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The 21st-Century Empowering Wholeness Adaptive (EWA) Educational Model Transforming Learning Capacity and Human Capital through Wholeness Systems Thinking towards a Sustainable Future

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Abstract: To meet the sustainability challenges in the 21st century, students need to develop a unique human learning capacity for creativity, responsibility, adaptation, meaningfulness, and lifelong learning. Furthermore, current changes in the societal environment have given rise to the need for a new learning strategy that guides learners in perceiving reality as an interrelated purposeful system with meaningful limits rather than collections of facts or systems without limits, as done so far. This paper aims to verify its hypothesis and introduce the 21st-century Empowering Wholeness Adaptive learning model (21st EWA Edu). This is a unique learning strategy that enables a meaningful transformation of learning capacity and creates a unifying learning system of dynamic content, didactics, knowledge, skills, competencies, understanding, values, and behaviors. Over three years, data from three cohorts of students at the School of Business Administration were collected. To assess the impact of the 21st EWA learning approach, both quantitative and qualitative methods of data collection and analysis were employed. The results suggest that the proposed model creates a learning system enabling the transformation of learning capacity while empowering students to become conscious and engaged lifelong learners, which is much needed for a truly sustainable future.

Keywords: systems thinking; education for sustainable development; transformative learning; key competencies in sustainability; critical pedagogy; understanding of wholeness; learning capacity; project-based learning; team-based learning

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1. Introduction

The 21st century is very different from the previous ones. It is characterized by the unprecedented speed and extent of changes in politics, technology, and societal aspirations. We face ethical challenges from new technologies, global climate change, recent pandemics, or war conflicts. As we experience a shift to purpose-driven societies, education plays a pivotal role in the process, and the growing demands of the external environment directly impact graduates.

In the 19th century, as mass production became possible through the exploitation of labor and new industrial and technological inventions, the increasing interconnection of world economies and cultures in the 20th century led to globalization. The invention and democratization of the internet and technological progress evolved into automating manual tasks. In addition, access to information, accelerated technological innovation, the global economy, mass migration, and urbanization have changed the labor market dramatically.

Education and learning have been affected by all these changes mentioned above. However, unfortunately, the pace of the change in the schools' systems hardly keeps up with the fast and dynamic developments. The 19th century was characterized by a static

and standardized curriculum that prepared learners for industrial jobs. Then, 20th-century education started to include individual fulfillment and needs; however, in the 21st century, this ceased to be enough. We are facing unprecedented challenges. There is an urgent need to implement flexible curricula and start creating schools as interconnected learning hubs that not only support individual learning paths, creativity, and lifelong learning but also evolve with the ever-changing external environment. In addition, there is an urgent need to recognize that a sustainable future and humanity's well-being depend on our planet's well-being.

Perceiving reality as the sum of its parts with unlimited borders leads to the mindset of maximization; for example, in an economy where one of the main goals is maximal profit, limitless rising of GDP, maximal consumption, etc., it leads to an unsustainable way of life. One of the reasons for reaching and exceeding the planet's limits is the inability to systematically tame the endless demands of humans. By such behavior, humanity has reached many of the planet's limits which in turn imposed natural limits caused by our external environment. People often only realize these limits when a crisis occurs, animals are exterminated, and natural resources are depleted. Therefore, we are called upon to increase the learning capacity of each learner and enable the systematic recognition and development of individual limits internally without the need for external motivation mediated by, for example, crises, exactly as we see in current global conditions.

Learning and education must develop a learning capacity by replacing a maximization mindset with a mindset of meaningfulness. Working with limits while respecting the external environment, meaning the worldwide natural environment, is a must. Each learner can contribute individually to the larger well-being of all. Therefore, rather than perceiving reality as the sum of its parts, or systems, a new perception of reality, consisting of purposeful, interrelated systems guided by their meaningful limits, is needed.

A house metaphor will be used to better illustrate the case. The house is also a system. The house is not only a collection or a pile of building materials, nor only the building material interconnected to create a structure (basement, pillars, roof, etc.)—in other words, a house is not only a system consisting of parts and interactions. The bigger picture and the overall qualities of a house as a system are only assured by the purpose, defined from the relevant external environment's perspective. Therefore, we need to ask ourselves: "What is the purpose of this particular house?" There will be different requirements for a family house, bank, factory, school, etc., all of which are defined by the purpose of the building. The particular purpose will further define the concrete dimension of the structure of the house's parts and interactions, which we can perceive as their meaningful limits. For example, the best family house does not consist of the best possible rooms, building materials, basement, pillars, roof, etc., but its parts and interactions are derived from the purpose of the house. The best family house, therefore, should be defined by its purpose and driven by the needs of a particular family. As we can see from the example above, the causal direction is the opposite of what has been understood in general so far.

The design of the whole house comes first and is defined by the relevant external environment. Only afterward should we consider the performance of the system´s parts. For example, the size and location of the rooms, required building materials, etc. Therefore, purposefulness and understanding the decision making driven by the purpose comes from the external environment. That way, we replace the maximization mindset by setting meaningful limits for the studied system´s parts and interactions. Simply put, the whole, the house, is not the sum of its parts in a maximization mindset of the sum of the best possible parts. Instead, a meaningful mindset understands why the whole is more than the sum of its parts. Why? Because this higher quality is defined by the relevant external environment, not by the components and interactions themselves, as they have been understood so far.

Similarly, the way learners perceive the educational system largely influences reality. Perceiving reality as a collection of facts or as the sum of its parts or interactions is visible even in some of the most progressive educational strategies today. However, strategic

documents describing the future of education, such as the OECD Learning Compass or Education for Sustainable Development, still treat reality as the sum of its parts and interactions rather than integrated wholes in which purposefulness is defined by the external environment systematically. All the approaches mentioned above focus on describing crucial educational system parts and interactions. However, they do not consider the educational system's purpose, which plays a crucial role in the mindset change of learners, teachers, parents, all educational system parts, stakeholders, and their interactions. One concrete example might be a curriculum divided into subjects such as Geography, History, Math, Languages, etc., at the level of primary and secondary schools. This reductionistic view of the world divided into separate categories poses a very limited view of the interconnected whole. The real world works rather as a process of interrelated systems than just a collection of facts and information sorted into separated subject matters. Learners, educators, parents, and state authorities must understand that the surrounding reality does not consist of limitless collections of facts separated into disciplines and subjects confined into a curriculum. Such a perspective results from specialization and reductionist thinking about the past. Today, interdisciplinarity and meaningfulness lead the way to purposefulness. By creating meaningful limits derived from the perspective of the external environment, a new way of learning can be introduced to understand and handle the reality of the 21st century. By fostering a learning capacity that further sets purposeful limits, we can promote learning and education that engages conscious learners who will create and support a sustainable future.

This article proposes the 21st EWA Edu learning model, which enables the enhancement of learning capacity since it perceives the surrounding reality and the learning system as purposefully interconnected systems. The model stresses limits defined systematically by the relevant external environment rather than the limitless maximization of a collection of facts as treated currently. This paper aims to describe the design and validation of the Unifying Learning Capacity that increases the quality of learning by acquiring a new, special type of cognitive achievement through a systematic didactic path. The innovative approach to learning enhances understanding and awareness of the relevant external environment while challenging current learners' mindsets by highlighting the crucial role of the purposes of interconnected systems, thereby leading lifelong learners to a sustainable 21st century.

This article aims to present a new and sustainable approach to education. It targets a change in values, particularly by shifting the focus from productivity—in the real sense of the word of aiming at maximizing output—to sustainability, as an effective way of learning and teaching, enhancing attitudes within a purposeful vision. In return, this helps learners add their authentic input to the environment they are a part of without dismantling its fragile balance. Such attitudes and mindsets would shift toward a sustainable, integrated, and thriving future for humanity and the planet and all that this interaction entails, from economics to social and political views.

2. Literature Research

2.1. Sustainable Development

In the past few decades, education has incorporated spheres of sustainable development (SD) [1]. SD was introduced in "Our Common Future" report (Brundtland Report) by the World Commission on Environment and Development (Brundtland Commission) in 1987 [2]. The Brundtland Report defined SD as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It presented three dimensions of sustainability: economic growth, environmental protection, and social equality. Elkington further developed this concept in 1998 as the triple bottom line (TBL) concept [3]. TBL attempts to treat all three dimensions of sustainability equally and thus could be considered an integrating theory of sustainability [4]. Sustainable Development Goal 4.7 aims to ensure that by 2030 all learners acquire the knowledge and skills needed to promote sustainable development. SDG includes, among

others, education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and cultural contribution to sustainable development [5].

2.1.1. OECD Learning Framework

Knowledge, skills, attitudes, and values form a complex, interrelated system, resulting in a person taking action. The OECD´s focus on 2030 competencies provides an added value as it explicitly refers to the holistic concept of competence, implying the mobilization of knowledge and cognitive, practical, and socio-emotional skills, attitudes, and values. For this article, the OECD Learning Framework is considered the latest available description of a comprehensive educational system. Educational systems worldwide have been moving from understanding surrounding reality as a collection of facts towards understanding reality as disciplines explaining interrelated systems. This new reality results from a growing emphasis on describing the world consisting of interrelated systems rather than discrete units [6].

Education is considered one of the strongest promoters of sustainable development (SD). The need for teacher education to promote teachers' change agency has been identified as one of the critical prerequisites for ecological and societal transition [7,8]. Sustainable competencies are pivotal for the learner to be successful. Key competencies in sustainability are distinctive and multifunctional competencies, which are composed of several sustainability competencies that functionally relate to each other. This facilitates successful performance and a positive outcome that progresses sustainability (given what is known, valued, and aspired at a given moment in time) while working on specific sustainability challenges and opportunities in various contexts [9].

2.1.2. OECD Learning Compass—Definition of Knowledge Intellectual Level

The OECD Learning Framework distinguishes four different types of knowledge. Disciplinary knowledge includes subject-specific concepts and detailed content, such as that learned in the study of mathematics or languages. Interdisciplinary knowledge involves relating the concepts and content of one discipline to the concepts and content of other disciplines. Epistemic knowledge describes how expert practitioners of disciplines work and think. This kind of knowledge helps students find the purpose of learning, understand the application of learning, and extend their disciplinary knowledge. Finally, procedural knowledge is understanding how something is done: the series of steps or actions taken to accomplish a goal. The OECD Learning Compass highlights transferable procedural knowledge, which is the knowledge that students can use across different contexts and situations to identify solutions to problems [6].

2.1.3. Transformative Education

Education plays an essential role in sustainability and transformative education specifically. Through transformative education, learners are encouraged to critically understand their perspectives of themselves, their relationships with the world, and the multiple social, economic, cultural, and political forces that shape their lives. Jack Mezirow is considered the father of transformative learning. We make meaning out of the world through our experiences. What happens once, we expect to happen again. Through this process, we develop habits of mind or a frame of reference to understand the world. During our daily lives, we absorb, often completely uncritically, values, assumptions, and beliefs about how things are. In addition, Mezirow's theory [10–14] concentrates primarily on personal transformation and empowerment, which involves transforming frames of reference through critical reflection and discourse. The main focus is placed on developing autonomous and independent thinking. He further states that autonomous thinking is vital for full participation in a democratic society and moral decision making [12]; thus, education aims to produce autonomous thinkers. He stresses that learners must critically reflect on their assumptions, underlying intentions, values, beliefs, and feelings [12]. This allows learners

to develop their sense of meaning in a world free of bias. For Mezirow, dialogue is pivotal to the process of learning. "Learners must then engage in discourse with one another, which is an opportunity for them to critically examine the evidence, arguments, and alternate points of view in support of competing interpretations" [12]. Mezirow says that "transformative learning theory is grounded in human communication, where learning is understood as the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one's experience to guide future action" [12]. It can be concluded, for Mezirow, that the educational goal is the perspective of transformation through the transformative learning process.

Transformative education cannot be discussed without mentioning Paulo Freire. Paulo Freire was a Brazilian philosopher and educator. *Pedagogy of the Oppressed* [15] is the most representative of his pivotal work as it promoted ameliorating the living conditions of oppressed people. The conviction of the oppressed to fight for liberation is not a gift bestowed by revolutionary leadership but the result of their conscientização [15], which is a Portuguese term for learning to perceive social, political, and economic contradictions and take action against reality's oppressive elements [15]. Education has enormous power. It either functions as an instrument of conformity that is used to facilitate the integration of the younger generation into the logic of the present system, or it becomes the practice of freedom, how men and women deal critically and creatively with reality and discover how to participate in the transformation of their world [16]. Freire critiques the dominant banking model of education where the teacher is the expert, and the learner is the passive recipient of deposits of knowledge. Knowledge here is seen as a ready-made package and reliable information that must be passed from one person (the teacher) to another (the student). Students are only allowed to receive, store, and recall information and therefore lack creativity and transformation. As knowledge is seen as a gift bestowed upon students, the better the student in the banking model, the less likely the student is to develop critical consciousness. The banking model treats students as objects of assistance and inhibits creativity, naturally resisting dialogue. Students successful within the banking model absorb reality and adapt to the world as it is taught and presented to them without questioning, perpetuating further oppression. Without inquiry and dialogue, students cannot be truly human. Freire argued that the banking model only reproduces inequality and promotes existing knowledge while maintaining existing power structures.

