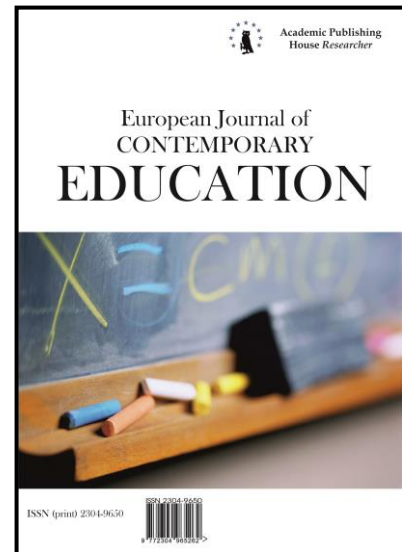




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Co-creation of Learning: A Concept Analysis

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Abstract

This paper presents the results of the concept analysis of co-creation of learning and discusses how this concept is applied in the educational context. The concept co-creation of learning is a border concept, which is increasingly used in diverse areas, however, there is a lack of a current theory regarding the subject in the existing educational literature. The objective of the concept analysis was to make a dissection of the concept of co-creation of learning into simpler elements to promote clarity while providing mutual understanding within education by giving the particular concept a specific meaning. The concept analysis reflects the situation in contemporary education when learning becomes a co-creative practice and is based on partnership and collaboration, changing roles of teachers and students; it takes place at different stages of curriculum implementation. The article discussed the defined key attributes of the concept co-creation of learning, which are linked to collaborative process, collaborative output, transformative interaction and teacher position, learner's agency, new space for learning, self-authorship, learning community and partnership in learning, metacognitive practices and value co-creation. The research revealed that co-creation of learning can be successfully enhanced and supported by relevant and creative pedagogical strategies. They include generative dialogue, negotiation, collaborative work, participatory design model and others. Non-hierarchical relationships, flexible curriculum and scaffolding practices, formative assessment were identified as the antecedents for co-creation of learning to emerge while such factors as added value, increased learning ownership, better engagement in the learning process and learners' empowerment were identified as the consequences of co-creation of learning.

Keywords: co-creation, learner's agency, transformative practice, collaboration.

1. Introduction

Co-creation of learning in education has raised much attention in the last decade and was discussed through multiple perspectives including partnership (Bovill, 2015; Bovill et al., 2016),

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learning communities (Lubicz-Nawrocka, 2017), student-centred and person-centred learning (Mincu, 2012a; 2012b), personalised learning (Zmuda et al., 2015). All these approaches mainly discuss the problem of learning ownership, co-creation, learners' deeper engagement in the process and motivation. Several trends could be identified which explain these approaches and their roots. Students' voice and agency owe to the idea of democratisation processes in education and date back to Dewey (Bovill, 2019; Jensen, Krogh, 2017). Other approaches might be explained through market-oriented and education modernisation perspective (Hartley, 2008).

Not surprisingly that with the spread of ideas of the new public management, higher education was very much affected by marketisation trends. Less impact was observed in general education, however, the concept of students as "customers" has gained significant importance in nineties. The idea behind the concept was that customers were very often left behind the creation and development of the product or service, and their changed role from passive recipients to active co-creators playing an active role in developing and establishing values.

Current higher education literature which strongly positions students as active participants in and of their learning, underestimates the contribution of critical pedagogy which spoke of negotiated curricula and active role of learners from the point of transformative and democratisation processes in education (Bovill et al., 2016). Unfortunately, today, students' participation is somehow limited to their engagement, retention, creation of learning communities, development of employability skills etc. For this reason, the analysis of the co-creation concept in education is actualised today. It is important to un-shell meanings of the concept as it is used in various educational contexts and practices. The analysis of the concept will contribute to the understanding how co-creation in education transforms learners and teachers' pedagogical interaction, learning process and how it impacts curriculum in all its phases starting from development, implementation and finalising with the assessment.

The objective of the concept analysis was to make a dissection of the concept of co-creation of learning into simpler elements to promote clarity while providing mutual understanding within education by giving the particular concept a specific meaning.

