that may be related to data based decision-making according to both to Social Cognitive Theory (Bandura, 1986) and the Theory of Planned Behaviour (Ajzen, 1991, 2002). The study identified such psychological factors as affective and instrumental attitudes, perceived control, social norms, self-efficacy, collective efficacy, and intentions.

Based on the literature review the main groups of factors that influence the pedagogical decision-making are revealed: the philosophy of education, the analysis of learner needs, the adjustment of learner and teacher values, and the harmony of educational theory and practice (see Fig. 1). The framework presents a process of relations of above-mentioned groups when passing through pedagogical decision-making. The pedagogical decision-making is a spiral and dynamical process: after detecting the fact that one factor is not appropriate for learners, a teacher makes a new pedagogical decision. The groups of factors interact with each other, but each of them also reflects its own process. The appropriate philosophy of education is a starter for the pedagogical decision-making. The philosophy of education empowers not only to identify the teacher's direction of activity but also to ground pedagogical decision-making in fundamental values that predetermine all elements of pedagogical decision-making, especially the harmony between educational theory and practice. The specific teaching situation highlights the dominance of the concrete group of factors. Despite the fact that the teacher's goals have not been singled out as a separate factor, they are an integral part of balancing practice and theory, causing a variety of teacher's selected tools and ways of acting. Indeed, it could be said that the goals are included in the purpose of education which is "most central and most fundamental educational question" (Biesta, 2013, p. 38) enabling to make meaningful decisions as to what and how of the teacher's educational pedagogical attempts.

The philosophy of education. Some evidence exists that teachers concentrate on their own philosophies, teaching philosophies, and approaches that influence the way they teach (Duarte, 2013; Westerman, 1991). This is similar to a cognitivist approach, which focuses on the idea that every teacher possesses his or her own "theories" or "philosophies" in the mind (Manen van, 1995). This is also in line with the pedagogy of the educational use of philosophy which, according to Biesta (2011) "focuses on the way in which engagement with philosophy can produce an individual with certain qualities, capacities, and skills" (p. 317). Teachers make efforts to realize a personal philosophy of teaching which reflects

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their personal understanding and beliefs about what good teaching is and how it is achieved (Lihua, 2010). These findings indicate the importance of philosophy of education, warning that if it "wants to be the philosophy of education rather than just philosophy about education ... [it] needs to engage with educational matters and things that matter educationally, rather than just philosophically" (Biesta, 2012a, p. 581). Striving for such engagement, a distinctive responsibility for philosophy of education is emphasized: "to contribute to the public good that education is – or perhaps we should say, in a time in which education is constantly being pushed towards the private good and the economic good: the public good that education *ought to be*" *(*Biesta, 2012a, p. 581).

A teacher has to choose a "genuine" way to teach according to his or her personal interpretation (Aho et. al., 2010) based on his or her own philosophy. Philosophy informs a teacher of a teaching direction, intends to set a link between education and life, i.e. considers life practice as the subject matter and the goal of a research field (Barkauskaitė, Martišauskienė, 2011). It introduces a teacher an opportunity to think about teaching process, achievement of goals in different ways and by various means, to reveal links between the reason and the aftermath, and to imagine and create a personal concept of philosophy of education (Vasiliauskas, 2006). According to Barkauskaitė and Martišauskienė (2011), "philosophy is a bridge between educational theory and practice, and it creates an opportunity for a teacher to interpret education according to his/her own way of thinking, to identify the professional position, to reflect own practice" (p. 50). Therefore, a teacher has no right to ignore philosophy, as, according to Vasiliauskas (2006), teacher competence is based on comprehension of the origin of a person and education, life goals, essence and educational environment's impact on a learner. Duoblienė (2004) underlines that special features of philosophy are not to ensure psychological comfort, so even at school, it is intended not for security needs, but for personal studies and personality formation. According to Vasiliauskas (2006), philosophy could not achieve the mentioned goals without education, without teaching the new generation to think in a broad and innovatory manner and without implementing fundamental values to their consciousness. Above-mentioned aspects highlight the requirement for teachers to grasp as more as possible information about their learners.