3. Materials and Methods

This section presents materials and methods which enable the development of the new learning system, the 21st EWA learning model. Today's interrelated and complex reality requires us to search for solutions in interdisciplinary domains. Therefore, it is necessary to analyze, synthesize, and harmonize links between various disciplines. The foundations for the proposed model link disciplines and theories into a coordinated and coherent whole.

3.1. Wholeness Systems Thinking (WST), Reductionism Systems Thinking (RST)

Systems thinking (ST) is a methodical approach to understanding problematic situations and identifying solutions to these problems [17]. ST considers systems as consisting of parts, interactions, and a purpose [18]. The mutual relation between system elements is critical for the system's performance as a whole. The important role of the external environment in assessing the system in systems thinking has already been discussed [19].

Wholeness is defined as the state of forming a complete and harmonious whole, in other words, unity. Therefore, the proposed ST approach defines the relationship between system elements and the implementation of the role of the superior system/external environment for the performance of system elements (purpose, parts, and interactions), and the system as a whole is defined as Wholeness Systems Thinking (WST) [20]. A new understanding of the role and importance of purpose in the pyramid hierarchy of a system is defined by Wholeness Synthesis (WS) and Wholeness Analysis (WA) (see Figure 1). The

current general understanding of analysis is taking the system apart, and synthesis refers to connecting the individual parts and creating the whole system.

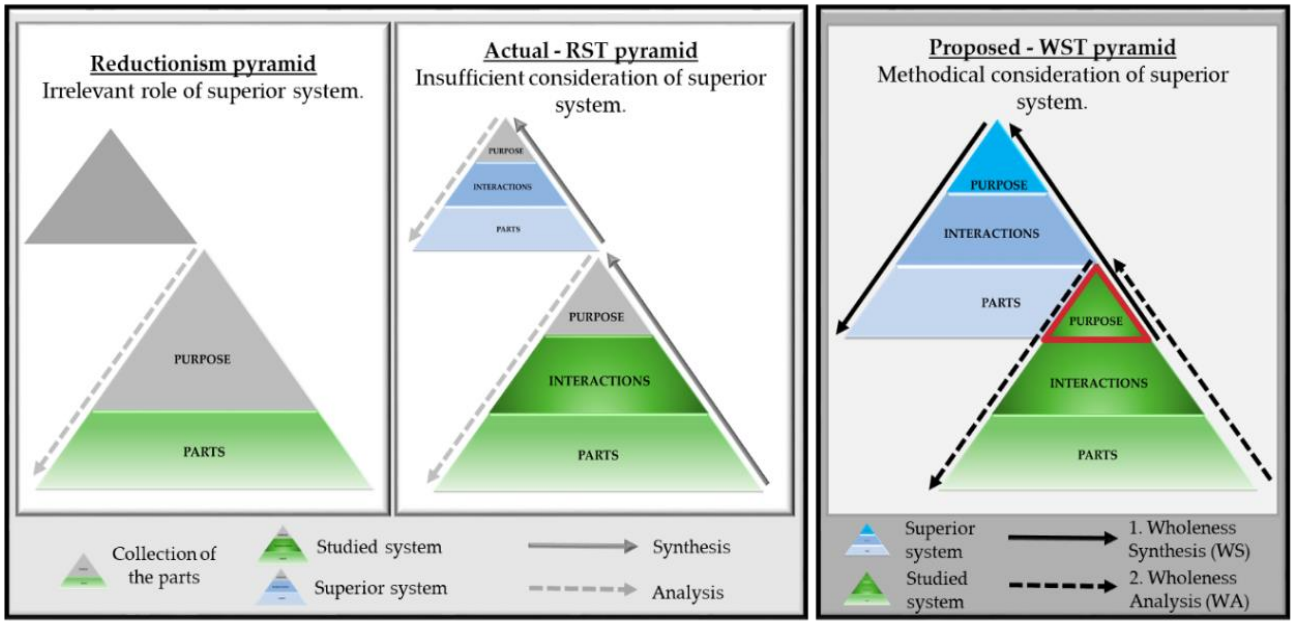

Figure 1. The role of the system´s purpose in systems thinking development [20].

The purpose of the system is its element responsible for the performance of the parts and their interaction concerning the important role of the external environment.

WS combines the influence of the external environment and the superior system on the performance of the studied purpose of the system. WA divides the system into elements (parts and interactions) in terms of the purpose of the system (the purpose has already been defined as WS).

Due to significant changes in the external environment, the systematic identification of the purpose of the studied system in the superior system representing the external environment is responsible for optimal performance and resource consumption of the parts and interactions of the studied system. The basic role of the system's purpose is the basis for the difference between the current RST and the new WST approach in understanding and evaluating systems. It is, therefore, necessary to define a new systemic thinking that takes into account the important role of the external environment with respect to the new role of the system's purpose. The synthesized system´s purpose systematically connects the superior system representing the external environment with the studied system. It expresses an active role in defining the performance of the elements of the studied system: parts and interactions [20].

Figure 2 shows the important difference between the traditional understanding of meaning analysis and synthesis, describing the studied systems in the worldview of disconnected systems. On the other hand, the worldview of interconnected systems requires a purposeful and systematic interconnection between systems. This is made by the studied system´s purpose, which is defined by the relevant external environment by Wholeness Synthesis. Afterward, Wholeness Analysis is responsible for transmitting purposeful limits for the performance of system parts and interactions [20].

The innovative systems thinking approach, WST, is further used to define the new intellectual capacity, Understanding of Wholeness (one of the fundamental bases of the proposed 21st EWA Edu model). Since the world is created from interconnected, interrelated systems, there is a fundamental need to understand how these systems work as a whole. Therefore it is crucial to understand the role of the relevant external environment that defines meaningfulness by proposing meaningful limits and barriers. This logic is also true for the learning system itself.

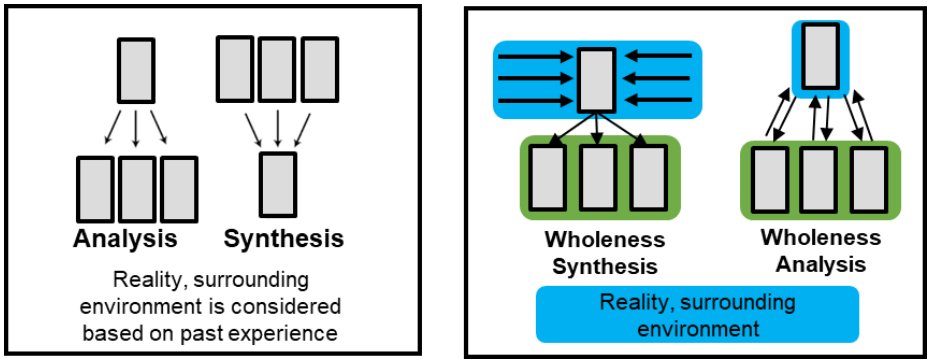

Figure 2. Disconnected vs. interconnected system´s perspective.

3.2. DIKW Pyramid

The pyramid is often quoted or used implicitly in definitions of data, information, and knowledge in textbooks on information management, information systems, and knowledge management. The hierarchy is used to contextualize data, information, knowledge, and sometimes wisdom with respect to one another and to identify and describe the processes involved in the transformation of an entity at a lower level in the hierarchy (e.g., data) into an entity at a higher one (e.g., information). The implicit assumption is that data can be used to create information, information can be used to create knowledge, and knowledge can be used to create wisdom [21].

The DIKW pyramid model describes the relationship between Data, Information, Knowledge, and Wisdom [22]. Zeleny defines Data as Know-Nothing, Information as Know-What, Knowledge as Know-How, and Wisdom as Know-Why [23] (see Figure 3). Ackoff defined Data as Symbols; Information as processed data to be useful, providing answers to who, what, where, and when questions; Knowledge as the application of data and information answering how questions; Understanding as an appreciation of why; and Wisdom as evaluated understanding [24]. At the same time, he declares the role of data, information, and knowledge in the educational system as follows: most of the time spent in school is devoted to the transmission of information, less time is devoted to the transmission of knowledge, and almost no time to transmission for understanding [25]. For the DIKW pyramid visualization, see Figure 3.

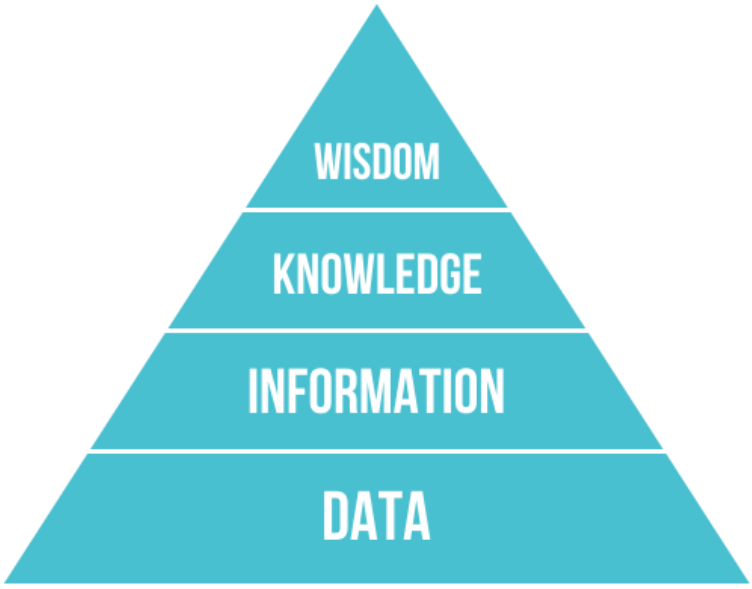

Figure 3. DIKW pyramid hierarchy [21].

The transition between the DIKW visualization levels could be seen as a function of Human Agency (for example, distinguishing Knowledge in terms of explicit and implicit types) Human Agency (the ability to learn how to learn) corresponds to the learner's intellectual development, which further depends on the ability to understand the transformation steps in reaching more valuable levels of intellectual capacity. Therefore, the important difference between levels in the hierarchy is the Human Agency, the Meaning, and the Value perspective [26].

3.3. Understanding

Understanding is the relation between the knower and an object of understanding. Understanding implies abilities and dispositions with respect to an object of knowledge that is sufficient to support intelligent behavior [27]. Epistemology is often defined as the theory of knowledge. However, epistemologists have recently started to pay more attention to the epistemic state or states of understanding, asking questions about its nature, relationship to knowledge, connection with explanation, and potential status as a special type of cognitive achievement [28–30]. In this article, understanding is considered more valuable than knowledge; it will be concretely argued that understanding (unlike knowledge) is a type of cognitive achievement and therefore of distinctive value.

3.4. Wisdom

Wisdom is defined as the capacity to realize what is of value in life for oneself and others [31]. Within the presented DIKW pyramid, Wisdom is understood as more valuable than Knowledge. From that perspective, Knowledge (Know-How) to do something is more valuable than Information (Know-What) because it produces something. Knowledge itself could be considered a neutral tool that can be used for human harm or human good. Therefore, knowledge needs to be directed to create good through Wisdom and increased value in life for oneself and others. Wisdom is considered the evaluation of knowledge.

3.5. Agile Team-Project-Based Learning

Paulo Freire and Jack Mezirow were the main sources of inspiration for the 21st EWA Edu. Both Freire and Mezirow knew that education had enormous power. It either serves as an instrument to facilitate the integration of learners into the logic of the present system, bringing about conformity, or it becomes a practice of freedom. It is through education that students deal critically and creatively with reality and discover how to participate in the transformation of their world towards a more sustainable one.

Due to the introduction of new advanced technologies, digitalization, and automation, there has been an inevitable shift highlighting new sets of skills that educational institutions must address. One such skill is especially key—the ability to employ active learning strategies. In a rapidly changing world, a primary goal of educators should be to promote these strategies, realizing the effects of sustainable learning and increasing students' motivation to learn. Prior models of education, where teachers are experts and learners are passive recipients of deposited knowledge, cease to work. Passive models of learning, which Paulo Freire calls 'banking education,' treat students as objects, inhibit creativity, and naturally resist true dialogue. Therefore, the correct method lies in dialogical learning that enables students' voices to be represented. Dialogical learning encourages students to become critical thinkers, promotes creativity, stimulates critical reflection, and positions learners as participants in knowledge creation.

ATPB learning, as a didactic model, is based mostly on dialogical learning and a motivational account of cooperative learning as it builds on five central elements of cooperative learning. These elements are: Firstly, a sense of positive interdependence established and maintained so that members of the team recognize that the team's success is in the interest of all its members. Secondly, individual accountability is essential for the team's functioning, indicating that practices must be in place to ensure that each team member recognizes their responsibility for the common work. Thirdly, the team process must

involve face-to-face interaction, ensuring members actively work together to promote and support each other's learning. Fourthly, social skills, including communicative skills and conflict resolution skills, are necessary for cooperation. Fifthly, team processing occurs when the group becomes self-reflective, critically evaluating their goal achievement and working relationships [32]. See [33–36] for more information.

4. Results

Learning needs to aim to do more than simply prepare young people for the world of work. Instead, it needs to equip learners with a learning capacity that engages them in developing the skills, competencies, and values they need to become active and responsible citizens.