2. Methodology

For the analysis of the co-creation of learning concept the methodology was based on the steps for concept analysis recommended by Walker and Avant (2005). Even though this method is widely used in nursing, it can be successfully applied in the analysis of concepts in social sciences. The initial phase was aimed at analysing and identifying the use of the concept in dictionaries, scientific literature, which allowed to move further and identify the determining attributes, finding antecedents and disclosing consequences. The method consists of eight consequential steps: (1) selecting a concept which will be analysed; (2) defining the objectives of analysis; (3) identifying meaning of the concept; (4) identifying the main attributes; (5) identifying and explaining a model case; (6) identifying and explaining alternative cases (borderline, related, and contrary cases); (7) identifying antecedents and consequences; (8) identifying empirical referents (Walker, Avant, 2005).

In order to identify the attributes of the concept, an extensive and in-depth literature analysis was conducted. The process of defining all uses of the co-creation concept included the review of different sources of literature, both theoretical and empirical. The theoretical sources included dictionaries, theoretical articles and literature review articles.

The search and selection of the relevant literature was conducted using EBSCO and Web of Science databases. The process consisted of several main steps. The initial step of the literature selection started from the basic search by setting the key word "co-creation" and adding the words such as „in the classroom“, „in education“ in order to limit the scope. Also, the settings included language (only articles published in English) and period (from 1999 till 2019) determination. In addition, the search was limited to full-text and Open Access sources. It should be noted that articles from the field of economics, management were not included for the initial analysis of the concept. The search was not limited by the geographical regions, specific publishing journals, age group or form of learning (traditional, online, blended) or type (formal, non-formal, informal). The primary search provided 623 (EBSCO) sources and 346 (Web of Science) sources (969 pieces of literature in total).

The second step included a careful abstract reading and application of inclusion/exclusion criteria (Table 1) in order to eliminate irrelevant pieces of literature. The articles or their abstracts

were studied and further were selected for deeper analysis, which dealt with the meaning and attributes of the concept. Many sources contained information about co-creation as a secondary, peripheral concept for analysis, thus, they were eliminated from the list. As a result, 89 (EBSCO) and 32 (Web of Sciences) pieces of literature were selected for the in-depth analysis. The criteria of inclusion and exclusion were both inspired by pragmatical and conceptual issues related to the current research. The criteria were based on the working definition of key word “co-creation”, and, thus, included several principles of literature selection.

Table 1. The inclusion and exclusion criteria for literature review

Criteria	Inclusion criteria	Exclusion criteria
Sources of information	<p>Include articles based on empirical findings or theoretical analysis.</p> <p>Articles published in the peer-reviewed, open access journals, full-text articles.</p> <p>Articles must be published in a period from 1999 to 2019.</p>	<p>Exclude sources published without peer-review, with no full-text available.</p> <p>Exclude articles published till 1999.</p>
Content	<p>Include studies where co-creation is regarded as a core subject.</p> <p>Include studies where co-creation is viewed in terms of education and classroom practice.</p> <p>Include studies where co-creation is being practiced by in-service school-level teachers and students at schools of different forms of property (private, public schools); practiced in higher education.</p>	<p>Exclude studies where co-creation in the classroom/education is regarded as a secondary concept.</p> <p>Exclude studies where co-creation is viewed in terms of organizational management.</p> <p>Exclude studies where co-creation is being practiced within business organizations, in relation to consumer behaviours.</p>
Type of Study	English, quantitative and qualitative studies, reviews	Conference abstracts, reports and editorials, commentaries

Outcomes	Applicability of the concept “co-creation” is a focus of the study	No evidence of the applicability of the concept “co-creation”, exclude studies with peripherally included business management. Exclude studies in cultural and creative industries.
Availability	Full-text accessible to the authors	Full-text non accessible to the authors

The final step included an in-depth reading in order to disclose the usage of „co-creation“, reveal defining attributes. The review was conducted by analysing the content and use of the concept, identifying recurring themes, their key components, and analysing how they relate to and interact with one another. Several articles were excluded after the in-depth reading as they did not meet the inclusion criteria. The final sample of the analysed data sources consisted of 41 (EBSCO) and 11 (Web of Science) journal articles (52 in total).