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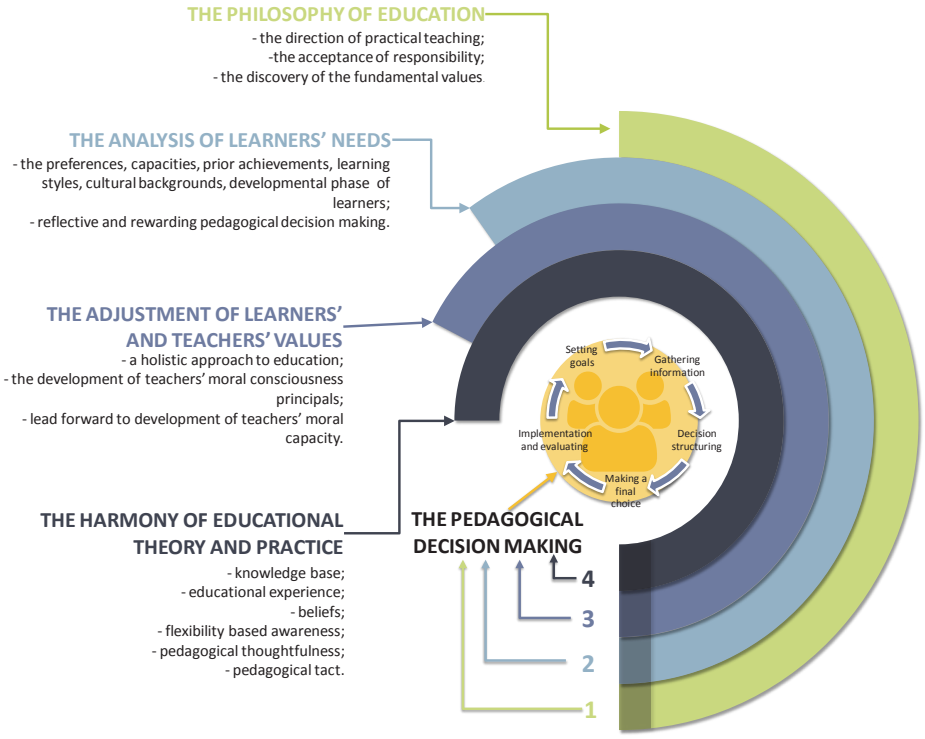

Fig. 1. The core groups of factors that influence pedagogical decision-making

The analysis of learners' needs. Social psychology research points out people's tendency to project their own thoughts, preferences, and behaviours onto other people (Liedtka, 2015). Thus, the analysis of the learner's needs is necessary not only to search for such pedagogical decision-making, which could not be restricted by perception of standard concept "method", but also to empower the development of learners' personalities in general. Research shows that the teaching involves the teachers' commitment to planning appropriate activities that satisfy the needs of learners (Duarte, 2013). One study also argued that usually, the learners' ability and characteristics narrow down the teachers' further possibilities to act (Perfecto, 2012). Moreover, the particular needs of learners shape teachers' beliefs (Palmer, Rangel, 2011). Thus, the knowledge of the learners is presented as the key factor in teachers' action (Aho et al., 2010). All information about the learners, their preferences, capacities, prior achievements, learning styles, cultural backgrounds is necessary to help identify the learners' current needs (Thomson et al., 2002; Colton & Sparks-Langer, 1993). Without such deep understanding, the teacher will not be able to decide which pedagogical approach to use (Colton & Sparks-Langer, 1993).The goal of deep understanding is to get a key to relations between the problem and its context and to find out hidden needs (Scheer, Noweski, & Meinel, 2012). A deep understanding of

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learners' current situation and needs is necessary before moving to the creation of solutions (Liedtka, 2015). Through the analysis of learners' needs, in which teacher focuses on finding learners' explicit and implicit needs, empathy develops (Rauth et al., 2010). From a theoretical point of view, it can be argued that such pedagogical understanding "to be relevant, must be sensitive to a particular group of teachers teaching a particular group of learners pursuing a particular set of goals within a particular institutional context embedded in a particular sociocultural milieu" (Kumaravadivelu, 2001, p. 538). This is a call for teachers to assess the prior learning of their learners seeking to help them to integrate both new information with old knowledge (Westerman, 1991). Prior research has already indicated that such teaching enables learners to contextualize knowledge seeking to establish connections between macro and micro contexts and to realize the relationships between personal experience and broader socio-economic and political contexts (Duarte, 2013). Also, teachers must pay attention to the learners' developmental phase (Aho et al., 2010; Colton & Sparks-Langer, 1993) in determining their needs and take it into consideration when weighing up their decisions (Aho et al., 2010). The teacher's principles and values are linked to the teacher's visible actions and way of thinking (Aho et al., 2010).Furthermore, learners are very sensitive receivers of teachers' messages, and responding to teachers' emotional and behavioural discourses, send their own personal messages back (Poulou & Norwich, 2002). The pedagogical decision-making becomes reflective and rewarding when the learners' values, beliefs, and knowledge are applied as an integral part of the learning process (Kumaravadivelu, 2001).Integrating learners' needs into the pedagogical decision-making provides the support for the solutions and its belief that learners' unexpressed needs and even desires are the ground of appropriate value-based approaches (Liedtka, 2015). This emphasizes the need for the adjustment of learners and teachers' values.

The adjustment of learners' and teachers' values. Most researchers specify the significant impact of personal and social values for pedagogical decision-making (Palmer & Rangel, 2011; Aho et al., 2010; Borko et al., 2008; Colton & Sparks-Langer, 1993). The teacher's main information must be filtered or interpreted through their individual value system as well as goals for the particular lesson (Borko et al., 2008). Indeed, due to filtering and interpretation value based pedagogical decision-making are idiosyncratic (Borko et al., 2008). Such pedagogical decision-making could lead forward to the development of teachers' moral capacity (Schwartz, 2016). The importance of moral orientations for teachers is stipulated by their professional function, covering direct waking up of learners' moral relation with familiar reality (Martišauskienė & Tavoras, 2012). Moral orientations, formed at school, influence such elements of fundamental moral consciousness as conscience, understanding of a duty and responsibility link, also identification of happiness and life essence (Kuzmickas, 2009). The values reflect a general approach to education, as teaching activity results are directly influenced by teacher's priorities, points of view and the things, considered to be the most important (Vasiliauskas, 2006). It is even Dublin

descriptions that define "Awareness of the way of existence" reflect values and provisions as integral elements of education, perceiving social context of (co-)living with others (Bulajeva, 2006, p. 58). In this case, it could be detected that learning/teaching could be evaluated not only by knowledge – deeper and more subtle impact helps to reveal the personality and its natural powers, so learning becomes integral with the perception of the essence (Vasiliauskas, 2011). That is why it is very important that teachers as pedagogical decision-makers need consistently to re-evaluate the similarity between what they value and what learners value (Liedtka, 2015). Through the discovery of the common points, the teacher gets a possibility to harmonize his/her educational theory and practice.

