Pre-school Teachers' professional development needs concerning competency-based teaching

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Abstract
The competency-based approach is currently introduced throughout the whole pre-school education system, and this process reveals the uncertainty, doubts, confusion, and unpreparedness of teachers for the implementation of this task. It also highlights the need to provide new guidance for the professional development of in-service teachers. The article presents the results of a survey on the professional needs of pre-school teachers for implementing a competency-based approach. The research data is obtained from focus group discussions, teacher surveys, and self-assessments from teachers’ professional development courses. The research data shows that the most topical professional development needs of pre-school teachers are linked to the need for an in-depth understanding of such components of competency-based approach as equity, meaningful assessment, personalized learning, transversal skills, and learning environments, allowing to identify the tasks for the professional development of teachers to promote a common understanding for implementing a competency-based approach in pre-school education.

Keywords: competence; competency-based approach; professional development; professional needs; pre-school teachers

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1. Introduction

Professional achievements and mastery are formed gradually, systematically, and regularly improving and perfecting one’s actions following a person’s interests, needs, and labor market requirements (Clear, 2018). The perfection of a teacher’s professional development is defined as participation in formal and non-formal professional development activities, which may include, for example, a specific field of studies or a pedagogy-related education. Professional development is a professional obligation for teachers in 29 European countries, including Latvia (European Commission, 2015). The main forms of teachers’ professional development are professional development programmes, courses, thematic workshops and conferences, mentoring, collegial learning, etc. The offer of professional development also includes the acquisition of specific modules within the study programmes (European Commission, 2015; IZM, 2017).

Formal and traditional forms of professional development dominate in almost all educational systems, but new methods are also emerging, such as teacher networks. The European Commission Eurydice (2015) reports describing the professional development opportunities and needs of European teachers, revealing such topicalities as the application of information technologies in the learning process, acquisition of digital skills, implementation of transversal skills, education in a multicultural environment, career education, and topicalities in inclusive education. Research studies (Mikelsone & Grava, 2018; Mikelsone et al., 2017; Soini et al., 2016; Steeg, 2016; Doecke, 2015) emphasize the acquisition and development of reflection skills suggesting video analysis of pedagogical activities as one of the components of teachers’ professional development. Other professional needs of teachers are related to the implementation of a child-centered approach (Mikelsone & Grava, 2018), the essence of competency-based education (Protassova et al., 2020; Mikelsone & Grava, 2018), teacher cooperation and social learning, as well as professional awareness and job satisfaction (Hauge & Wan, 2019).

1.1. Conceptual Framework

When implementing competency-based education, the pre-school teacher must be aware of: 1) each child’s meaningful involvement in learning, 2) personalized learning, 3) self-learning, providing the children with the opportunity to become aware of the importance of acquired information in their life, 4) opportunity to pay more attention to each child’s skills, attitudes, 5) acquisition of knowledge, skills, values , and attitudes by teaching children to solve various everyday situations and encouraging understanding of their actions concerning global problems, and 6) equal opportunities for every child in achieving the learning outcomes (Purēns, 2017; Njeng’ere, Kabita, & Lili, 2017; Levine & Patrick, 2019).

To identify and analyse the professional development needs of pre-school teachers concerning competency-based education, it is important to identify the principles of its implementation. The aim of competency-based education is not to know as much as possible, but to understand the essence and to be able to apply obtained knowledge in complex and changing life situations. The essence of competency-based education is to create conditions for children, teachers, and also parents for promoting an in-depth understanding and developing skills in various contexts, as well as for personal development. It requires both analysing, highlighting, and strengthening the existing examples of good education practice, taking them into account, making significant changes to the content of learning, assessment of children's performance, learning approach, and learning environment.

1.2. Related Research

Competence-based education can be defined as an outcomes-based educational approach that emphasizes children’s knowledge, skills, attitudes, values, and behaviors, which are also identified as learning objectives. In this case, the learning outcomes are called “competencies” (Morcke, 2013; Gervais,
Competency-based education is child-centered, personalizing the learner’s progress, in other words, “personalized learning and competency-based education go hand in hand” (Sturgis, 2016).

Levine and Patrick (2019) point to seven elements that should be included in competency-based education, and which can be fully attributed to the pre-school stage:

1. Children are encouraged to make important decisions about their learning experiences daily – how they will create and apply the knowledge and how they will demonstrate the progress of their learning. Children move to the next level of learning only after they have demonstrated their skill at a current level.

2. The assessment is timely, relevant, and based on practice, providing children with a meaningful, positive, and encouraging learning experience.