The lack of clear limits in current systems poses many pitfalls. However, identifying them is crucial because they forsake individual containment and foster an unsustainable mindset. Therefore, a reiteration of the need for systems thinking that is purposeful and mindful within acknowledged confinements is not only necessary but also vital. This paper understands the need for an educational context that focuses on parts but claims that such a need is no longer relevant, given human perception and technology development. The proposed model presents a learning system supporting learners in reaching a purposeful learning capacity, helping them to be able to achieve their potential while contributing to the sustainable prosperity of both local and global society.

A perspective of Wholeness inspired by Wholeness Systems Thinking is applied to the design of the entire 21st EWA Edu learning model, including learning capacity development.

Section 4.1 contains the 21st EWA learning model introduction. The entire model is described based on the former DIKW hierarchy from the information sciences, which is further considered a learning system. In addition, there is a description of the learner´s intellectual capacity, level of performance, consciousness, and capacity, which are regarded as parts, interactions, and purposes of the presented learning system.

Section 4.2 describes the new intellectual and cognitive achievement, the Understanding of Wholeness, which is further compared with currently applied Holistic Understanding. Special attention is dedicated to the proposal and description of the new level of learning, Learning by asking about the Purpose.

Section 4.3 presents the development of learning capacity from a Transformative Learning Capacity to a Unifying Learning Capacity, which is essential for changing the perception of the value of learning. Furthermore, the roles of Wisdom and evaluation level in intellectual capacity are presented.

Section 4.4 introduces the integrative six didactic steps and two Learning by asking about the Purpose postulates, which present systematic support, scaffolding, and how to apply the proposed model into everyday classroom practice.

Section 4.5 presents the hypothesis' quantitative verification, and the feedback from 531 learners is considered.

The last part, Section 4.6, presents a hypothesis proposal connected with the proposed Unifying Learning Capacity (ULC), identifying the higher learning value in the transition from TLC to ULC. The hypothesis is formulated based on Kolb´s experiential learning cycle, i.e., reflective observation and abstract conceptualization.

4.1. The 21st EWA Learning Model Introduction

Learning is a permanent change in behavior or the ability to behave in a given way that results from practice or other forms of experience [37]. It spans a range of processes from practice and rote memorization to the invention of novel abilities and scientific theories that extend the experience. Learning is acquiring new understanding, knowledge, behaviors, skills, values, attitudes, and preferences [38]. Human intelligence, thinking, and learning are inseparable processes, part of a single, dynamic, multifaceted, functional capacity inherent in human consciousness [39].

The representation of the world as global, interdependent, complex, multipolar, rapidly changing, diverse, conflict-affected, fragile, and uncertain has become part of the mainstream discourse. The expression VUCA world was used for the first time in the military context in the 1990s. The acronym has been established to reflect the risks and opportunities of a world marked by volatility (the nature and dynamics of change, and the nature and speed of drivers of change), uncertainty (lack of predictability), complexity (the confounding of issues, no cause-and-effect chain), and ambiguity (cause-and-effect confusion). An integrated, holistic approach is most likely the best answer to the often complex, intractable, dynamic, and multifaceted problems posed by the challenges of the 21st century. To be prepared for the future, individuals must learn to think and act in a more integrated way, considering the manifold interconnections and interrelations between—at times, superficially and in the short term—contradictory or incompatible ideas, logic, and positions. This implies nurturing the future in the short run [40].

However, there is a difference between the holistic approach; the holistic concept of competence implying the mobilization of a combination of knowledge and cognitive, practical, and socio-emotional skills, attitudes, and values in understanding the surrounding reality applied in OECD Compass 2030 [41]; and the proposed approach: an Understanding of Wholeness of the studied phenomena. The proposed approach represents a new type of cognitive achievement that is more valuable than knowledge or currently used understanding (hereafter defined as Holistic Understanding) resulting from past experiences.

The 21st EWA model is designed based on the former DIKW hierarchy, which originated in the information sciences (see Figure 4). The hierarchy was chosen because it represents a system with a concrete structure of the entire intellectual development levels that any learner should acquire during lifelong learning. Every student should go through all stages during lifelong learning and achieve life wisdom by understanding oneself in the context of the surrounding environment. The learning system should be able to guide learners through intellectual stages, levels of performance, and consciousness. The proposed model enables us to see the learning process as a system from the perspective of wholeness.

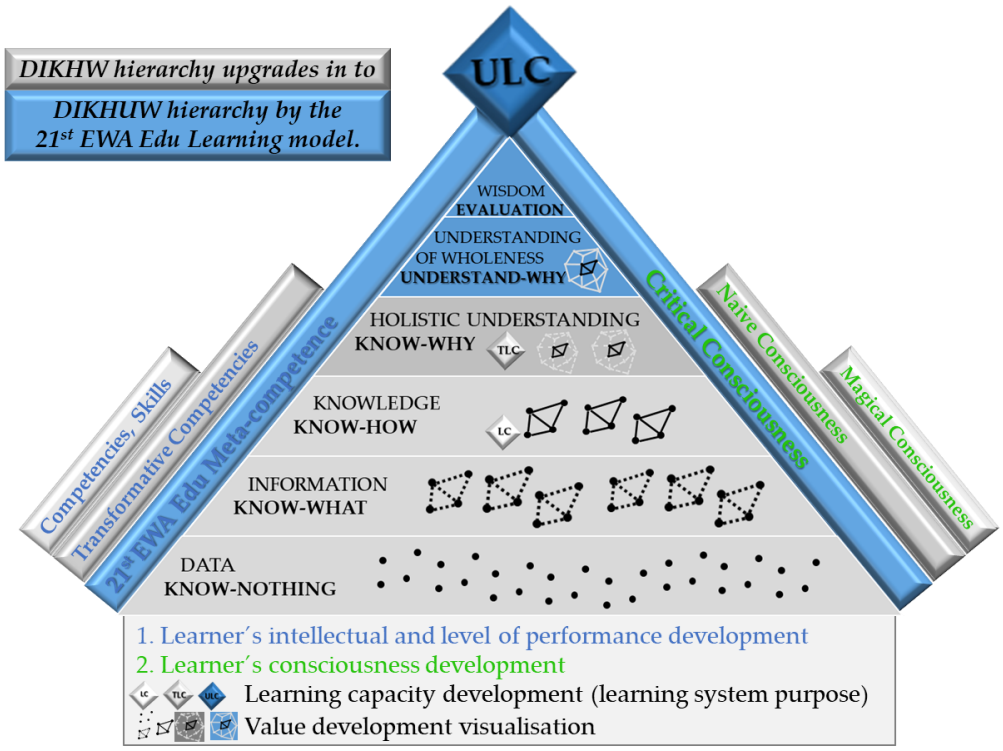

Figure 4. The design of the 21st EWA Edu learning model.

The proposed 21st EWA Edu learning model is a transformative sustainable learning system. It presents a new intellectual capacity (cognitive achievement), an Understanding of Wholeness that provides an understanding of the interactions of complex systems, including the educational system itself, that make up the global environment of the 21st century. The 21st EWA learning model systematically defines the learning path delivering meta-competence. Here, the meta-competence integrates the learner´s intellectual and performance development levels as well as consciousness development. It represents a purposeful educational goal, Unifying Learning Capacity, and enhances the development of mature and engaged citizens contributing to and benefiting from a sustainable future. The main goal is to enable learners to see the surrounding reality and learning process as an integrated whole rather than just a collection of parts and interactions.

The value development is defined based on the purpose and meaningfulness identified from the relevant external environment via the system´s purposes, not by the function of the studied system itself (which is the cognitive quality delivered by Knowledge). Therefore, there is a need for a new creative cognitive capacity intellectually defined by purposefulness (meaningfulness). Therefore, a new hierarchy is proposed, considering the new intellectual capacity: DIKHUW (see Figure 4). For a more precise comparison of the actual and proposed status, see Figure 5. The fundamental logic behind the model is as follows. The dramatically changing relevant external environment is responsible for defining new purposes and meaningfulness (a stable external environment defines only one purpose). New purposes are responsible for defining new values in general; for the learning system, the new value comes from the external environment, not the previous intellectual steps. It does not become more valuable as more and more data (symbols) are transformed into information and committed to memory. It does not become more valuable as more and more information is transformed into knowledge and it is being applied. This is a quantitative perspective: the more, the better. Therefore, the quantitative approach needs to be replaced by a qualitative approach. Specifically, seeing the transfer of data to information, information to knowledge, knowledge to understanding, and understanding to wisdom in the context and circumstances of reality is to see and understand the true value of what is being learned.

The learning system's purpose, meaningfulness, is based on a qualitative perspective, that is, on setting up the meaningfulness (meaningful limits), identifying clearly which quantity is valuable and which is not. Quality is defined by considering the requirements of the relevant external environment. The proposed cognitive capacity intellectually considers the crucial role of the relevant external environment for meaningfulness. Therefore, capturing the new cognitive capacity to intellectually consider the role of the external environment is essential. Every learner should be aware of this logic and meaningfulness and, at the same time, understand the full potential they could reach during lifelong learning and thus contribute to the future they want.

A learner´s intellectual development refers to the changes that occur due to growth, development, and experience in a learner´s capacities for thinking, reasoning, relating, judging, and conceptualizing. It applies the DIKW hierarchy and updates it with two new dimensions: the currently used Holistic Understanding and the proposed Understanding of Wholeness, recognizing the need to systematically (intellectually) consider the crucial importance of the external environment in explaining the studied phenomena (systems). During the learning development, the entire system (the whole) is considered. The focus is on the intellectual, valuable transmission between data, information, and knowledge, and the transfer of Holistic Understanding to Understanding of Wholeness and Wisdom. This is supported by the WST approach.

A learner´s level of performance development describes the performance of skills (skilled performance), which means the accuracy and speed in performing particular tasks. At the same time, the level of performance describes competence (generally a very broad term), in this article, as a set or combination of characteristics and skills that enable or improve the performance of a specific role, learner´s activity, or job [42].

Learners' conscious development integrating formative and transformative education consists of dialogical learning (Team-Project-Based Agile Learning), and conscious development is achieved through an innovative relationship between the teacher as a guide and the learners who become responsible for their education. Paulo Freire also recognizes three levels of consciousness. Magical consciousness—people experience themselves as completely unable to control the things that happen to them and cannot change their personal or socioeconomic situation. Naive consciousness—here, people distinguish between themselves and the outside world. Life does not just happen to them. There is a sense that things are within reach. However, some things are seen as only attainable with assistance. Finally, critical consciousness is where people achieve an in-depth understanding of the world and one's place in the world, enabling the awareness of and exposure to social and political contradictions. While recognizing these contradictions, people act against the oppressive elements illuminated by their understanding.

The 21st EWA Edu model is designed as a DIKHUW hierarchy and presents the range of intellectual capacity, level of consciousness, and awareness from the perspective of wholeness. At the same time, it presents the development of learning system purposes, which are defined as learning capacity, concretely LC > TLC > ULC. Being responsible for lifelong learning requires adequate learning capacity (learning maturity), which involves internal motivation. The true value of learning is evident when there is a lasting change in learners' behavior that leads to positive outcomes for the individual learner and the entire community and natural environment. Therefore, each learner should be aware that they are not an object of learning but a subject of learning responsible for their education. At the same time, they are aware of the entire range of learning which represents a meta-competence that unifies the understanding of the learning process itself and the understanding of the surrounding reality as such. This approach leads to the individual learning maturity of the learner and the strengthening of their capacity for lifelong learning.

4.2. The Understanding of Wholeness, the New Intellectual, and Cognitive Achievement

For this article's purpose, the OECD Learning Framework is considered the latest available description of a comprehensive learning approach. The OECD´s Learning Compass 2030 focuses on competencies and provides added value as it explicitly refers to the holistic concept of competence involving mobilizing knowledge and cognitive, practical, and socio-emotional skills [43].

We are emerging from thinking of the world as made up of discrete parts to thinking of the world as interrelated systems [44]. Learning needs to be seen as moving from viewing an object as a collection of facts to understanding a discipline as an interrelated system. The DIKW hierarchy and the definition of different kinds of knowledge from the OECD Learning Compass are used to define and present Holistic Understanding [45]. Understanding is seen as involving abilities and dispositions concerning a subject of knowledge that is sufficient to support intelligent behavior [46]. The proposed Understanding of Wholeness offers a new perspective on intellectual development by adding a new dimension to the holistic approach, resulting in a new and valuable type of cognitive achievement. Holism, or the holistic approach, is understood more as focusing on the interactions of parts, creating a bigger whole than just the collection of the parts. Another description is that the parts of the whole are in intimate interconnection, meaning that they cannot exist independently of the whole or cannot be understood without reference to the whole—which is greater than the sum of its parts [47,48]. The holistic approach in anthropology and other sciences considers the context of the surrounding systems (the study of humans means considering culture and all its parts, language, history, social dynamics, the environment, etc.) [49]. The holistic approach, in comparison with Understanding in Wholeness, lacks the dimension of a deeper quality. This means that it lacks awareness of the surrounding systems, i.e., the relevant external environment, from the point of view of meaningful limits of studied systems. This happens because a holistic approach relies only on experiences and best practices of the past. Nevertheless, the meaningfulness of the studied system´s parts

and interactions can only be considered systematically with the fundamental need of the system´s purpose, further defined by the actual relevant external environment. Therefore, new levels of intellectual capacity are proposed, within the hierarchy of the 21st EWA Edu learning model, describing the current and proposed state of understanding, Holistic Understanding, and Understanding of Wholeness.