The harmony of educational theory and practice. A theory, according to Schoenfeld (2010) "should provide rigorous explanations of how and why things fit together" (p. 138). A theory can refute the practice, but it also can contribute the practice (Manen van, 2007). Pedagogical decisions are made through an interaction between the teacher's knowledge stored in long-term memory and the information perceived from the environment (Colton & Sparks-Langer, 1993). Knowledge and know-how, or skills create what is often referred to as the knowledge base of teaching which develops and could be redefined throughout the teacher's professional life and thus, become a foundation on which the pedagogical decisions are based (Freeman, 1989). The construction of new meanings and mental models depends on teachers' interpretation of reality grounded in their knowledge base (Colton & Sparks-Langer, 1993). This highlights the importance of teaching experience in the creating and developing the mental models that influence decision-making and guide decisions with consequent action (Perfecto, 2012; Bishop, 2008; Borko et al., 2008). Consequences of the decision-making process include acceptance of choice, re-evaluation of choice, and self-reflection that, linked to the decision, broadens up knowledge and experience and influences future decision-making (Johansen & O'brien, 2015). The research found that teachers based their pedagogical decisions not on theory, rather they were experience-based (Aho et al., 2010). Indeed, teachers' learning experiences, training experiences, on-the-job teaching experiences and their personal experiences are directed by their individual beliefs which influenced pedagogical decision makings (Lihua, 2010). Thus, existing mental models linked classroom situations to prior experience as well as values, beliefs (Lihua, 2010), and teaching goals (Borko et al., 2008) become part of teachers' resources (Perfecto, 2012). Such recourses enable teachers to relate knowledge base as well as general life experiences, and especially educational experiences, to decisions about how to act in the everyday practical teaching situations facing them (Bishop, 2008; Borko et al., 2008). Although experience and knowledge work in harmony, experiential knowledge is necessary but not an insufficient condition for decision-making in the dynamic environment (Johansen & O'brien, 2015). Several notes of caution are presented arguing that such developed mental models, especially engaging reflection in action, could direct to scripting teaching. M. van Manen (1995) warns "if teachers were to try to be constantly critically aware of what they were doing and why they were doing these

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things, they would inevitably become artificial and flounder" (p. 13). Thus, scripting teaching takes away teachers' intellectual and pedagogical capabilities (Hiebert & Morris, 2012) and most "on-the-fly" decisions are made automatically (Borko et al., 2008). This calls for the flexibility based pedagogical decision-making.

The flexibility is necessary for responsive teaching (Colton & Sparks-Langer, 1993). It could be found through teachers' prior learning and teaching achieved "unexplained and sometimes unexplainable awareness" (Kumaravadivelu, 2001, p. 542), mostly out of an understanding of why this is the best particular action for the particular situation (Perfecto, 2012). Such an awareness has been referred to as the teacher's unifying super ordinate that helps to capture the dynamism of pedagogical decision making (Freeman, 1989), sense-making (Manen van, 1977). Awareness as the main of decision-making constituents integrates and unifies teachers' knowledge, skills, and attitude and can explain why teachers grow and change (Freeman, 1989). In other words, it refers to "teachers being, or becoming, aware of how much knowledge they possess, how well skilled they are, or how productive their attitudes are" (Freeman, 1989, p. 34). Teachers' belief systems enable the development of some principles, which are viewed as the sources of how they understand their responsibilities and make pedagogical decisions (Lihua, 2010). However, the link between knowledge and action is unclear as knowing does not mean effective doing (Borko et al., 2008). In spite of this fact, the more knowledgeable and experienced a teacher is, the more aware she or he will be concerning opportunities related to pedagogical decision-making (Osam & Balbay, 2004).

It can be said that the harmony of educational theory and practice can be achieved through "a theory of practice" (Kumaravadivelu, 2001, p. 541) developed by the teacher. A theory of practice arises from the action of thought and thought in action (Kumaravadivelu, 2001) and is the result of what M. van Manen (1995) defined as pedagogical thoughtfulness. According to Jovaiša (2000), thoughtfulness is "a mental feature of personality that allows an individual to contemplate any thought, imposed question, to decide freely and reasonably when evaluating information and experience" (p. 224). The pedagogical thoughtfulness is that a good teacher learns to show to learners (Manen van, 2008) as optimal decisions of activity content, forms, and organization (Jovaiša, 2000), which may depend precisely upon the internalized values as well as embodied qualities, and thoughtful habits that constitute virtues of teaching (Manen van, 2008). In connection with a theory of practice, pedagogical thoughtfulness simultaneously is based on reflective capabilities of teachers (Kumaravadivelu, 2001) that enable teachers to more effective pedagogical decision making and to bridge the gap between theory and practice. The gap arises when all individual details that the teachers should capture in their pedagogical practice are not mentioned in theory (Danner, 2006). The constantly open gap, the interactive nature of teaching, and the kind of knowledge used in this action requires a tact, or more precisely, a type of experience which M. van Manen (1995) called "pedagogical tact" (p. 8) that could help teachers to grasp the nature of the