3. Results and discussion

Identifying meaning of the concept

Initially we analysed the meaning of the concept of co-creation as it is defined in dictionaries. The dictionaries (MacMillan, Meriam Webster, Collins online dictionaries) define the word “co-creation” as “a way of working together where people from different backgrounds are invited to jointly produce a product or service that will benefit all of them”, “when a company makes a product but you design or even finish the work; you are participating in an act of co-creation”, co create as a verb is explained as “to create (something) by working with one or more others, to create jointly”. Scientific literature also suggest several definitions of co-creation as a “collaborative, reciprocal process through which all participants have the opportunity to contribute equally, although not necessarily in the same ways, to curricular or pedagogical conceptualization, decision making, implementation, investigation, or analysis” (Cook-Sather et al. 2014: 6-7). In co-creation both the ‘co’ and the ‘creation’ are significant. The ‘co’ signals that the process is social and the ‘creation’, that something new appears because of the process. The presented definitions imply that the concept has several important attributes such as “creating, working jointly (collaborative learning)”, “creating something new together”, “getting value/mutual benefit in collaborative process (value co-creation)”, “to contribute equally (partnership)”. These attributes have been further included in the concept analysis of the concept “co-creation of learning”.

Identifying the main attributes

After the extensive analysis of scientific literature, the following attributes of the co-creation concept have been identified:

- 1) Collaborative process;
- 2) Collaborative output;
- 3) Transformative interaction and teacher position;
- 4) Learner’s agency;
- 5) New space for learning;
- 6) Self-authorship;
- 7) Learning community and partnership in learning;
- 8) Metacognitive practices;
- 9) Value co-creation.

Collaborative process: dialogue, negotiation and research. The literature analysis suggests that co-creation process, according to Bovill et al. (2016) is a joint and collaborative work of teachers and students in developing curriculum components and/or pedagogical approaches.

It should be differentiated co-creative practices in and of curriculum. Co-creation in curriculum is the most typical area where collaborative work of students and teachers happens. Dunne and Zandrstra (2011) note that co-creation of learning is implemented through a challenging engagement process and point out that it requires learners to demonstrate significant intellectual and intense emotional investment in the classroom. Co-creation in curriculum, thus, can be achieved through the mutual partnership, which following Bovill and Bulley (2011), transforms in different phases and levels of interaction. The level of interaction ranges from a fully teacher led curriculum which has the least level of interaction to a curriculum where students are gaining more roles and influence on the final model, where students are in total control of curriculum. Co-creation in curriculum, thus, requires teachers be aware of possible models and thus different level of interaction.

Co-creation in curriculum is very much related to pedagogical approaches. Scharmer (2007), Hassan (2014) indicate that pedagogical approaches or the methods should engage students as stakeholders of the learning process in a collective learning which requires shared commitment. Variety of methods such as dialogue, field studies, interviews, narratives, technologies enhanced methods (flipped class, digital story telling) are most frequently used and still underexplored (Scharmer, 2007; Hassan, 2014; Al-Jeraisy et al., 2015; Jensen, Krogh, 2017; Richter, Courage, 2017; Stoten et al., 2018). Bovill et al. (2013) indicate that co-creation usually involves negotiations and negotiated decision making. This process, however, is under-researched and negotiation approaches are not very clear.

Summing up, co-creation in curricular indicates a processual aspect of co-creation which uncovers new challenges for students and teachers, it may have different models of interaction and should be facilitated by the involved stakeholders (students or teachers).

Collaborative output. Co-created curricula by some researchers is viewed from the perspective of the ecology of participation (Bovill et al., 2019). Analysis of scientific literature suggests that co-creation as an outcome could be new knowledge (co-created knowledge), innovation or co-created curriculum through the partnership of the teacher and students.