The New Level of Learning—Learning by Asking the Purpose

The ability to integrate systems intellectually with the new perspective of intellectual development rather than applying the former holistic perspective, that is, considering the external environment in the stable condition of the past, is of utmost importance. Testing the purpose throughout numerous generations created experiences that delivered understanding in a stable relevant external environment. Making the distinction between the actual application of Holistic Understanding and the proposed Understanding of Wholeness as the new way of learning, *Learning by studying experiences—Know-Why*, is needed to deliver understanding that results from the experiences of the past external environment. The proposed way of understanding is needed because it is used mostly unconsciously, and the Understanding of Wholeness represents a different level of understanding. The proposed intellectual capacity, inspired by Wholeness Systems Thinking, is responsible for the intellectual ability to derive the purposes, and intellectual meaningfulness, distinctly from the experiences and test the variants in a stable relevant external environment, as has been done so far. Dramatically changing the relevant external environment requires the new intellectual capacity to systematically explain the role of such an environment in deriving purposes (meaningfulness). Therefore, a new way of learning, *Learning by asking the Purpose*, delivering the new cognitive achievement *Understanding Why*, is proposed.

Learning by asking the Purpose enables us to explain the role of the relevant external environment (superior systems) perspective, represents a qualitative transition from Knowledge—*Learning by doing* (in the DIKW hierarchy) and Holistic Understanding—*Learning by studying the experiences* (in the DIKHUW hierarchy) into Understanding of Wholeness, a new cognitive achievement designed in the DIKHUW hierarchy. Superior systems representing relevant external environments cannot be understood at the same level of cognitive abilities as the current level of knowledge, which is classified, for example, by the OECD Learning Compass into epistemic, procedural, disciplinary, and interdisciplinary (see Figure 5).

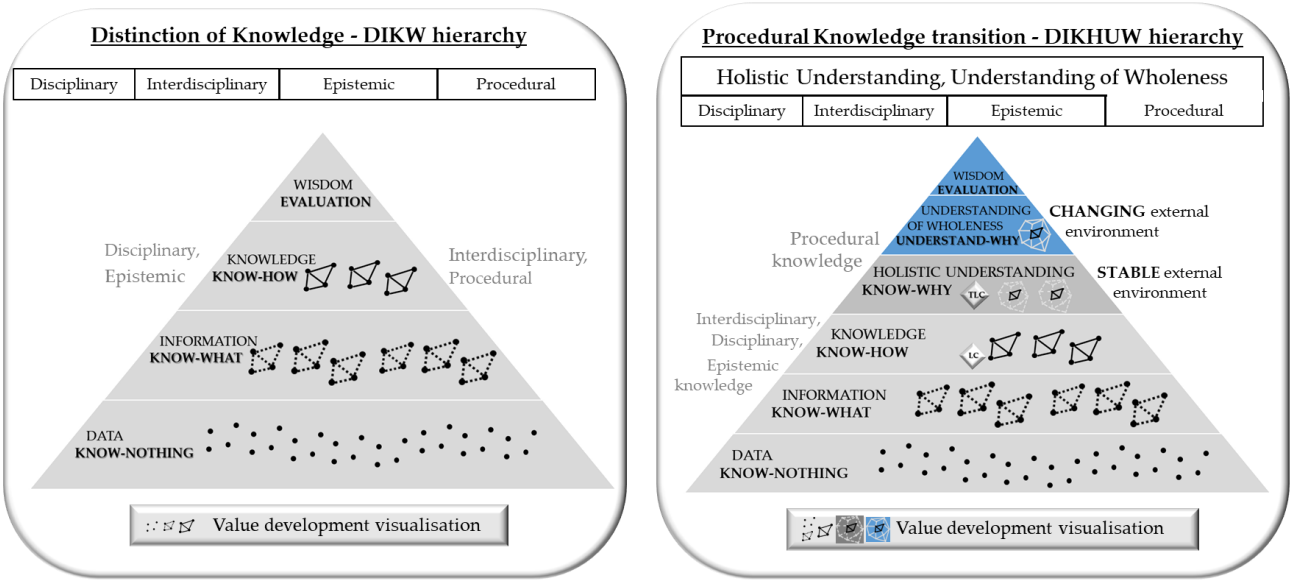

Figure 5. DIKW hierarchy transformation into DIKHUW hierarchy via procedural knowledge transition.

Procedural knowledge is the understanding of how something is done: the series of steps or actions taken to accomplish a goal. Procedural knowledge involves frameworks, such as systems thinking and design thinking; it can help students develop thought patterns and structured processes that can enable them to identify and solve problems [50].

The definition of procedural knowledge corresponds to the RST approach in systems thinking (see Section 3.1) that treats the systems by recognizing the necessity of interactions between a system's parts. At the same time, the RST approach does not consider the external environment sufficiently, as previously mentioned. Considering the external environment results from experiences in the long-term perspective that are unable to explain the short-term radical changes in the external environment. This kind of understanding favors an entire system with its interactions; therefore, it could be defined as Holistic Understanding, which is already applied as we speak. Nevertheless, the RST approach still underestimates the fundamental role of the external environment from a short-term changes perspective, e.g., for optimal performance (defined by purposeful limits) and the functioning of a particular system's parts and interactions; the same logic is applicable in organizing interrelated systems. Therefore, the actual definition of systems thinking cannot explain sufficiently the role of a surrounding environment in an intellectual way: this prevents an approach of wholeness. The result is that the RST approach is not able to set up optimal limits for the performance of the system's parts and interactions in the changing environment. Therefore, numerous tensions, dilemmas, and opposing goals of particular parts and interactions occur just because of a less ideal organization of the system's parts and interactions through the system's purpose, which is not systematically derived from the changing external environment. Learning by asking the Purpose involves the application of the innovative WST approach in systems thinking, which enables us to explain the role of the ever-changing surrounding environment which concretely determines the system's purpose through Wholeness Synthesis. The purpose defines the optimal limits for the system´s parts and interactions' performance by applying Wholeness Analysis. The new level of intellectual capacity in the DIKHUW hierarchy (see Figure 5), Understanding of Wholeness, precisely specifies the importance of the surrounding environment in explaining the role of the system´s purpose for its meaningful (sustainable) performance, and afterwards derives the optimal performance of the system´s parts and interactions (for a more detailed explanation, see Section 4.1).

Improved intellectual capacity enhances the capacity to learn, learning to learn, and therefore the new meta-competence development. Usually, meta-competence refers to the ability of learning to learn. The OECD Compass definition typically includes learning ability and coping with uncertainty in a world of disconnected systems. Moreover, it enables being capable to learn, adapt, anticipate, and create, rather than being able to demonstrate that one has an ability [50]. The OECD Learning Compass discusses Student Agency—when students are agents in their learning, they are more likely to have mastered how to learn, a skill they can use throughout their lives [51]. The meta-competence, respecting the world consisting of interconnected systems, applying the WST approach, enables the intellectual implementation of uncertainty resulting from a constantly changing external environment. The new meta-competence enables students to learn why and how to navigate by themselves through unfamiliar contexts with respect to the ever-changing external environment, which is the real future of the 21st century worldwide. The 21st EWA learning model facilitates students' acquisition of the new meta-competence, Learning by asking the Purpose, with the support of six didactic steps and two Learning by asking the Purpose postulates (see the following Section 4.4).

4.3. Learning Capacity Development, LC > TLC > ULC

Learning capacity (LC), a *habit of mind*, aims at engaging and sustaining the learning of people at all levels of the education system for the collective goals of student improvement in its broadest sense. It is a quality that enables people, individually and collectively, to

routinely learn from the world around them and apply that learning to new situations in order to continue to navigate the path to their goals in an ever-changing context [52].

From the 21st EWA Edu learning model perspective, learning capacity represents the purpose of the entire model. Therefore, learning itself needs to be understood not as a learning procedure with independent parts but as a learning system referring to the lifelong learning process with interrelated parts and interactions delivering concrete results and purposes. Furthermore, different purposes identified in changing relevant external environments determine the different performances of the learning model´s parts and interactions. Therefore, different purposes considering the societal development at the end of the 20th century and the beginning of the 21st century, highlighted by the development of three learning capacity levels, will be described.

Transformation or enhancement of the learner´s capacity (see Figure 6) represents the development of quality and depth of learning about not only the ever-changing surrounding reality but even the understanding of each learner's role in the volatile environment, including the understanding of the learning process as a learning system itself. Learning capacity here describes the relationship between the subject of learning (learners themselves) and the object of learning (the world around them, the learning process itself, including learners' learning about themselves in general). The more integrated the subject and object of the learning relation, the better the quality of learning. The learning subject could have data about the object, information about the object, knowledge about the object, Holistic Understanding of the object, Understanding of Wholeness about the object, or an evaluation of the object. The higher the intellectual level applied for learning (Data, Information, Knowledge, Holistic Understanding, Understanding of Wholeness, and Wisdom), the better the quality of learning and consideration of reality, the more relevant the external environment, and the higher the learners' awareness. In other words, it reduces the gap between theory learned mostly in the laboratory and practice represented by the actual relevant environment.

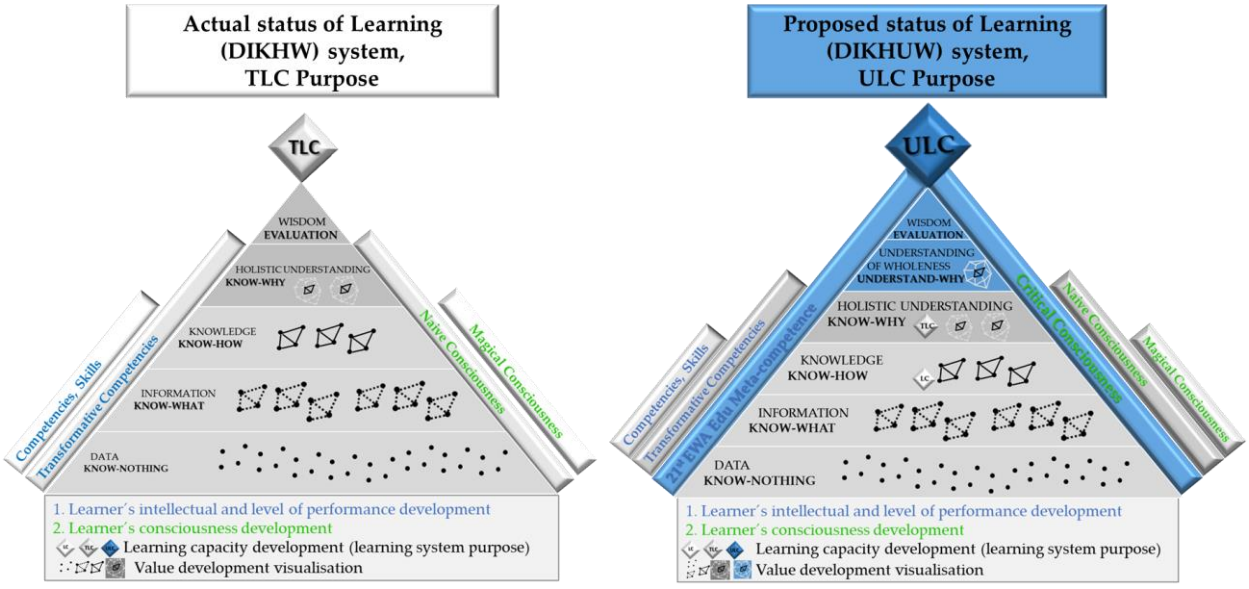

Figure 6. TLC > ULC learning capacity development.

Three levels of learning capacity, based on the requirements of different external environments—Learning Capacity, Transformative Learning Capacity, and Unifying Learning Capacity—are presented:

Learning Capacity (LC) is the original, reductionist approach (not a systems perspective) describes learning as memorizing isolated collections of facts and knowledge. Educational and learning procedures serve as a source of information and knowledge that

should be distributed to society. Understanding, values, and behaviors are accepted by authorities without direct interaction, with the transformation of data to information and information to knowledge. Closer integration of object and subject is not the main learning goal. Instead, frontal, teacher-centered transfer of information and knowledge is the main approach in teaching and learning. From the presented model perspective (see Figure 6), LC relates to reaching the Information, Knowledge, and Skills level, and what Paulo Freire calls magical consciousness during school learning procedures.

Transformative Learning Capacity (TLC) is the current status of education or the learning model´s purpose, generally identified by international and national learning and educational authorities, such as the OECD Learning Compass or the Czech Ministry of Education. To be prepared for the future, individuals must learn to think and act in a more integrated way. This means considering the manifold interconnections and interrelations between—at times, only superficially and in the short run—contradictory or incompatible ideas, logic, and positions. It implies nurturing the future in the short run [40]. The main improvement relies on a holistic, integrated perspective in learning and education. Therefore, it could be understood as the start of learning subject and object integration, resulting in a higher quality of learning and considering the surrounding reality in terms of past experiences. TLC represents a learning system´s purpose, supporting the development of knowledge, skills, competencies, Holistic Understanding, and consciousness. It comes with dramatic changes described by the increasingly volatile, uncertain, complex, and ambiguous current world. For example, three transformative competencies from the OECD Learning Compass could be mentioned. However, this approach still does not consider the real or actual surrounding reality and external environment to derive what is valuable to learn. The main goal is to maximize quantities that should be learned regarding information, knowledge, skills, and competencies. The learning process has not proven a systematic interaction between acquiring new information, knowledge, and Holistic Understanding and current learners' values and behaviors. In other words, new skills, knowledge, and competencies are acquired without sufficient (systematic) transformation into the learner´s understanding, values, and behaviors. From the 21st EWA Edu learning model perspective, TLC relates to reaching the level of Transformative Competencies, Holistic understanding, and what Paulo Freire calls naïve consciousness (see Figure 6, left).