experienced reality of teaching. Pedagogical tact as an active intentional consciousness of thoughtful human interaction (Manen van, 1995, p. 9) also must be based on affective, cognitive, and interpersonal activities (Raven, 2000). Thus, feelings nurture insights, persistence (conation) fosters testing of those insights, and actual behaviour followed by feeling-based monitoring of the consequence of relevant action prevent from failure in observation, thinking, and learning (Raven, 2000). Such pedagogical tact refers to "a kind of practical normative intelligence that is governed by insight while relying on feeling" (Manen van, 1995, p. 10). Research findings confirmed that teachers acted in a flash and explained their behaviour which relied on the expression of a good feeling (Aho et al., 2010). Pedagogical tact also involves sense-making which through the lens of both teachers' beliefs and knowledge (Palmer & Rangel, 2011) requires that teachers see pedagogy as a way for understanding and transforming possibilities in and outside the classroom (Kumaravadivelu, 2001).

To sum up, it could be said that revealed groups of pedagogical decision-making factors involve a holistic view to both the teacher's and learner's personality and create aims of education. These aims, as well as philosophy of education, must contribute to the enablement of both the teacher and learner "to flourish in a holistic and worthwhile manner with life and existence, not just for the economy, knowledge transfer and citizenship" (Webster, 2013, p. 70).

Conclusions

The pedagogical decision-making reflects a thoughtful activity of the teacher, a way of expression in order to nurture the personal development of learners. The groups of pedagogical decision-making factors are the philosophy of education, the analysis of the learner's needs, the adjustment of the learner's and teacher's values, the harmony of educational theory and practice. Pedagogical decision-making has to be based on the reasoned activity of the teacher that involves setting the goals based on the philosophy of education, selection of methods, tools, and means, the creation of an appropriate environment in order to ensure good "teacher-learner" interaction and imposing development of a learner's personality in general. The groups of pedagogical decision-making factors promote the teacher's striving for individual development both on the personal level (educationally wise) and the professional level (virtuosity in teaching).

The philosophy of education helps the teacher not only to think about teaching processes, how to achieve the aims, to disclose links between the reason and the aftermath. It also enables the teacher to create her/his own perception of the philosophy of education trying to grasp the links between education and life. Moreover, leading to personal studies and personality creating, philosophy of education helps the teacher to develop specific qualities, capacities, and skills that lead to better professional decision-making.

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The analysis of the learner's needs provides an opportunity for a deeper understanding of how to work with learners aiming to foster the development of the learners' personalities in general. The pedagogical decision-making becomes thoughtful and rewarding when the teacher employs the learner beliefs, knowledge, and values as an integral part of the learning process.

Since values reflect general teacher's approach to education (teaching activity results are directly influenced by the teacher's priorities, points of view), there is a need to the adjustment of learner's and teacher's values. With such adjustment, the teacher gets a possibility to harmonize his/her educational theory and practice.

The harmony of educational theory and practice enables the teacher to relate her/his resources (prior experience, values, belief, knowledge base, general life experiences, and especially educational experiences) to decisions about how to act in the everyday practical teaching situations facing them. In other words, the teacher develops her/his own flexible way of practice.

Meeting the theoretical requirements and applying various methods, activities, and combinations of tools the teacher's activity could and has to ensure the personal development of learners in a broad context. One of the essential factors to empower pedagogical decision-making efficiency is a teacher, his/her creative and innovatory approach on presentation of the subject content in a broader meaning, engaging the learners in an inner search. In other words, personality, maturity, points of view, also moral principles that could influence implementation of pedagogical decision-making of a teacher become important. This leads to the development of the teacher's virtuosity for educationally wise pedagogical decision-making.

References

Aho, E., Haverinen, H. L., Juuso, H., Laukka, S. J., & Sutinen, A. (2010). Teachers' principles of decision-making and classroom management; a case study and a new observation method. *Procedia-Social and Behavioral Sciences*, *9*, 395–402. doi: 10.1016/j.sbspro.2010.12.171

Bagdasarov, Z., Johnson, J. F., MacDougall, A. E., Steele, L. M., Connelly, S., & Mumford, M. D. (2016). Mental models and ethical decision making: The mediating role of sensemaking. *Journal of Business Ethics, 138*(1), 133–144. doi: 10.1007/s10551-015-2620-6

Baysal, Z. N. (2009). An Application of the Decision-Making Model for Democracy Education: A Sample of a Third Grade Social Sciences Lesson. *Educational sciences: theory and practice*, *9*(1), 75–84. Retrieved from https://files.eric.ed.gov/fulltext/EJ837776.pdf.