One of the interesting definitions of co-creation as an outcome of communication and teacher position is proposed by Iversen and Pedersen (2017). They refer to the writings of Scharmer (2007) who speaks about the relationships and communication where different modes of attention determine the quality of communication, which consequently, determines the outcome of the situation. He identifies the positions of four different sources of attention from which social action can emerge: “The I-in-me” (monologue, frontal teaching), “The I-in-it” (discussion, critical scrutiny), “The I-in-you (emphatic listening, dialogue, and reflective inquiry) and “The I-in-now” (generative dialogue). As an outcome through generative dialogue a new knowledge is co-created.

Other researchers see co-creation as a phase in the knowledge appropriation model (Leoste et al., 2019). This model explains knowledge creation practices that lead to the transformation and maturation of knowledge through particular steps: appropriation of an idea; sharing the idea; co-creating solution/knowledge; formalization when the idea is transformed so that it can be shared more widely; standardization when a norm or guideline is developed that encourages wider adoption and application of the solution within the relevant context or organisation.

Researchers (Bovill, 2017, 2019; Bovill et al., 2016; Cook-Sather et al., 2014; Murphy, Nixon, 2017; Lubicz-Nawrocka, Simoni, 2018) link co-creation with the students and teachers’ partnerships in collaboratively co-created curriculum. Co-creation of the curriculum, when students and university teachers and staff collaborate in designing, developing or updating a study programme, is more complicated than co-creation in the curriculum, which implies collaborative learning, partnership and new roles during the course (Bovill et al., 2016).

Transformative interaction and teacher position. Already Rogers and Freiberg (1994) argued that the teacher became a co-learner in the process. Critical pedagogy offered valuable insights about the democratisation processes in the school where the teacher accepts learners as knowledgeable and critical partners in learning.

Co-creation as outlined by McWilliam (2008) may have three relational positions in teaching: sage on the stage, guide on the side and meddler in the middle. The most typical role teachers used to assume is the first one – sage on the stage, whereas the shift to the relational position to the guide-on-the-side required changing the focus of pedagogy from the teacher to the

learner. Today teachers meet with a new challenge – changing relational position to the meddler-in-the-middle. Meddler-in-the-middle position means that the teacher and student are mutually involved in assembling and dis-assembling cultural products. This position brings the teacher and the student into a new experience of becoming co-creators of the learning process. (McWilliam, 2008). This requires flexibility, improvisation and creativity from the teacher.

Iversen and Pedersen (2017), Darsø (2017) emphasise the teacher's ability to contain anxiety as essential for something new to emerge. It requires a great deal of courage to become a co-creating teacher. This shift is always associated with resistance, sometimes frustration, and always a conflict (Ghais, 2005). These evidences indicate that courage is an essential quality for daring to start and facilitate a co-creative process, pushing students out of their zones of comfort and developing one's capacities of becoming the meddler in the middle.

New space for learning. This pedagogy of co-creating the curriculum can be seen as a Third space, a zone of proximal development (Bhabha, 2004: 86) that develops a cosmopolitan learning environment in which students and staff bring different forms of expertise to the development-focused experience that brings them together. Co-creation as a learning space can be physical (classroom, virtual and imaginary). Co-creation experience brings teachers and students into different situations where no one has a priority in knowledge. Co-creation is linked to diverse learning environments which stimulate students' engagement on the one hand, and on the other, it is a Third space, which in the process of generative dialogue allows co-create new knowledge.

Learner's agency. Co-creation practices stimulates student transformation to become "more than just a student (Lubicz-Nawrocka, 2019). Contemporary education refers to the importance of the learner, which maintains informal and active role in the learning process. Learners ask teachers for more ways of learner-centred approaches, fitting their personal learning requirements and interests (Loyens, Gijbels, 2008). The idea of learners as change agents, active partners, producers and co-creators of their own learning has been a topic of increased interest in recent years (Carey, 2013). Development of student-led, collaborative initiatives leads educational institutions towards promoting co-creating of learning processes and co-created learning outputs. Dunne and Zandstra (2011) proposed a theoretical model for integrating students into educational change. The matrix for students as change agents has four positions: a) students as evaluators of their HE experiences; b) students as participants in decision-making processes; c) students as partners, co-creators and experts; d) students as agents for change. Bovill et al. (2016) identified four roles students often assume in co-creating learning and teaching: (1) consultant teaching; (2) co-researcher; (3) pedagogical co-designer; (4) representative.