Unifying Learning Capacity (ULC) represents the improved quality of learning and the new system´s purpose. ULC enables us to study the 21st century's dramatically changing surrounding world consisting of interrelated systems. It delivers meaningfulness through the new level of learning, Learning by asking the Purpose. ULC represents the quality of being able to transform previously understood reality (and the learning process itself) as the sum of separate parts or parts and interactions into an understanding of reality as an integrated whole, where the surrounding reality meaningfully drives the parts and interactions.

Such a learning process itself consists of interrelated systems. It creates wholeness organized by purposes, which could be considered a unifying principle of purposefulness or meaningfulness.

Learning by asking about the Purpose level of learning more deeply integrates the relationship between the subject and the object, i.e., the surrounding reality, consisting of interrelated systems or wholes. At the same time, applying the purpose of the system makes it possible to return learning from laboratory conditions (by eliminating the reality of a changing external environment) to learning in real conditions (real life). Students can recognize the importance and value of learned information, knowledge, skills, competencies, and understanding by identifying purposeful limits coming from reality. Such an approach brings theory and practice closer together. Suppose learners see the practical value of what they have learned. In that case, they are willing to internally transform their behavior and values without needing the external authority of past experiences as they have up to now. Rather than isolated knowledge and understanding of the past in laboratory conditions, Understanding of Wholeness systematically interconnects the intellectual knowledge level

with relevant reality and the external environment. Such an approach could be further considered as the vertical application of the perspective of wholeness in intellectual integration during the entire process of learning, studying surrounding reality, or the learning process itself. It increases the quality of learning by closer integration of the former isolated knowledge intellectual level or Holistic Understanding intellectual level with relevant or actual reality. ULC explains not only the transformation of data to information, information to knowledge, and knowledge to Holistic Understanding but extends the explanation to understand the transformation to the Understanding of Wholeness and Wisdom levels of the proposed hierarchy.

When learners truly learn from relevant reality, they are willing to change their behavior, incorporating new learning into their values and behaviors, making this behavior long term and sustainable. It empowers the learners' internal motivation to transform learned information, knowledge, and understanding into real and long-term changes in behavior and values as part of lifelong learning. The didactical six-step path proposed and applied together with the two Learning by asking the Purpose postulates enhances learning capacity. Furthermore, it engages and sustains learners learning from the world and the learning process. The steps described enhance learners´ understanding of emancipation and give the subject of the learning process methodical instructions on how to achieve it. The integrated system of didactic tools used in the 21st EWA Edu learning model, such as cooperation, consensus, conflict resolution, constructive feedback, etc., help learners to understand and see the purpose of lifelong learning. The authors emphasize that the whole process has tangible results. Since learners understand the wholeness approach, they can employ critical consciousness systematically and enhance their learning capacity. Therefore, from the 21st EWA Edu learning model perspective, ULC presents a new quality of learning—Learning by asking about the Purpose, a new level of cognitive achievement—Understanding of Wholeness, and the ability to reach deeper awareness—critical consciousness.

Wisdom as the Evaluative Level of DIKHUW Hierarchy

Learning capacity is a quality that enables people to learn from the world around them and apply that learning to new situations. In other words, it yields the ability for them to learn to navigate by themselves, without the help of authorities, parents, teachers, mainstream society, etc., which requires excessive pressure on each learner to do so. Enhancing learning capacity enables the exploration of the learner´s identity containing the development of understanding of thde learner´s place in the world. In addition, such a capacity has the potential to connect people to their communities and the environment.

Therefore, the learner´s identity and values need to be cultivated and liberated from traditional, formative, banking, or teacher-centered education, ensuring only acceptance of attitudes and values previously applied or derived from authorities. The OECD Learning Compass applies transformation and raising of consciousness to transform attitudes and values through the interdependent, holistic integration of knowledge and skills, creating transformative competencies [53]. Such a purpose could be considered as Transformative Learning Capacity (TLC), containing critical evaluation, raising consciousness to the naïve consciousness level, and transforming previously accepted attitudes and values. All these should navigate to reach individual and societal well-being as defined by the OECD Learning Compass. Nevertheless, the OECD Learning Compass has not considered the deeper integration between the subject and object of learning by considering the relevant external environment. The proposed learning capacity, empowered by six didactic steps and two postulates, supports learners by creating so-called scaffolding. It enables learners to achieve understanding and possible new values and attitudes during the learning process while consciously and systematically considering systematic changes in the global external environment.

ULC, the proposed purpose of the learning model, represents the ability to cultivate attitudes and values. In addition, it enables navigating learners' efforts, actions, and

judgments to achieve specific goals and decisions in all areas of public and private life, often drawing on cultural and societal traditions while addressing global challenges.

4.4. Six Didactic Steps and Two Learning by Asking the Purpose Postulates

The 21st EWA Edu model, as a didactic and philosophical concept, has been largely influenced by the ATPB learning approach and Systems Thinking in Wholeness, developed by the authors. While 21st EWA Edu learning is an organic model reflecting the needs of the learners, teachers, and content, the authors developed the six steps and two Learning by asking the Purpose postulates of the strategy to help participants to transfer the proposed learning model into everyday classroom practice. It is important to notice that the six-step didactic scaffolding is a learning loop. Therefore, it repeats as needed. Each proposed step consists of already known and widely applied learning tools and approaches (flipped classroom, silent brainstorming, elevator pitch, talking stick, etc.). However, they are purposefully crafted into a systematic, didactic approach. This innovative systematic learning approach enhances learning capacity. In addition, in each learning loop, Learning by asking the Purpose should be included as an introduction to the larger context of the studied reality, stressing the purpose of the educational process (see Figure 7).

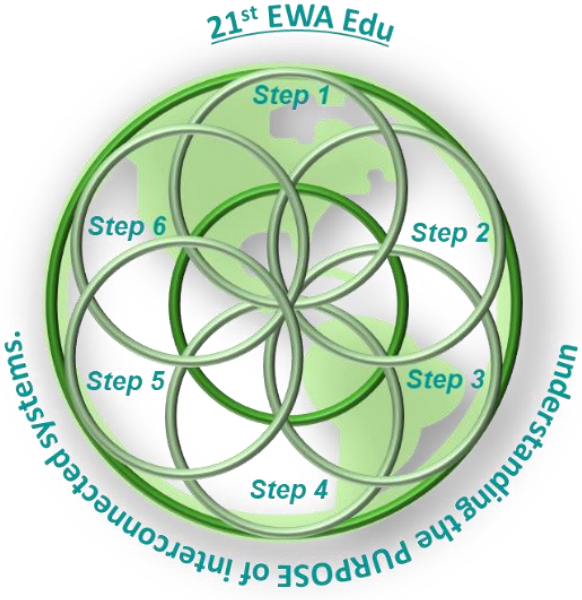

Figure 7. Six didactic steps and two Learning by asking the Purpose postulates.

Finally, the model is often used during project-based learning, where learners gain knowledge by working to investigate and respond to real authentic problems, engaging with complex situations and challenges for an extended period, often using trans- or interdisciplinary approaches. The focus is on learning capacity enhancement to understand the multiple aspects of any task, providing space for a plurality of solutions and innovative approaches.

Systems thinking, specifically its wholeness version, is a way of thinking systematically, considering the importance of larger systems representing respective external environments. In Figure 7, the smaller dark green circle inside the six steps and the larger dark green circle outside the six steps represent the performance of studied systems. It presents the ability to integrate and unify the subject and object of learning by applying Unifying Learning Capacity, enabling the understanding of why the quality of wholeness comes from surrounding reality and how it could be implemented into the everyday learning process to improve learning capacity. Therefore, two important assumptions are introduced:

(A) The proposed six steps create an environment where each learner can apply Learning by asking the Purpose individually and then apply and test it while working in

small teams and in front of the whole classroom. The purpose is the most qualitatively important part of any system, in addition to system parts and interactions. It is responsible for the optimal performance of the studied system's parts and interactions. Therefore, the system is seen and considered as a whole. At the same time, the system's purpose characteristics come from the relevant external environment, responsible for setting the purposefulness and the purposeful limits. The purpose perspective considers both the internal system's functionality and the studied system's functionality within its real external environment. The internal functionality of the separate systems proves the system is logical because it could work independently. It represents the knowledge level of intellectual capacity.

On the other hand, reality creates external conditions where the studied system must prove its ability to function in the context. The explanation of adaptability, the ability to function in a changing environment, requires another level of intellect that can systematically consider the influence of reality on the functionality of the studied system as a whole. That is exactly the role of Learning by asking about Purpose, delivering the proposed intellectual capacity—Understanding of Wholeness. There is a difference between the logical mind describing the systems' function and the purposeful mind explaining the system's functionality concerning the conditions of external reality. Therefore, rather than just a logical mind, a purposeful mind considering reality applies to the real life of the 21st century and intrinsically motivates students to learn.

If reality consists of interconnected systems, the Understanding of Wholeness, considering the requirements of the relevant external environment and explaining the essential logic of the meaningful organization of these systems, is needed. Learning by asking about the Purpose consists of two steps:

1. Any problem or challenge is defined by Wholeness Synthesis, identifying the meaningfulness from an external environment perspective.
2. Wholeness Analysis is responsible for applying meaningfulness to the organization of the studied system´s parts and interactions, which means setting the purposeful limits of its parts and interactions and therefore the entire system as a whole.

These two steps present and explain the meaningful organization of interrelated systems creating the current reality. Therefore, they are applied by all participants during the presented sprint (educational loop) consisting of six steps.

(B) Understanding the role of purpose in the learning process has two levels. Specifically, these are the purposes of the interconnected systems creating the actual reality (described in point (A)) and the purpose of the learning system itself (designated here as a learning hierarchy; see Figure 5). As outlined in the DIKHUW hierarchy, a learning system consists of specific parts and interactions that fulfill a purpose. Seeing the meaningfulness of what is being learned in actual reality (integration of theory and practice) increases students' intrinsic motivation to accept new knowledge, skills, competencies, and understanding and helps to change behavior and values without needing external authorities or previous experiences. In their part of the learning process, learning depends entirely on the individual learner and their willingness to discover and learn more about the curriculum and education. The teacher ends each session consisting of the six didactic steps by providing the context and supplementary questions to the presented problem, which enhances (reflects) the application of Learning by asking for Purpose. Therefore, more possible purposes of presented problems are introduced and discussed to recognize why the purpose is influenced by external reality. The ultimate goal of the 21st EWA Edu learning model is to inspire interest, curiosity, and meaningfulness in learning during lifelong learning. Here, the teacher acts as a guide (coach, ally), leaving students with provocative and inspiring questions at the end of the lesson rather than providing answers. Such an approach should support students in a purposeful way of thinking and learning and foster its application throughout lifelong learning.

The two Learning by asking the Purpose postulates represent the systematic approach to reaching the proposed intellectual capacity, Understanding of Wholeness (see Figure 4).

The ability to consider the external environment enhances the purposefulness of what is being learned, enabling the interconnection of newly acquired knowledge and understanding with learners' values. As stated before, learning involves a permanent change in behavior and the ability to behave differently. The proposed learning model presents the learning system, further describing the form of a more profound interconnection of human intellectual capacities and levels of consciousness. The purpose of the proposed learning system is defined as ULC to enable the development of learners' values and therefore a permanent change in learners' behavior based on an understanding of the surrounding reality as consisting of purposefully interrelated systems rather than a collection of facts. As designed by the DIKHUW hierarchy, ULC unifies the learners' intellectual capacity and awareness development. Deeper integration of the learning subject and object (surrounding reality as purposefully interrelated systems) is viable by applying six didactic steps. They are an accelerator of deeper integration of the learning subject and object, which takes place within the classroom. Up to now, there has been described, for example, the need for eight competencies in sustainability (Brundiers), which could be considered as the product of the previously described Transformative Learning Capacity (see Section 3.3). Nevertheless, the proposed Unifying Learning Capacity represents integrating the eight sustainability competencies into one meta-competence (see Section 3.2). The proposed meta-competence can be further understood as a meta-competence for sustainability, enhancing lifelong learning and development during the 21st century's challenging and unpredictable times.

Brundiers defines the following eight competencies for sustainability: systems thinking, futures thinking, values thinking, strategic thinking, interpersonal, integrated problem solving, implementation, and intrapersonal or self-awareness. Systems thinking, values thinking, strategic thinking, and performance are integrated into two postulates (see the previous section). Interpersonal, integrated problem-solving, and intrapersonal or self-awareness are encouraged in six didactic steps. All competencies, especially futures thinking, are supported by content (the object of education) chosen by educators. The following is a description of the six didactic steps that serve as accelerators to enhance the meta-competence of the Unifying Learning Capacity and the individual sustainability competencies.