Barkauskaitė, M., & Martišauskienė, E. (2011). Nuo liaudies pedagogikos iki ugdymo filosofijos. *Pedagogika*, *104*, 43–54.

Biesta, G. (2011). Philosophy, exposure, and children: How to resist the instrumentalisation of philosophy in education. *Journal of Philosophy of Education*, *45*(2), 305–319. Retrieved from https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1467-9752.2011.00792.x.

Biesta, G. (2012a). Philosophy of education for the public good: Five challenges and an agenda. *Educational Philosophy and Theory*, *44*(6), 581–593. doi: 10.1111/j.1469-5812.2011.00783.x

Biesta, G. (2012b). The future of teacher education: Evidence, competence or wisdom? *RoSE–Research on Steiner Education, 3*(1), 8–21. Retrieved from http://www.rosejourn.com/index.php/rose/article/view/92.

Biesta, G. J. (2013). Giving teaching back to education: Responding to the disappearance of the teacher. *Phenomenology & Practice, 6*(2), 35–49. Retrieved from https://www.teachertoolkit.co.uk/wp-content/uploads/2016/10/19860-48221-1-PB.pdf. Bishop, A. J. (2008). Decision-making, the intervening variable. In *Critical Issues in Mathematics Education* (pp. 29–35). Springer US. Retrieved from https://link.springer.com/content/pdf/10.1007/BF00144357.pdf.

Boghici, C., & Boghici, S. (2013). The interactive methods and techniques stimulating creativity-crucial components of the didactic strategies. *Bulletin of the Transilvania University of Brasov, Series VIII: Performing Arts*, *6*(2), 23–28. Retrieved from http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=238dfd42-3300-4767-afc4-dbb87eb0d53a%40sessionmgr4008.

Borko, H., Roberts, S. A., & Shavelson, R. (2008). Teachers' decision making: From Alan J. Bishop to today. In *Critical issues in mathematics education* (pp. 37–67). Springer US. Retrieved from https://www.researchgate.net/profile/Philip_Clarkson/publication/227222789_Developing_a_Festschrift_with_a_Difference/links/00b7d52c159c83663d000000.pdf#page=46.

Bulajeva, T. (2006*). Žinių ir kompetencijų vertinimas: kaip sukurti studentų pasiekimų vertinimo metodiką: Metodinė priemonė*. Vilnius: Vilniaus pedagoginis universitetas. Retrieved from http://www.su.lt/bylos/studijos/Stud_kokybe/vertinimo_metodika_bulajeva.pdf.

Colton, A. B., & Sparks-Langer, G. M. (1993). A conceptual framework to guide the development of teacher reflection and decision making. *Journal of teacher education*, *44*(1), 45–54. doi: /10.1177/0022487193044001007.

De Martino, B. (2006). Frames, Biases, and Rational Decision-Making in. *Biol*, *8*, 78. Retrieved from http://science.sciencemag.org/content/sci/313/5787/684.full.pdf.

Diamond, A. (2012). Executive functions. *Annual review of psychology*, *64*, 135–168. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4084861/.

Donovan, S. J., Güss, C. D., & Naslund, D. (2015). Improving dynamic decision making through training and self-reflection. *Judgment and Decision Making, 10*(4), 284. Retrieved from https://digitalcommons.unf.edu/apsy_facpub/2/.

Duarte, F. P. (2013). Conceptions of Good Teaching by Good Teachers: Case Studies from an Australian University. *Journal of University Teaching and Learning Practice*, *10*(1), 5. Retrieved from https://files.eric.ed.gov/fulltext/EJ1005278.pdf.

Duoblienė, L. (2004). Trys filosofijos mokymo kryptys Lietuvos vidurinėje mokykloje. *Acta Paedagogica Vilnensia*, *12*, 156–163.

Fields, A. M. (2006). Ill-structured problems and the reference consultation: The librarian's role in developing student expertise. *Reference services review*, *34*(3), 405–420. doi: 10.1108/00907320610701554

Fischer, A., Greiff, S., & Funke, J. (2012).The Process of Solving Complex Problems. *Journal of Problem Solving*, *4*(1), 19–42. Retrieved from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.225.202&rep=rep1&type=pdf.

Freeman, D. (1989). Teacher training, development, and decision making: A model of teaching and related strategies for language teacher education. *Tesol Quarterly, 23*(1), 27–45. Retrieved from http://tesol.aua.am/tqd_2000/TQD_2000/TQ_D2000/Vol_23_1.pdf#page=28.

Funke, J. (2014). Problem-solving: What are the important questions? In *P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), Proceedings of the 36th Annual Conference of the Cognitive Science Society* (pp. 493–498). Austin, TX: Cognitive Science Society. Retrieved from https://cloudfront.escholarship.org/dist/prd/content/qt76s9s36z/qt76s9s36z.pdf.

Galotti, K. M. (2002). *Making decisions that matter: How people face important life choices*. Mahwah, NJ: Erlbaum. Retrieved from https://books.google.lt/.