Analysis of scientific literature confirms the breadth of opportunities offered by different forms of partnership, including student involvement in pedagogical planning (Bovill, Bulley, 2011), students-as-researchers (Maunder et al., 2012), and students as strategic developers (Healey et al., 2010). It is important to note that this new type of interaction does not eliminate the need in teacher's expertise but requires additional skills in facilitation and negotiation.

Self-authorship. Co-creation is associated with self-authorship, another concept, which was elaborated by Baxter Magolda (Baxter Magolda, 1999). She emphasises that self-authorship involves cognitive, interpersonal, and intrapersonal development. Self-authorship is an "orientation to knowledge construction and evaluation based on balancing an understanding of the contextual nature of knowledge with interpersonally grounded goals, beliefs, and values" (Magolda, 2007a: 32). In the co-creation of the curriculum, through working in the partnership of students and the university staff and academics, all parties gain interpersonal self-authorship, respecting each other's contributions, and learning from each other. As an obvious benefit from co-creative practice, participants in co-creation projects have perceived increased cognitive development, critical analysis and applying theory to practice.

Learning community and partnership. According to Lubicz-Nawrocka (2017) co-creation promotes a learning community due to the evidences that students engage more and develop ownership; students develop empathy for staff; students feel respected; students feel their learning is more authentic and relevant. Co-creation of learning between educators and learners can significantly impact sense of learning community and enhance collaborative and flexible learning experiences.

Metacognitive practices. Co-creation of learning stimulates the development of a metacognitive awareness about what is being learned (Cook-Sather et al., 2014). Metacognition is defined as the ability to reflect and critically analyse one's way of thinking. Through metacognitive practices individuals are enabled to monitor, reflect and analyse their performance. Metacognition is also a distinct concept, which is related to co-creation in the sense that co-creation in education very often involves collaborative metacognitive practices.

Value co-creation and benefits of co-creative experience. Co-creation broadens the field of knowledge by encouraging both sides (students and teachers) to explore things more and transform learning experiences into something that adds value to learners who become active agents of the process (Fraser, Bosanquet, 2006). The main benefits are related to the development of shared responsibility, respect, and trust; learning from each other within a collaborative learning community; and satisfaction and development of individuals. Even though co-creation in the curriculum brings complex challenges for teachers and students, including increased responsibilities for students, increased time and effort involved for both students and staff, researchers Cook-Sather et al. (2014), Lubicz-Nawrocka (2017) note that co-creation experience contributes to the development of nowadays significant competences as such leadership, communication and teamwork, etc.

Identifying and explaining a model case

A model case presents the situation when the concept is used when containing all the defining attributes (Yazdani, Abardeh, 2017). The constructed model case presents all attributes of co-creation of learning.

The lesson on Lithuanian literature in one of the gymnasiums starts with clear presentation of the lesson objectives which should be achieved. The students are encouraged to reflect for some time and define their personal learning objectives aligned to the overall objectives of the lesson. In order to develop further engaging learning process, the teacher sets groups of students into three and asks to identify their current knowledge on the subject and co-construct the knowledge collaboratively following the method of three steps interview. It is an iterative process when students rotate the roles from an interviewer, an interviewee and a rapporteur. This is a great way to engage all students in the activity as students need to listen carefully so that they could write down their thoughts without distorting the information and concentrate on asking questions or answering them. After all steps of interviews are completed, the groups present their findings and identify knowledge gaps. This information allows the teacher further planning the education process based on the contributions from every learner. The identified learning gaps are presented on the smart board so that students could pick up one topic which they would like to analyse more. The teacher explains that the students may use creative approaches to develop their projects collaboratively. The new groups are set up based on the topic choice of the students. Next steps are discussed at the end of the lesson. The last minutes are devoted for reflection on the learning process and new knowledge acquired.

The teacher is a conductor of the process to set up a special space for students' collaborative work. Through partnership and collaboration, focusing on the new topic, students work collaboratively and actively identify their existing knowledge and knowledge gaps. Based on the existing individual knowledge they develop new understanding on the topic through co-creative and metacognitive practice (reflection). The case demonstrates a transformed teacher's role, students' agency and ownership of the learning process which brings finally added value to all the participants of the lecture.