4.4.1. Step 1 Individual Work (Flipped Classroom)

A flipped classroom is a type of blended learning and an instructional strategy where students are introduced to content at home and practice working on live problem solving during class time while actively engaging with concepts in the classroom with a mentor's guidance. This is the reverse of the more common practice of introducing new content at school, then assigning homework and projects to be completed by the students independently at home. We usually use LMS platforms such as Moodle, MS Teams, emails, and handouts. In addition, we pay attention to the individualization of teaching channels aimed at all learning styles, such as VARWK (visual, auditory, reading and writing, and kinesthetic). Therefore, individualization in the approach is addressed.

4.4.2. Step 2 in Class: Presentation of the Problem "Challenge"

At this point, the teacher sums up the knowledge gained from the self-study, relates the individual learning part to the larger context of the project or subject, explains why this learning unit is important, and shares all the information necessary. Then, the teacher poses a problem connected to the content of learning. Here, problem-based learning (PBL) is a framework for learning while solving real-world problems and challenges. The framework is collaborative and hands-on, promoting the asking of questions, discovering and solving challenges, and gaining in-depth knowledge while developing 21st-century skills and competencies such as the 4Cs (communication, collaboration, critical thinking, and creativity).

4.4.3. Step 3 Individual Work (Silent Brainstorming)

The involvement of all the participants is needed. Silent brainstorming is a technique for generating ideas while everyone remains quiet. This part is critical since it allows participants to think without distractions or influence from other group members and helps prevent problems with groupthink and social loafing common to traditional brainstorming sessions. In addition, it supports individual creativity and diversity of perspectives.

4.4.4. Step 4 Teamwork (Specific Tools)

In our case, team-based learning (TBL) is best reflected as an active learning and small-group instructional strategy that provides students with opportunities to apply conceptual knowledge through a sequence of activities that includes individual work, teamwork, and immediate feedback [54]. Here, several important tools need to be used to promote effective peer learning, these tools being: elevator speech, talking stick, consensus, and immediate constructive feedback. Usually, there are four to six members in each team.

Elevator Pitch: A good elevator pitch lasts no longer than a short elevator ride of 20 to 30 s, hence the name. In our case, the elevator pitches are encouraged to be interesting and memorable and address the transformative moments the speaker experienced while studying the material during the flipped classroom model, for example. Therefore, the pitches need to be succinct while conveying the most important information and creating interest in an idea or concept introduced in relation to the subject of the study. At the same time, using an elevator pitch enhances the competence of effective communication and critical thinking.

Talking Stick: This ensures equal opportunities for knowledge sharing within the group. The tool consists of a chosen object, for example, a bottle, a pen, keys, etc. One by one, each student holds this object and presents a short speech in the form of an elevator pitch. When the speaker completes their presentation and is happy with the content, they only pass the object to the next team member. In our case, all team members are encouraged to share their ideas first, and only then does the discussion and feedback start.

Discussion and Feedback: Constructive Feedback

Consensus: Once the team presents ideas without interruption, a quest to reach a consensus starts. During the learning process, a difference is stressed between the concept of compromise and consensus. Compromise is what Van Parijs calls "an agreement involving mutual concessions" [55]. Therefore, it inherently supposes the adaptation of an inferior position to the one initially preferred. On the other hand, the consensus is seen as an agreement that a particular opinion is the best choice to make [56]—here, no inferior position or mutual concessions are necessary.

With the talking stick tool, a team can quickly build trust. This same trust is necessary when the whole class works together. Creating a safe space where diverse students come together to learn is also important. The consensus process is an important pillar and provides a code of conduct since students express themselves and work differently. Cooperation, trust, open dialogue, and critical thinking are important for fostering respect, both inside and outside of the college classroom. In addition, all the tools mentioned above promote high-level skills and competencies.

Additionally, students using this technique in smaller groups of 4–5 members with the help of a "talking stick" tool tend to be more courageous and voice their opinions more freely. The system allows them to present their ideas in teams, allowing them space to clarify, rearrange, or assess new ideas (as necessary) before giving answers in front of a larger audience and the teacher. Moreover, students learn how to communicate, actively listen, and ultimately negotiate to reach a consensus on the best idea to present in an elevator pitch by one team member to the rest of the class and mentor. Hence, the learners must interact and engage with each other and the course materials in a particular way, leading to the negotiation and internalization of knowledge rather than memorizing information [57].

4.4.5. Step 5 Individual Team Presentations

Individual Team Presentations are again communicated in the form of an elevator pitch. Every round, roles within the team alternate. Therefore, everybody gets to develop and improve the skills and competencies reflected within the individual role. The presenter is a participant who presents the outcome which is, in the best-case scenario, a consensus that their team arrived at. A feedback giver is a person from a different team than the presenter who provides feedback on the elevator pitch delivered by the presenter. In our case, all feedback givers can provide feedback on the presenter´s speech. Providing effective and constructive feedback is essential in today's learning and working environment. Delivering constructive feedback and understanding how to accept it are vital. Feedback improves a learner's confidence, motivation to learn, and attainment. We try to focus on feedback that is fair; encourages growth; acknowledges the effort; is specific, accurate, and timely; and offers concrete examples. The Teamwork Reflector reflects on the teamwork process usually only once per session since the teaching block can have multiple rounds. Team reflection is important since it provides conscious reflection on the teamwork process in which team members bring closure to their learning experience and overall collaboration, and it is focused on ways to increase future learning and performance. In addition, it allows participants to establish a rapport with others within a group and reflect on their individual contributions. Even though each individual brings different strengths, to achieve a team's common goal, three important skills are developed here: self-awareness, tolerance, and trust. During the class discussion, skills and competencies such as the 4Cs, presentation skills, conflict resolution, working with diversity, and many others are developed, deepened, and exercised.

4.4.6. Step 6 Peer Learning—Learning from Other Teams

During peer learning, students learn with and from each other. In small teams in step 4, this learning technique promotes collaboration and teamwork to gain knowledge and answer a problem without the intervention of a teacher. Therefore, each learner is both a recipient and donor of knowledge, which creates learning ownership of the participants since they become more autonomous and responsible as they learn to teach one another. In step 6, after all the teams have presented in front of the whole class while hearing the solutions and outcomes of the small-group discussion, learners further deepen their knowledge by incorporating the best solutions and practices from other teams. Here, the role of the teacher is to coach and facilitate knowledge transfer.

It is important to note that the six didactic steps are accelerators for sustainable competencies. Interpersonal sustainability competencies are used in didactic steps 2, 3, 5, and 6 of the proposed 21st EWA Edu model. The six didactic steps of the model enhance both interpersonal and intrapersonal competencies, as well as what Brundiers [9] calls the futures thinking competency. Interpersonal sustainability competencies focus on truly engaging and motivating diverse stakeholders and working empathically with diverse ways of knowing and communicating among staff and citizens.

In addition, the intrapersonal or self-awareness competency is the ability to be aware of one's own emotions, desires, thoughts, behaviors, and personality, as well as to self-regulate, motivate, and continuously improve by drawing on competencies related to emotional intelligence and social and emotional learning. These skills are addressed in steps 1 and 4

Therefore, competencies such as communicating effectively, solving problems in a team, solving problems in practice, working with diversity in a team, cooperating, and applying active learning, which is also based on the OECD Competency Assessment for 2030, were selected to evaluate the usefulness of the six steps of the EWA Edu didactic models, while the remaining sustainability competencies were included in the two postulates of the 21st EWA Edu model.

4.5. Quantitative Data Collection and Analysis

This research adopted a statistical method of testing called the population proportion to explore the practical application of the 21st EWA Edu didactic model and its impact on skills and competencies learned by the participants of the courses, where the model has been applied.

Our research focused on bachelor's and master's students at a private business school in the Czech Republic. The 21st EWA Edu didactic model has been used in skills and competence-focused courses: Human Resources Management 1, Human Resources Management 2, Business Ethics, Intercultural Business Communication, Strategic Sustainability Management, and Sustainability Innovation Mindset. For three years (from fall 2019 to spring 2021), a total of 531 students of the university mentioned above volunteered to fill out a questionnaire at the beginning of the course and one at the end to map the impact of the model used. All the questionnaires are analyzed in the present article. The research sample included 52% male and 48% female respondents, 23% were master's-level students, and 77% were bachelor's students. The questionnaire was divided into three parts. The first part of the questionnaire consisted of personal data, the second part focused on assessing the impact of the studied model, and the third part mapped the students' recommendations for improvement and feedback via open-ended questions. Only the second part of the questionnaire focused on the impact of 21st EWA Edu as perceived by the participants regarding their skills and competencies. Improvements are discussed in this article.

Results

Table 1 presents the improved skills and competencies after applying the 21st EWA Edu didactic model in percentages. Competencies assessed were chosen based on the OECD skills assessment for 2030 and mapped students´ ability to: communicate effectively, solve problems in teams, solve problems in practice, work with diversity in a team, cooperate, and apply active learning.

Table 1. Assessment of competencies of the 21st EWA Edu model application.

531 Respondents Evaluating Selected Competencies	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Communicate effectively (before)	9%	63%	28%	0%	0%
Communicate effectively (21st EWA)	**62%**	**34%**	**5%**	**0%**	**0%**
Solve problems in team (before)	18%	51%	26%	5%	0%
Solve problems in team (21st EWA)	**48%**	**43%**	**8%**	**2%**	**0%**
Solve problems from praxis (before)	5%	51%	37%	8%	0%
Solve problems from praxis (21st EWA)	**65%**	**29%**	**5%**	**2%**	**0%**
Work with diversity in team (before)	5%	38%	45%	9%	3%
Work with diversity in team (21st EWA)	**37%**	**49%**	**12%**	**2%**	**0%**
Cooperate (before)	11%	31%	48%	9%	2%
Cooperate (21st EWA)	**52%**	**29%**	**15%**	**3%**	**0%**
Active learning (before)	5%	34%	43%	14%	5%
Active learning (21st EWA)	**48%**	**29%**	**17%**	**6%**	**0%**

From the table above, an increase in the proportion of students whose skills and competencies were improved is very clear.

Table 2 shows the z-score test for two population proportions, where $\pi 1 \ldots$ proportion of the population with the answer "agree" before 21st EWA Edu and $\pi 2 \ldots$ proportion of

the population with the answer "agree" after the 21st EWA Edu tested hypotheses were in general as follows: the proportion "after 21st EWA Edu" was not higher than the proportion "before 21st EWA Edu", and the proportion "after 21st EWA Edu" was higher than the proportion "before 21st EWA Edu". The significance level was chosen to be $\alpha = 0.01$.

Table 2. Assessment of competencies before and after the 21st EWA Edu didactic model application with final *p*-value.

531 Respondents Evaluating Selected Competencies	Strongly Agree or AGREE	Strongly Agree or Agree	*p*-Value
Communicate effectively (before)	384	72.3%	8.6×10^{-25}
Communicate effectively (21st EWA Edu)	**506**	**95.4%**	
Solve problems in team (before)	368	69.2%	8.6×10^{-19}
Solve problems in team (21st EWA Edu)	**482**	**90.8%**	
Solve problems from praxis (before)	294	55.4%	3.5×10^{-47}
Solve problems from praxis (21st EWA Edu)	**498**	**93.8%**	
Work with diversity in team (before)	229	43.1%	4.5×10^{-49}
Work with diversity in team (21st EWA Edu)	**457**	**86.2%**	
Cooperate (before)	221	41.5%	3.1×10^{-41}
Cooperate (21st EWA Edu)	**433**	**81.5%**	
Active learning (before)	204	38.5%	3.9×10^{-37}
Active learning (21st EWA Edu)	**408**	**76.9%**	

In Table 2, the *p*-value of all tested hypotheses is lower than the significant level. Consequently, Ho is rejected, and we can claim that the proportion of students with the answer "agree" is higher after 21st EWA Edu. Furthermore, as seen from all the above, the skills and competencies of the students tested increased significantly.

Asikainen and Tapani state in their article that transformative sustainability competences can develop only in encounters with authentic teaching and learning situations, and that for this to take place, the sustainability theme has to be present throughout the curriculum, and the inner enterprise of students has to be strengthened through the pedagogical choices of guiding, facilitating, and encouraging them to take risks as well as with new teaching methods and by partnering in the learning process by focusing on the different ways people learn [58]. This is exactly what 21st EWA Edu offers to the learners.

4.6. Unifying Learning Capacity (ULC)—Hypothesis Proposal

ULC enables us to enhance the depth of integration of the learning subject and object. Two examples and benefits of concrete application of the closer subject and object integration will be described, and a conclusion from a qualitative perspective will be formulated.

The presented learning model defines a new understanding worth considering in the ever-changing worldwide environment. It enables us to approach reality from the perspective of wholeness and to systematically consider the external environment to define meaningfulness, respecting the relevant external environment. This leads to quality in deriving meaningful limits of interrelated systems creating current reality.