Gigerenzer, G., & Gaissmaier, W. (2011). Heuristic decision making. *Annual review of psychology*, *62*, 451–482. doi: 10.1146/annurev-psych-120709-145346

Gold, J. I., & Shadlen, M. N. (2007).The neural basis of decision making. *Annu. Rev. Neurosci*., *30*, 535–574. doi: 10.1146/annurev.neuro.29.051605.113038

Grant, M. J., & Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal, 26*(2), 91–108. doi: 10.1111/j.1471-1842.2009.00848.x

Guss, C. D., Tuason, M. T., & Orduna, L. V. (2015). Strategies, Tactics, and Errors in Dynamic Decision Making. *Journal of Dynamic Decision Making*, *1*(1), 1–14. doi: 10.11588/jddm.2015.1.13131

Herde, C. N., Wustenberg, S., & Greiff, S. (2016). Assessment of Complex Problem Solving: What We Know and What We Don't Know. *Applied Measurement in Education*, *29*(4), 265–277. doi: 10.1080/08957347.2016.1209208

Hiebert, J., & Morris, A. K. (2012).Teaching, rather than teachers, as a path toward improving classroom instruction. *Journal of Teacher Education*, *63*(2), 92–102. doi: 10.1177/0022487111428328

Huitt, W. (1992). Problem-solving and decision making: Consideration of individual differences using the Myers-Briggs Type Indicator. *Journal of Psychological Type*, *24*(1), 33–44. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.643.3379&rep=rep1&type=pdf.

Johansen, M. L., & O'brien, J. L. (2015). Decision making in nursing practice: a concept analysis. In *Nursing forum*, *51*(1), 40–48. Retrieved from https://onlinelibrary.wiley.com/doi/pdf/10.1111/nuf.12119.

Jonassen, D. (2011). Supporting Problem Solving in PBL.*Interdisciplinary Journal of Problem-based Learning*, *5*(2), 95–119. https://doi.org/10.7771/1541-5015.1256

Jovaiša, L. (2000). Apie psichopedijos dalyką ir žmogaus ugdymą. *Acta Paedagogica Vilnensia*, *7*, 208–228.

Kable, J. W., & Glimcher, P. W. (2008). The Neurobiology of Decision: Consensus and Controversy. *Neuron*, *63*(6), 733–745. https://doi.org/10.1016/j.neuron.2009.09.003

Korte, R. F. (2003). Biases in decision making and implications for human resource development. *Advances in Developing Human Resources*, *5*(4), 440–457. doi: 10.1177/1523422303257287

Kumaravadivelu, B. (2001). Toward a postmethod pedagogy. *TESOL Quarterly*, *35*(4), 537–560. Retrieved from https://onlinelibrary.wiley.com/doi/pdf/10.2307/3588427.

Kuzmickas, B. (2009). Humanistinės psichoanalizės žvilgsniu (psichoanalitinė filosofija Leonardos Jekentaitės kūrybinėje veikloje). *Logos*, 58, 6–25.

Liedtka, J. (2015). Perspective: linking design thinking with innovation outcomes through cognitive bias reduction. *Journal of Product Innovation Management*, *32*(6), 925–938. Retrieved from https://onlinelibrary.wiley.com/doi/pdf/10.1111/jpim.12163

Lihua, Y. (2010). A study of ethnic Mongolian university EFL teachers' beliefs and decision making. *Chinese Journal of Applied Linguistics*, *33*(2), 60–75. Retrieved from http://www.celea.org.cn/teic/90/10060805.pdf.

Mayer, R. E., & Wittrock, M. C. (2006). Problem-solving. *Handbook of Educational Psychology*, *2*, 287–303. Retrieved from https://books.google.lt/.

Manen, van M. (1977). Linking ways of knowing with ways of being practical. *Curriculum Inquiry, 6*(3), 205–228. Retrieved from http://amitay.haifa.ac.il/images/1/1f/Mannen.pdf.

Manen, van M. (1995). On the epistemology of reflective practice.*Teachers and Teaching, 1*(1), 33–50. Retrieved from http://www.maxvanmanen.com/MakLZ/files/2011/04/1995-EpistofReflective-Practice.pdf.

Manen, van M. (2007). Phenomenology of practice. *Phenomenology & Practice*, *1*(1), 11–30. Retrieved from https://journals.library.ualberta.ca/pandpr/index.php/pandpr/article/viewFile/19803/15314.

Manen, van M. (2008). Pedagogical sensitivity and teachers practical knowing-in-action. *Peking University Education Review*, *1*(1), 1–23. Retrieved from http://wp.vcu.edu/hhughesdecatur/files/2012/08/2008-Pedagogical-Sensitivity-Teachers-Practical-Knowing-in-Action.pdf.

Martišauskienė, E., & Tavoras, V. (2012). Mokytojų vertybinės rientacijos kaip jų meninės individualybės formavimosiveiksnys. *Acta Paedagogica Vilnensia*, *28*, 73–82.