Identifying and explaining alternative cases

Identifying alternative cases allows to clarify attributes of the concept by defining what is not co-creation. The case below presents a case which is very close to co-creation, however, some attributes are missing: the case presents a borderline situation when co-creation was not fully realised.

We organised 4 systemic interventions during a school year in one of Kaunas gymnasiums for the improvement of the English language lessons. Students were split into groups based on the diagnostic test results. Each group were assigned to work on different tasks based on their level of knowledge of the topic. Only one group was given flexibility to choose a topic of interest to develop a discussion. Groups which demonstrated lower level of knowledge required more teacher's support and scaffolding. Each student had to develop one's learning objectives for the lesson as aligned to the general objectives of the lesson as explained by the teacher. After each group

completed their work, they had a chance to present their results to the class and to provide feedback for their peers. The lesson ended with a short reflection and the teacher's feedback.

This case indicates that several important attributes of co-creation can be identified, however, not all of them are present. Some moments in the case also demonstrate a contrary situation as it is not appropriate to group students on the basis of the test as it does not accurately and objectively assess the student's knowledge. Instead, the learner should choose what task to start with. This will make the lesson run smoothly and maintain the work with interest and engagement of all students.

Thus, contrary cases are characterised by a frontal way of teaching, lack of flexible pedagogies, teacher-dominated strategies, little flexibility in the lesson, pre-determined positions and roles, lack of students' engagement and empowerment.

Identifying antecedents and consequences

Antecedents are those events that precede the occurrence of the concept. An antecedent may contribute to the occurrence of the concept it may be associated with its occurrence or it may need to be present for the concept to be present. After the analysis of scientific literature, the most frequent antecedents of co-creation were defined.

Non-hierarchical relationships and partnership indicate a shift in power relationship in education. Students are considered as equal partners in schools, universities and even kindergartens, and they have potential to contribute to the learning process through variety of means such as generative dialogue, flipped class and other creative methods.

Flexibility of curriculum is reflected in the defined long-term and short-term learning outcomes which can be achieved in alternative ways. Learning outcomes indicate what the learner should know, understand, and demonstrate, and the curriculum only suggests how to reach them. Flexibility of curriculum in educational institutions does not imply that learners alone decide on the content of learning rather they provoke teachers collaboratively discover alternative contents and ways to achieve the defined objectives and learning outcomes.

Scaffolding in learning aims to reduce learners' learning difficulties, supporting and guiding learning decisions, coordinating the individual goals of the learner with the intended goals of the program, providing comprehensive support throughout the personalised learning process (Halverson, Pepler, 2018). Supporting and motivating learners, teachers increase their learning motivation and allow them to feel owners of the learning process.

Formative assessment is crucially important in co-creative practices as it allows students to get involved into the peer assessment. Peer assessment might be a powerful approach if well mastered, however, it requires preparation of students, careful explanation of assessment principles, assessment criteria, which are used in the assessment of the work of peers. If properly organised and implemented, peer review stimulates co-creation of new knowledge and further learning.

Participatory design could be defined as the second crucial antecedent for co-creation to appear. It also implies trust in learners and openness to learners' capacities and risks as part of the institutional culture. Participatory design in learning is both a methodology and philosophy of the school which considers every person as significant contributor and co-creator of learning.

Consequences are those events or outcomes that happen after the occurrence of the concept. Literature analysis reveals the main recurrent themes in relation to the consequences of co-creation. In most cases we are talking about benefits of co-creation and, thus, it results in additional added value, increased learning ownership, better engagement in the learning process and learners' empowerment. Thus, added value is an umbrella concept as learning ownership, engagement in the learning process and students' empowerment could be considered as added value of co-creation practice and still they also produce additional benefits such as increased motivation, learner's satisfaction, stronger interest in learning and specific subjects or phenomena, etc.

Identifying empirical referents

Empirical referents allow measuring existence of the concept. After the analysis of the co-creation concept, the operationalisation resulted in a set of empirical indicators grouped into the following categories which are presented in [Table 2](#).