1. *ULC's deeper understanding of efficiency and effectiveness distinction*

In the long run, not only what is logical works in reality, but particularly what is meaningful. In other words, not everything logical creates meaning, but everything that has meaning is implicitly logical. The meaningfulness of the observed reality includes not only its logical internal functionality (efficiency from an economic point of view) but also meaningfulness concerning and respecting the surrounding environment (effectiveness

from an economic point of view). A deeper integration of the learning subject and the object makes it possible to discover and name the difference between the concepts of efficiency and effectiveness. In a specific example of the difference mentioned above, the depth of learning subject and object integration—concretely, the difference between Knowledge, Holistic Understanding, and Understanding of Wholeness—can be explained as follows and shown in Figure 8. Applying the knowledge level of intellect, learning by doing, learners are studying the efficiency and effectiveness of a certain technology or device. There is no role in the external environment (for example, learning in laboratory conditions). Therefore, learners trying to maximize the value are motivated to maximize the performance of the technology or device. Holistic Understanding, represented by learning by studying experiences, enables one to see the role of the external environment, resulting from the experience of the past.

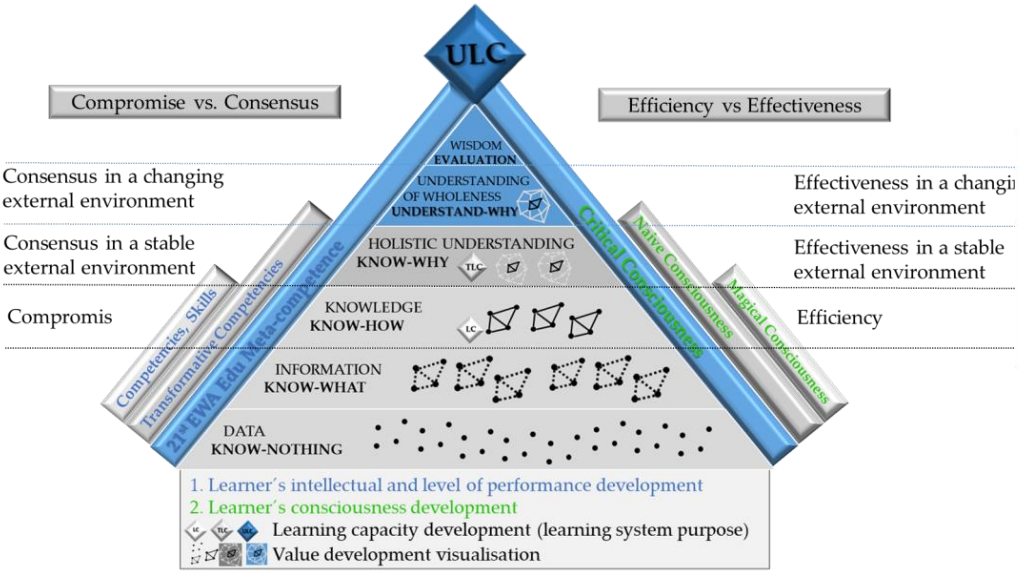

Figure 8. ULC perspective: the depth differences in understanding between efficiency, effectiveness and compromise, and consensus.

Nevertheless, the purpose of the studied technology device is still the same: to maximize performance. The intellectual *game changer* during the learning process is the possibility to identify different purposes. Learning by asking the Purpose enables us to visualize the role of the superior system and external environment in identifying different technology and device purposes. For example, rather than the purpose of maximized production as a heritage of the belief that the whole is the sum of its parts and interactions (and therefore a better whole is from better parts and interactions), the production purpose reflects the requirements of customers. Only then is the relevant external environment possible. Therefore, customer satisfaction and real needs coming from reality as identified by the external environment become the new, better purpose, in line with the superior system, making the whole process more relevant and sustainable. The new purpose then defines the optimal performance capabilities for the studied technology or device as a whole, which further derives the performance requirements for the parts and interactions. Therefore, the studied technology is not producing or delivering more or less than is required.

It is logical to maximize the performance of, for example, production equipment, but it does not create meaning to do so indefinitely. Therefore, in determining the optimal performance (meaningful limits), it is necessary to consider not only the performance of the production equipment itself (logical internal functionality to produce the product) but also the requirements of the relevant external environment for manufactured products (meaningfulness concerning the external environment). For example, suppose a production facility produces more or less (both quantitative and qualitative aspects of the product) than

the relevant external environment requires. In that case, performance always consumes more resources (addressing shortages or surpluses of the produced product); therefore, the resulting performance is not optimal or sustainable. Regarding the learning subject and object integration, the quality of learning and efficiency reflects knowing the object and how particular technology performs. In comparison, effectiveness reflects having an Understanding of Wholeness regarding an object which requires identifying what is valuable to produce from the perspective of the actual external environment and not only from experiences from the past, reflected in predictions, estimations, and forecasting as applied with Holistic Understanding, represented by learning by studying experiences (see Figure 8).

As a result, each student can detect the exact and precise phase: increasing efficiency ceases to be effective because it exceeds the boundaries defined by the external environment, reality [59]. The higher quality of learning (deeper integration of the learning subject and object) results in the development of the ability to produce and deliver the final products with much fewer resources.

2. *Compromise and consensus in balancing three sustainable dimensions*

In a world of interdependency, finding solutions to global challenges requires handling tensions, dilemmas, and trade-offs. The challenge is to reconcile multiple and often conflicting ideas or positions and recognize that there may be more than one solution or method in finding a solution. Striking a balance between competing demands rarely leads to a choice or even a single solution. To thrive in the future, learners must consider the interconnections and interrelations between seemingly contradictory or incompatible ideas, logic, and positions and consider the result of their actions from both short- and long-term perspectives [60]. For example, sustainable development is one possible answer to the tension among economic growth, environmental stewardship, and social cohesion, as it recognizes the complex and dynamic interplay among them instead of treating them as separate and unrelated, if not mutually exclusive, issues [61].

Trade-offs could characterize equilibrium or balance of sustainable dimensions in terms of reducing revenue to invest in better social conditions or reducing negative natural environmental impact. Numerous possibilities could be identified for balancing these three variables based on different stakeholders' perspectives. The trade-off is very well known in the example of fair-trade policies in procurement. Fair trade aims to increase the proportion of revenue to poor farmers by paying them higher prices for the same crops. Though this may be a noble sentiment, fair trade is mostly about redistribution rather than expanding the value created [62].

Conversely, the common purpose for all participants, and stakeholders in terms of shared value, can be identified by Learning by asking about the Purpose (assuring the understanding of the relevant external environment and stakeholders' requirements). The shared value approach is focused on improving growing techniques and/or strengthening the local cluster of supporting suppliers and other institutions. It is used to increase farmers' effectiveness (not only efficiency), increase product quality, reduce negative environmental impacts, and ensure suitable working conditions. In this case, the shared value approach leads to consensus and better conditions for all participants and stakeholders. The shared value represents the deeper integration of the subject and object of learning. The improved intellectual capacity enables us to identify a different purpose outside of the relevant external environment. Therefore, the option, leading to better conditions for all participants, represents a value increase in learning and integrating the subject with relevant reality.

Compromising the performance of the three dimensions with insufficient consideration of the relevant external environment prevents the possibility of all participants (stakeholders) from intellectually considering the actual relevant external environment and possibly developing different purposes. For example, suppose there is only one purpose for negotiations. All stakeholders are trying to minimize costs or maximize benefits, minimize natural environmental impacts, and maximize social benefits. In that case, better results for all participants are not possible. A maximization mindset in solving trade-offs, tensions,

dilemmas, and opposing goals prevents reaching better conditions for all participants, resulting from consensus. Learning by asking the Purpose enables the recognition of the importance of the relevant external environment in identifying various purposes potentially acceptable to all stakeholders—this corresponds to reaching a consensus rather than a compromise (see Figure 8). Sustainable systems—wholes—are created from parts and interactions which fit the purpose identified in the changing relevant environment, reality. Meaningfulness enables consensus from the relevant external environment and business stakeholders (customers, employees, shareholders, producers, suppliers, government, and society).

ULC assures closer integration of the learning subject and object, while purposeful limits (replacing the previous limitless approach) identification is possible. The proposed level of learning can guide learners in the ocean of data, information, and knowledge currently available, while transforming them into an Understanding of Wholeness and Wisdom to prevent the result of the saying by E.O. Wilson, "We all drown in the information and thirst for wisdom." Learning by asking the Purpose identifies possible purposes, which enables us to reach a consensus rather than compromise and derives meaningful limits in the organization of studied systems, the wholes. Different purposes identified in the relevant external environment (currently dramatically changing) are crucial for the distinction between efficiency and effectiveness and the ability to find consensus rather than compromise, for example, in the three sustainable dimensions presented in this section.

Kolb's theory of the experiential learning cycle, which combines inductive and deductive methods in researching new knowledge and understanding, is applied here. The inductive approach, which is based on reflective observations and abstract conceptualization, is utilized to formulate the hypothesis [63–65]. The presented applications of the proposed intellectual capacity—Understanding of Wholeness delivered by Learning by asking the Purpose—are examples of concrete experiences, i.e., reflective observation experienced via the authors' teaching, research, and solving practical projects. Based on practical experience, similar results are identified when studying the true differences between doing things right and doing the right things, standard of living and quality of life, invention and innovation, growth and development, etc. Based on the presented evidence, and with the support of abstract conceptualization, the following hypothesis is formulated: *ULC represents the capacity to identify different purposes from the relevant external environment of the studied wholes, which, in turn, are responsible for the identification of meaningful limits of studied wholes' parts and interactions and therefore the meaningful performance of the whole.*

The proposed hypothesis illustrates that the interdependence of the systems requires adaptability and consists of an intellectual awareness of wholeness and of the surrounding reality. It shows that maximization is not a synonym for effectiveness and that noble sentiment does not lead to a sustainable future. Effectiveness and sustainability are not just for consideration but for the employment of reality intellectually in terms of the relevant external environment at all decision-making levels.

5. Discussion

The presented results will be discussed, considering the real-life consequences of the example of social systems from economic education at the university level. Afterward, the international and national political approaches (the OECD Learning Compass and Czech educational strategy 2030) to learning innovation will be discussed, as well as holistic learning theory and Bloom's taxonomy.

In reality, small changes in parts are almost unperceivable, but they affect the whole and the superior system to which individuals must react and adapt. The problem is that many individuals do not see "the bigger picture." This happens mostly due to the educational system. How we teach, educate, and assess learners fails to produce sustainable changes and adaptations for individuals and systems (ecological, economic, political, social) to thrive. Moreover, this will happen despite chasing and potentially reaching a maximization of parts in the short term.

For the current world of interconnected social systems, including their sustainability, it is necessary to convey wholeness in an intellectual form. Many intuitive forms declare the attainment of wholeness. Anybody could intuitively imagine how the definition of holism, "the whole is more than the sum of its parts," is true. Holism and holistic approaches are aware of the higher quality of the whole and inform us that such a quality exists. As described earlier, the 21st-century world consists of interrelated systems. At the same time, the system is nothing more or less than the whole, which suggests the parallel that the actual world consists of interconnected wholes. The proposed intellectual capacity, representing the new cognitive achievement, Understanding of Wholeness, enables us to intellectually explain why the whole is more than the sum of its parts. It also explains why the relevant external environment is crucial for the sustainable performance of the studied wholes, systems, and their parts and interactions. According to the authors, it is necessary to emphasize the enhancement of the wholeness of intellectual capacity as such. The statement that the whole is the sum of the parts is logical. On the other hand, it is not meaningful. It is not meaningful because it describes a fact taken out of the context of reality. If we consider actual reality as interrelated systems, logical thinking based on the traditional concept of analysis and synthesis cannot intellectually explain the meaning of interconnectedness and meaningfulness or long-term sustainability. The proposed intellectual capacity is inspired by systems thinking in its wholeness and enables the emergence of connectedness and meaningfulness using the purpose of the studied system. Therefore, the statement that the whole is more than the mere sum of its parts and interactions can be defended intellectually (without considering spiritual or other areas of individual development). The traditional holistic approach centers on learning about everything that makes the system and how to act towards each part individually. This creates a dissonance in applying knowledge in a higher context (understanding the purpose). Thus, the learner cannot adapt to the changing system as they cannot see it as a whole nor see the crucial role of the external environment.

Another example of intuitive application in treating and understanding the holistic or wholeness perspective is the popular notion of "Thinking Outside the box," which everyone can intuitively imagine in some way. However, no exact description enables this skill of thinking outside the studied box as a whole. Here, we need to recognize the difference between the quantitative perspective, considering more parts and interactions and therefore the bigger system, and the qualitative perspective, understanding the purpose of the studied system. Therefore, it is something which is not visible but needs to be understood intellectually and described by its overall quality (the human body is not the sum of its parts and interactions but is represented by its purpose, which is life's ability to live). From this point of view, Learning by asking the Purpose could be considered as a systemic way that enables thinking outside the box, concretely learning to see the different purposes of the box, and therefore determining the meaningfulness (meaningful limits) of the "Box" in a world of interconnected systems. A new cognitive achievement, an Understanding of Wholeness, should be applied in order to develop learners' intellects. It plays a fundamental role in connecting all intellectual levels described in this article. In addition, it enhances the information and knowledge level of the intellect to the next, more valuable one. Concretely, it rises to the levels of understanding and wisdom. This act leads to a more sustainable future by activating lifelong learners, representing society's basic building blocks. Thus, it is precisely what learners need to survive the turbulent conditions of the future.