McFall, J. P. (2015). Directions toward a meta-process model of decision making: Cognitive and behavioral models of change. *Behavioral Development Bulletin*, *20*(1), 32. http://dx.doi.org/10.1037/h0101038

Noweski, C., Scheer, A., Buttner, N., von Thienen, J., Erdmann, J., & Meinel, C. (2012). Towards a paradigm shift in education practice: Developing twenty-first-century skills with design thinking. *In Design Thinking Research* (pp. 71–94). Springer Berlin Heidelberg. doi: 10.1007/978-3-642-31991-4_5

Osam, U. V., & Balbay, S. (2004). Investigating the decision-making skills of cooperating teachers and student teachers of English in a Turkish context. *Teaching and Teacher Education*, *20*(7), 745–758. Retrieved from https://doi.org/10.1016/j.tate.2004.07.003

Palmer, D., & Rangel, V. S. (2011). High stakes accountability and policy implementation: Teacher decision making in bilingual classrooms in Texas. *Educational Policy*, *25*(4), 614–647. doi: 10.1177/0895904810374848

Perfecto, M. R. G. (2012). Contextual Factors in Teacher Decision Making: Extending the Woods Model. *Asia-Pacific Education Researcher (De La Salle University Manila)*, *21*(3), 474–483. doi: 10.1007/s11274-015-1903-5

Perkins, D. N. (2009). Decision Making and Its Development. In Callan, E., Grotzer, T., Kagan, J., Nisbett, R. E., Perkins D. N., & Shulman, L. S. *Education and a civil society: Teaching evidence-based decision making*. Cambridge, MA: American Academy of Arts and Sciences. Retrieved from https://scinapse.io/papers/1571965708.

Poulou, M., & Norwich, B. (2002). Cognitive, emotional and behavioural responses to students with emotional and behavioural difficulties: A model of decision-making. *British Educational Research Journal*, *28*(1), 111–138. doi: 10.1080/01411920120109784

Prenger, R., & Schildkamp, K. (2018). Data-based decision making for teacher and student learning: a psychological perspective on the role of the teacher. *Educational Psychology*, 1–19. doi: 10.1080/01443410.2018.1426834

Rauth, I., Koppen, E., Jobst, B., & Meinel, C. (2010). Design thinking: an educational model towards creative confidence. In *DS 66-2: Proceedings of the 1st International Conference on Design Creativity (ICDC 2010)*. Retrieved from: https://www.researchgate.net/profile/Birgit_Jobst2/publication/268436912_Design_Thinking_An_Educational_Model_towards_Creative_Confidence/links/5544b24d0cf234bdb21c12d0/Design-Thinking-An-Educational-Model-towards-Creative-Confidence.pdf.

Raven, J. (2000). Psychometrics, cognitive ability, and occupational performance. *Review of Psychology*, *7*(1–2), 51–74. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.578.6766&rep=rep1&type=pdf.

Rilling, J. K., & Sanfey, A. G. (2011). The neuroscience of social decision-making. *Annual Review of Psychology*, *62*, 23–48. Retrieved from https://www.annualreviews.org/doi/10.1146/annurev.psych.121208.131647.

Schoenfeld, A. H. (2010). *Howwe think: A theory of goal-oriented decision making and its educational applications*. Routledge. Retrieved from https://www.taylorfrancis.com/books/9781136909795.

Schwartz, M. S. (2016). Ethical Decision-Making Theory: An Integrated Approach. *Journal of Business Ethics*, *139*(4), 755–776. doi: 10.1007/s10551-015-2886-8

Shavelson, R. J. (1973). What is the basic teaching skill? *Journal of Teacher Education*, *24*(2), 144–151. Retrieved from https://files.eric.ed.gov/fulltext/ED073117.pdf.

Thomson, K., Bachor, D., & Thomson, G. (2002). The development of Individualised Educational Programmes using a decision-making model. *British Journal of Special Education*, *29*(1), 37–43. Retrieved from https://onlinelibrary.wiley.com/doi/pdf/10.1111/1467-8527.00235.

Vanlommel, K., Van Gasse, R., Van Hoo,f J., & Van Petegem, P. (2018). Teachers high-stakes decision making. How teaching approaches affect rational and intuitive data collection. *Teaching and teacher education*, 108–119. doi: 10.1177/0895904810374848

Vasiliauskas, R. (2006). Ugdymo filosofijos integravimas į pedagoginę praktiką. *Pedagogika*, *83*, 52–56.

Vasiliauskas, R. (2011). Mokymasis – vertybių ugdymo veiksnys: aksiologinės prasmės įžvalgos. *Acta Paedagogica Vilnensia*, *27*, 79–90.

Webster, R. S. (2013). Healing the physical/spiritual divide through a holistic and hermeneutic approach to education. *International Journal of Children's Spirituality*, *18*(1), 62–73. doi: 10.1080/1364436X.2012.755955

Westerman, D. A. (1991). Expert and novice teacher decision making. *Journal of Teacher Education*, *42*(4), 292–305. Retrieved from http://journals.sagepub.com/doi/abs/10.1177/002248719104200407.