Table 2 Empirical referents of co-creation

<p>1) Collaborative process</p> <ul style="list-style-type: none"> • Engaging pedagogical process (Bovill et al., 2016; Dunne, Zandstra, 2011; Scharmer, 2007; Hassan; 2014); <ul style="list-style-type: none"> • Level of interaction (Bovill, Bulley, 2011); • Active learning methods (Scharmer, 2007; Hassan, 2014; Al-Jeraisy et al., 2015; Jensen, Krogh, 2017; Richter, Courage, 2017; Stoten et al., 2018); <ul style="list-style-type: none"> • Elements of negotiation (Bovill et al., 2013);
<p>2) Collaborative output</p> <ul style="list-style-type: none"> • Participatory design (van Doorn, 2016) <ul style="list-style-type: none"> • Collaborative analysis and communication (van Doorn, 2016); • A phase in the knowledge appropriation model (Leoste et al., 2019); • Collaboratively co-created curriculum (Bovill, 2017, 2019; Bovill et al, 2016; Cook-Sather et al., 2014; Murphy, Nixon, 2017; Lubicz-Nawrocka, Simoni, 2018);
<p>3) Transformative interaction and teacher position</p> <ul style="list-style-type: none"> • Teacher as co-learner (Already Rogers, Freiberg, 1994); • Teacher's courage (Iversen, Pedersen, 2017; Darsø, 2017); • Teacher's flexibility and improvisation (McWilliam, 2008);
<p>4) Learner's agency</p> <ul style="list-style-type: none"> • Pro-active role (Lubicz-Nawrocka, 2019; Carey, 2013; Dunne, Zandstra 2011); <ul style="list-style-type: none"> • Students as evaluators of their experiences (Dunne, Zandstra, 2011); • Students as participants in decision-making processes (Dunne, Zandstra, 2011; Bovill et al., 2016; Healey et al., 2010); <ul style="list-style-type: none"> • Students as partners and experts (Dunne, Zandstra, 2011); • Students as co-researchers (Maunder et al., 2012);
<p>5) New space for learning</p> <ul style="list-style-type: none"> • Different forms of expertise brought together (Bhabha, 2004); • New learning platforms (Richter, Courage, 2017; Stoten et al., 2018);
<p>6) Self-authorship</p> <ul style="list-style-type: none"> • Increased cognitive development (Magolda, 2007a); <ul style="list-style-type: none"> • Critical analysis (Magolda, 2007a); • Applying theory to practice (Magolda, 2007a);
<p>7) Learning community and partnership in learning</p> <ul style="list-style-type: none"> • Empathy for staff (Lubicz-Nawrocka, 2017); • Feeling of being respected (Lubicz-Nawrocka, 2017);

- 8) Metacognitive practices
- Reflection (Cook-Sather et al., 2014);
 - Social meta-learning practices (Cook-Sather et al., 2014);
- 9) Value co-creation
- Ownership of learning (Lubicz-Nawrocka, 2017);
 - Authentic learning (Bovill, Bulley, 2011; Cook-Sather et al., 2014);
 - Increased responsibilities for students (Cook-Sather et al., 2014; Lubicz-Nawrocka, 2017).

The identified empirical referents are used in the analysis of the defined phenomenon, learning co-creation in the field of education.

Co-creation of learning concept might have a set of diverse attributes in different contexts involving other than educational sectors. For example, in business or marketing, co-creation will have attributes related to customers' engagement, added value of goods or services, etc. Slightly different attributes might be observed in design, arts or other sub-sectors in cultural and creative industries. Our aim was to analyse co-creation concept in the field of education, not limiting to any sector (pre-school or higher education). It is worth mentioning, that the available literature had limitations while analysing co-creation in early childhood education. It might be explained by the fact that co-creation requires certain conditions and capacities of learners, which are not sufficiently developed in early ages. On the other hand, co-creation in pre-school and primary education is a growing field. Most of the analysed contexts were related to higher education, as it involves adult learning and thus, provide a wide range of co-creation experiences in curriculum, in research, etc.