ULC enables us to identify different purposes—instead of considering the whole as the sum of its parts and maximizing its performance, regarding the whole as more than the sum of its parts is possible. For example, companies following meaningful customer satisfaction can deliver a similar quantity and quality of their customers' products using almost half of the total resources. Furthermore, companies can define the meaningful performance of parts and interactions instead of maximal/minimal ones (see the difference between efficiency and effectiveness in the Results section of the article). Here, we can see

a concrete example of replacing a maximization mindset with a purposeful mindset. The process-oriented transition from businesses organized as separated silos [66] to unified wholes able to adaptively react to external environment changes could be delivered by Learning by asking the Purpose [59]. Therefore, the systematic consideration of the relevant external environment assures meaningfulness, and optimal limits for all the interconnected departments ensure the purchase, production, and delivery of exactly what is required, no more, no less. A similar logic to the company's social systems can be seen and successfully applied in other social systems, e.g., healthcare, governments, the international community, etc.

A concrete example results from the actual design of curricula in business universities. The worldwide business environment is created by interconnected social systems as well. Therefore, learners should be aware of the fundamental logic of the meaningful organization of these systems. Learners are supposed to study businesses as the sum of their parts. In this case, departments such as Marketing, Human Resources, Distribution, Production, Purchasing, Finance, Research, Development, etc., are trying to maximize their performance with the latest, most sophisticated technologies, functions, and approaches in their fields. All that effort and organization of parts and interactions (a business is here considered a social system) has a purpose resulting from understanding the whole as the sum of its parts and interactions, motivating cost minimization or profit maximization. The result of the learning process designed by the DIKW or DIKHW hierarchy results in a certain quality of knowledge and understanding which any learner, a subject at an economics university, should acquire about the studied object, a business. By comparison, the 21st EWA Edu learning model offers a higher cognitive achievement, Understanding of Wholeness, upgrading the DIKHW hierarchy into the DIKHUW hierarchy (see Figure 6). The subject could improve their cognitive achievement regarding the studied object by applying Learning by asking the Purpose via the same approach mentioned in the example of the technical system called the house in the Introduction section.

The new approaches to learning and education have already been discussed, both at the country and international levels. For example, in the Czech Republic, there is a national approach called Strategy for the Education Policy of the Czech Republic up to 2030+ [67]. On an international level, it is the OECD Learning Framework 2030 that was also chosen and cited in this article. Both strategies focus on holistic learners' intellectual development, improving their potential in a dynamically changing world for the benefit of their development, the well-being of others, and society as a whole [67]. Both national and international approaches are systematic, solving the entire system, not only the particular parts and interactions, and proposing the transition to developing skills and competencies. However, from the bigger picture perspective, these strategies present changes in the learning model parts and interactions, creating purpose defined by the holistic level of understanding (presented in the DIKHW hierarchy; see Figure 6). Even though they are both systematic approaches to improving education and learning, they are still trying to create the best possible parts and interactions of the educational system without considering and applying different purposes to derive meaningful performance and limits of these parts and interactions. Therefore, they cannot explain the wholeness perspective intellectually and possibly deliver the learning value resulting from understanding the reality of a world consisting of interrelated systems.

The discussion continues by comparing the proposed learning model results with holistic learning. Cognition and learning in the form of the development of intellectual capacity have been influenced by reductionism and specialization for many centuries (see, for example, the growth in the number of scientific fields). From the holistic perspective, the intellect is perceived as a divisive element, as it does not consider emotions, spirituality, etc. Conversely, the authors of this article pay increased attention to this ability. We emphasize the vertical direction and depth perspective of wholeness and view the intellect as the unifying element of knowledge, as it has the potential to bridge and fully explain the actual

reality consisting of interrelated systems affected by a dramatically changing worldwide environment.

Holistic learning is focused on the education of children and young adults. It is focused on an intuitive understanding of the interconnectedness and wholeness supported not only by intellectual aspects of human development but also by physical, social, moral, aesthetic, creative, and spiritual aspects [39]. However, it lacks an explanation of how the interconnectivity is organized. It is focused on meaningfulness without specifying the source of meaningfulness. It considers an entire person from a horizontal perspective compared with a vertical intellectual perspective of proposed cognitive achievement, i.e., an Understanding of Wholeness, delivered by the proposed level of learning, and Learning by asking the Purpose. There was a tendency in education to forget the larger vision of wholeness and connectivity—holistic education calls on us to restore that vision.Models of the past proposed a horizontal perspective of wholeness, while Understanding Wholeness as a cognitive achievement represents more of a vertical perspective, which means understanding and explaining wholeness intellectually..

Bloom's taxonomy is a well-known classification of levels of intellectual behavior which are important in learning. It is an example of a systematic approach to cognitive achievements, providing their description and classification. It is used to specify learning objectives in general [67]. For discussion purposes, the revised version of Bloom's taxonomy is considered. The taxonomy consists of six levels of cognitive achievement (Remember (formerly Knowledge), Comprehension, Application, Analysis, Evaluation, and Creation (formerly Synthesis)). The revised version recognizes the need for meta-competence, specifically meta-cognitive knowledge considering even one's awareness of cognition.

Furthermore, it presents more useful and comprehensive additions to how the taxonomy intersects and acts upon different types and levels of knowledge. It recognizes Creation as a new and highest level of intellectual behavior. It builds on the previous synthesis and states that creativity requires users to put parts together in a new way or synthesize parts into something new and different, creating a new form or product. This process is considered the most difficult mental function in the revised taxonomy [64]. Creation, the highest level of intellectual behavior, supports a maximization mindset. It is responsible for breaking down a potential product or service into parts and interactions with the motivation to improve the new product or service with better parts and interactions that are faster, bigger, more colorful, etc., and improve the product or service as a whole. The new intellectual capacity suggests rather the opposite process. One starts with the purpose of the product or service, including the meaningfulness with respect to the external environment, and designs better parts and interactions of the system based on that purpose. Reductionism or reductionist systems thinking is responsible for the obsession with quantitative growth rather than qualitative development enabled by a new intellectual capacity considering wholeness intellectually. Regarding the development of learning capacity, Bloom's taxonomy discusses the six levels of cognitive achievement separately, which means without the intention of improving the integration of the learning subject and object or improving the qualitative rather than quantitative perspective of the learning process. Still, the main intention here is to sort and classify possible cognitive achievements. In terms of learning capacity development, the revised version of Bloom's taxonomy corresponds more to the Transformative Learning Capacity, defined in Section 3.

The same logic applies to transformative competencies, as proposed by the OECD, and sustainable competencies, as defined by Brundiers [9]. They are all viewed as a separate set of competencies that must be fostered to achieve a more sustainable and equitable future. However, the authors of this article argue that starting any learning process with a new intellectual capacity of Understanding of Wholeness would innately incorporate the purposefulness and meaningfulness of any learning process, ensuring true sustainability. This process needs to be based on a consideration of the external environment that innately has its limits. A balance can only be achieved by substituting the maximization mindset with the mindset driven by the purpose. Balancing the needs of individuals and the external

environment in the broadest sense is the only way that any learning process will reflect the needs of today and the future. Only when the purpose in the most holistic sense is taken into consideration in any human action, and learning in particular, can sustainability be achieved.

The next steps in 21st EWA Edu application will be to adjust the didactic model to the needs of secondary education and the middle and high school systems. There has already been a pilot project with the ŠKODA AUTO vocational high school that has implemented the didactic model in question; however, the train-the-trainer programs will be needed to further promote the model. First, however, we have to be aware of the upcoming risks. New evaluation systems replacing the current one will be needed as well as adjustments regarding time schedules in schools considering the time dedicated to learning blocks and implementations of interdisciplinary project learning instead of individual subjects. The risk is that the current education system in the Czech Republic is not ready to accommodate the 21st EWA Edu innovative approach due to the prevailing maximization mindset and the lack of purposeful limits, such as the amount of information to be learned.

6. Conclusions

The challenges of the 21st century are unprecedented. Over the past decade, the world has faced issues that occur locally but have an impact globally due to the interconnectivity of the world—one stranded ship in Suez affected global trade, etc. Environmental, economic, societal, biological, technological, and political issues could have a common cause. This article discusses the possible common cause of exceeding natural limits by maximizing a logical mindset. The maximization mindset, which means producing, consuming, and enjoying as much as possible, led to an unprecedented global increase in living standards. Technological development enabled globalization, which caused natural external barriers to be removed. The current worldwide crisis confirmed that removing those natural barriers can cause irreparable worldwide damage. Technological, demographic, social, environmental, economic, and political shifts are forcing us to redefine our educational and learning system. In the current environment, it is even more important that the educational system builds on learners' cognitive abilities and awareness to take ownership of and responsibility for what is happening. This can be achieved by developing a new cognitive achievement, an Understanding of Wholeness. The new capacity innately enables each learner to be able to identify and put into practice meaningful limits without external authority—especially in a world where learners are unable to rely on experiences of previous generations since this is the unprecedented complex reality of today's world. Unfortunately, even best practices from the past are less relevant and useful. Therefore, the authors stress the individual learner's intellectual capacity and responsibility. To do so, Learning by asking the Purpose is applied through six didactic steps and two postulates. It enables practical short-term solutions in the form of individual definitions of meaningful limits and long-term transformation of each learner's awareness and value scale.

The 21st EWA Edu learning model focuses not only on the quantity of information, knowledge, skills, and competencies transferred but mostly on the quality and depth of learning and education, respecting the actual surrounding reality. This relates to student learning capacity development and awareness, enabling and supporting the transformation of newly acquired cognitive achievements into each individual learner's values. The definition of learning is a permanent change in behavior resulting from practice or other experiences. In other words, learning could be considered as interactions or relations between the subject and object of learning. The presented learning model describes a systematic philosophical and didactic path, enabling a deeper understanding of the interaction between the subject and object of learning by a deeper consideration of the external environment. The proposed model, inspired by the hierarchy of information sciences, and empowered by new levels of intellectual capacity, states that the higher the level of intellectual and conscious development, the deeper the quality of learning delivered by improved learning capacity. In other words, the more integrated the relation between the

subject and the object of learning, the higher the quality of the learning outcomes. Different external environments define different purposes. Learning by asking the Purpose helps us identify different purposes intellectually, which in turn are responsible for identifying purposeful limits and meaningfulness in a dramatically changing external environment. Such an approach allows learners to critically and systematically identify truly sustainable values, which liberates them from the authorities or previous experiences that used to help them navigate the relatively stable external environment of the past.

The current state of learning about the object of learning, in general, is extracting the object of learning from reality via analysis and studying it without the environment, as is the case, for example, of learning in the laboratory. Therefore, learning should be brought back to reality, which means that the subject of learning rationally understands the essential role of the external environment during learning about the object of learning. Such an approach unifies the capacity of learning with the surrounding reality. It has not yet been rationally understood, i.e., it has not yet been intellectually and systematically explained. The potential fusion of the subject and object of learning represents a sustainable lifelong learning goal: learning to live a meaningful life in harmony with the surrounding reality. The proposed learning model recognizes the importance of the relationship between learners' awareness and the role of purpose in the world of interconnected systems. Practically, reality-oriented learning, considering the role of the external environment, liberates learners from authorities and experiences relevant to the past and enables them to develop and utilize their potential even in the challenging 21st-century environment.

Paulo Freire understood that the two roles of education both have enormous power. Education either functions as an instrument of conformity used to facilitate the integration of the younger generation into the logic of the present system, or it becomes the practice of freedom, how men and women deal critically and creatively with reality and discover how to participate in the transformation of their world. These two roles were relevant to the relatively stable reality of the 20th century. However, the reality of the 21st century requires the third role of learning: education enabling learners to see the surrounding reality and the learning process as interrelated wholes and therefore to intellectually cope with such changes and disturbances. In addition, while considering surrounding reality, learners perceive themselves as a part of the environment. Therefore, they do not try to change or take advantage of the environment but rather meaningfully coexist as a part of a larger system. By setting purposeful limits, they thrive to achieve balance and, as a result, live a truly sustainable life. In other words, proposed learning models and philosophy encourage a non-anthropocentric approach. To do so, to be able to liberate themselves, learners must purposefully and critically examine the approaches, attitudes, and values of the past or previous generations. In other words, they stop the autopilot behavior embedded in all of us due to the repetition of learned patterns from previous generations and start a conscious process of making sense of the current problems using the tool of Learning by asking the Purpose. The proposed ULC achieves the third role of learning and education. Systems Thinking in Wholeness enables us to see the proposed learning capacity from a hierarchical perspective. The DIKHUW hierarchy, considered an integrated whole, consists of interrelated parts (intellectual, performance, and consciousness levels) interacting and delivering the Unifying Learning Capacity purpose. Purposeful consideration of the relevant external environment provides an understanding of studied phenomena in their context rather than as isolated facts. The same applies to the learning process itself, which further liberates learners' awareness, attitudes, and values, and enables real, long-term change in behavior, the purpose of learning, and education.

ULC integrates the learning subject and object, which supports replacing the previous limitless approach with a purposeful limits approach applicable during learning about the external environment and the learning process itself. Rather than a logical mind, the meaningful mind applicable to real and sustainable 21st-century life shapes learners' intrinsic motivation for lifelong learning and development. A simple shift in values, from part to whole, which is determined by the external environment, and a consistent view

of the bigger picture, the purpose, and how each aspect taught or learned fits it perfectly, enables a more sustainable education system in every classroom and for every learner. The 21st EWA Edu learning model enhances learning capacity in unpredictable times with the understanding and wisdom that springs from genuine curiosity and ultimately promotes lifelong learning.

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