Pedagoginių sprendimų priėmimo veiksnių teorinis modelis

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Santrauka

Probleminių situacijų, problemos sprendimų ir procesų pobūdis lemia žmonių sprendžiamų problemų įvairovę (Jonassen, 1997). Nors problemų sprendimo ir jų proceso apibrėžimai skiriasi, atsižvelgiant į susiformavusias tyrimų tradicijas (Herde, Wustenberg ir Greiff, 2016; Guss, Tuason ir Orduna, 2015; Funke, 2014), mokslininkai sutaria, kad sprendimų priėmimas, kaip problemų sprendimo proceso sudėtinė dalis, yra konkreti veikla, sutelkta į problemos pasirinkimą (Funke, 2014; Perkins, 2009; Galloti, 2002; Jonassen, 1997, 2011). Spręsdamas problemą ir siekdamas nustatyti problemos pobūdį ir galimus sprendimus, problemos sprendėjas įtraukiamas į „pokalbį su problema" (Raven, 2000, p. 479). Tai išryškina ne tik vidinių ir išorinių problemos sprendimo veiksnių (Jonassen, 2011), bet ir požiūrių, motyvacijos ir emocijų svarbą (Jonassen, 1997; Funke, 2014) sprendžiant problemas. Sprendimų priėmimo teorijos neretai pabrėžia pasirinkimo analitinius procesus (de Martino, 2006) ir remiasi kognityviniais procesais, kurie ignoruoja sąveiką su kitomis psichinėmis funkcijomis (Funke, 2014). Pedagoginių sprendimų priėmimas suteikia galimybę atrasti subtilią mokytojų gebėjimų sąveiką. Akcentuojant mokytojo siekius mokyti remiantis savo širdimi ir protu, intuityviai jaučiant, kaip kintančiomis aplinkybėmis elgtis su mokiniu – unikalia asmenybe ir besimokančiųjų grupės nariu (van Manen, 2008),

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išryškinamas pedagoginių sprendimų priėmimo reikšmingumas ugdymo teorijai ir praktikai. Mokymasis, kaip cikliškas ir nuolatinis procesas (Poulou ir Norwich, 2002), atspindi nuolatinį pokyčių, derybų, uždavinių su daugybe kintamųjų ir atsakymų į juos ieškos procesą (Freeman, 1989). Taigi, mokymo sudėtingumas, priklausomas nuo esamų aplinkybių, reikalauja iš mokytojo daugybės spontaniškų sprendimų (Osam ir Balbay, 2004; van Manen, 1995). Kadangi pedagoginis sprendimų priėmimas vyksta „čia ir dabar", jo negalima sugrąžinti atgal (Aho et al., 2010), – visa tai skatina mokslininkus tirti, kokie veiksniai lemia mokytojų sprendimo priėmimą.

Pedagoginės veiklos organizavimas turi būti grindžiamas sprendimais, padedančiais plėtoti mokinių žinias, jų intelektinius gebėjimus, žinojimą, kaip veikti, polinkius, jausmus ir emocijas. Tačiau, jeigu mokytojai nepaiso ugdymo proceso ir neišmano, kokie veiksniai įgalina prasmingą ir optimalų mokymą(si), pedagoginės veiklos efektyvus vykdymas tampa sudėtingas. Kai kurie pedagoginiai sprendimų priėmimo modeliai orientuojasi tik į sprendimų priėmimo procesą (Thomson, Bachor ir Thomson, 2002). Daugelis pedagoginių sprendimų priėmimo modelių atskleidžia įvairias sprendimo proceso dalis (Palmer ir Rangel, 2011; Borko, Roberts ir Shavelson, 2008; Poulou ir Norwich, 2002; Colton, Sparks-Langer, 1993; Freeman, 1989). Mokslinės literatūros analizė atskleidė poreikį sukurti pedagoginių sprendimų priėmimo modelį, apimantį ne tik sprendimo proceso ypatumus, bet ir veiksnius, darančius įtaką pedagoginių sprendimų priėmimui. Todėl formuluojamas *tyrimo klausimas*: kokie pagrindiniai veiksniai daro įtaką pedagoginių sprendimų priėmimui ir skatina mokytojus priimti geresnius profesinius sprendimus?

Straipsnio *tikslas* – pagrįsti teorinį pagrindinių veiksnių, darančių įtaką pedagoginių sprendimų priėmimui, modelį.

Ugdymo filosofija, poreikių (ir mokinių, ir mokytojų) analizavimas, vertybių derinimas, praktikos ir teorijos dermė yra pedagoginių sprendimų priėmimo veiksniai. Ugdymo filosofijos pasirinkimas įgalina mokytoją atrasti unikalią mokymo prieigą, galinčią paskatinti gilią mokinių poreikių analizę, mokytojo ir mokinio tarpusavio pažinimą ir sąveiką, suteiktų galimybių atrasti to, ką vertina mokytojas, ir to, ką vertina besimokantieji, ryšį, taip išryškinant teorijos ir praktikos dermei būtinus sąlyčio taškus. Šie veiksniai tarpusavyje sąveikauja ir suteikia mokytojui galimybių siekti asmeninio ir profesinio tobulėjimo, t. y. priimti geresnius, prasmingus sprendimus. Kitaip tariant, pedagoginį sprendimą lemia ir pats mokytojas, jo kūrybiškas, naujoviškas požiūris, ypač siekiant mokiniams perteikti dalyko turinį platesniame prasmių kontekste ir įtraukiant juos į vidinius ieškojimus.

Esminiai žodžiai: *problemų sprendimas, pedagoginis sprendimų priėmimas, pedagoginių sprendimų priėmimo veiksniai, ugdymo filosofija, besimokančiojo poreikiai, mokytojo ir besimokančiojo vertybės.*

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