The concept analysis of co-creation of learning and identification of the key attributes, a model case, antecedents and consequences, allowed to develop a concept map (Figure 1).

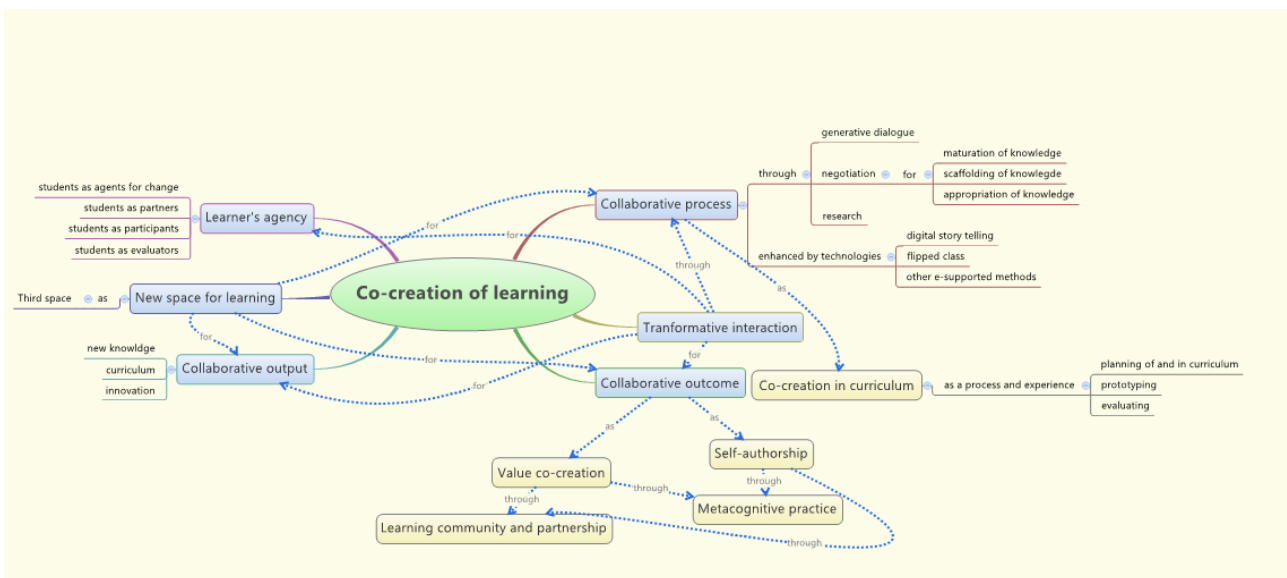


Fig. 1. Co-creation of learning concept map

The identified attributes of the concept were clustered into 6 major themes: collaborative process, transformative interaction, collaborative output, collaborative outcome, learner's agency, and new space for learning. Three attributes such as value-co-creation, self-authorship and metacognitive practice were clustered into one theme collaborative outcome, which indicates a long-term positive impact of co-creative practice. Collaborative output indicates a relatively immediate result of co-creative practice, which results in new knowledge (co-created through

generative dialogue, negotiation or research), new curriculum or educational innovation. Analysis of scientific literature also suggested distinguishing as a separate sub-theme co-creation in curriculum as most of the co-creation practice takes places in the learning process (in curriculum) or for designing and implementing new curriculum. Metacognitive practice was also defined as a separate sub-theme even though one could argue that it is a collaborative process. However, metacognitive practice is both a process and an outcome of co-creation.

4. Conclusion

Significantly, that this research revealed a diversity of complexities current teachers and learners face today. Educational research already suggests pedagogical strategies which might be helpful in practical realisation of co-creation practices within the classrooms. They include generative dialogue, negotiation, collaborative work, participatory design model and others.

This study was based on a concept analysis. Each phase of the research was extremely useful in decoding the co-creation as multidisciplinary phenomenon but still focusing on the field of education. The conducted concept analysis helped to identify the main attributes of the concept as well as to define antecedents and consequences. The study helped to see interconnections of the main themes identified and they include collaborative process, transformative interaction, collaborative output, collaborative outcome, learner's agency, and new space for learning.

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