3. Children receive timely and differentiated support based on their individual learning needs.

4. Children’s developmental progress is based on their skills and abilities, not on the duration of acquisition of skills. Thus, the time required for acquiring the content is not a factor for assessing the children’s competencies.

5. Children learn using different ways and in varied pacing.

6. Inclusive education and an inclusive pre-school education environment is a strategy for ensuring equity for all children. Children have their vision and have a voice in the teaching and learning process.

7. Learning outcomes (knowledge, skills, values, attitudes) are explicit, transparent, measurable, and transferable.

Thus, the outcomes of a competence-based approach are measured not by the number of hours spent in the learning process, but by the children’s skills that are demonstrated during the learning and in everyday situations. It is a major shift in the culture of educational institutions, their structures, and in pedagogy in general, as it aims at ensuring the success of all children (Levine & Patrick, 2019).

In addition, other authors have stressed the important components of competency-based education (National Research Council, 2012; Lench et al., 2015; Gross et al., 2018; Levine & Patrick, 2019). They are:

1. **Equity**: each child receives what he/she needs to develop the full academic and social potential (National Equity Project, n.d.).

2. **Meaningful assessment**: includes formative feedback that is useful, growth-oriented, and feasible. Teachers rely on formative assessment data to differentiate the learning process and provide support to each child, which will lead them to success. In turn, children provide evidence of their learning, their learning goals, based on their current position in the immediate development zone (based on their current zone of proximal development).

3. **Different pathways**: the learning is personalized, reflecting children’s unique needs, strengths, interests, goals, and pace.

4. **Varied pacing**: pacing is no longer uniform. The primary goal is deep learning, not faster learning. Varied pacing means that children, who have mastered a particular topic, are encouraged to continue acquiring in-depth knowledge in a variety of ways, as well as to learn several ways for demonstrating competence.

5. **Transferable skills**: transferable knowledge and skills are used in learning within and across various content areas. Transferable knowledge is a product of deep learning, which includes the content
knowledge in a certain domain and the understanding of how, why, and when to apply this knowledge to answering questions and solving problems (National Research Council, 2012).

6. **Evidence of mastery (competence):** children have provided evidence of competence when assessments demonstrate the application and transfer of essential knowledge and skills (Lench et al., 2015).

7. **Relationships between competency-based education and personalized learning:** personalized learning is the adaptation to each child's strengths, needs, and interests, giving children the opportunity to express their views and choose what, how, when, and where to learn. It provides flexibility and support, ensuring that each child reaches the highest possible level of learning (Gross et al., 2018).

A conscious and meaningful teachers’ understanding of competency-based education and its components, as well as pedagogical skills and professional attitude, will foster the development of a meaningful and developmental learning environment in pre-school (Mulenga & Kabombwe, 2019), and will also promote the development of children’s competence, including their interests, motivation, willpower, and understanding of learning. For implementing competency-based education, the pre-school teachers’ professional self-development and change of thinking, as well as the development of the organizational culture of the pre-school educational institution towards a “learning organization,” are essential (Senge, 1990). Teamwork and constructive cooperation become important at all levels – for administration, pre-school teachers, as well as teaching assistants and other staff members. Therefore, teachers’ professional development system should be considered as a priority in education, also promoting the prestige of the teacher’s profession (Council Notices from European Union Institutions and Bodies, 2009).

**1.3. Purpose of study**

This article aims to reveal the professional development needs of pre-school teachers related to the introduction and implementation of competency-based education. In Latvia, the education reform was launched in 2016, which affects all levels of education and is focused on the introduction of competency-based education. Since 2019, the competency-based education guidelines “Regulations Regarding the State Guidelines for Pre-school Education and the Model Pre-school Education Programmes” (Latvijas Vēstnesis, 2018, 236) are introduced and implemented in pre-school education, envisaging a unified and practice-based learning and upbringing process, during which the children acquire knowledge, basic skills in various fields, develop transversal skills and form value-based habits. The research question: what are the professional development needs of teachers for the implementation of the competency-based approach in pre-school education are.

**2. Materials and Method**

**2.1. Data Collection Tools**

This research can be defined as Survey Research, in which the main empirical data on the research problem are obtained by asking written and oral questions to the specific group of respondents – the teachers. The survey is one of the most effective ways for obtaining diverse information – on how people think, on their desires and needs, views, attitudes, and opinions (Babble, 2020). Survey research is chosen when there is a need to develop or modify a product or service that will be offered to a particular audience (Alreck & Settle, 2003). For this specific study, the survey method was selected to understand the activity/behavior of teachers in the process of introducing the competency-based approach in pre-schools, identifying teachers’ understanding and their professional development needs (Balnaves & Caputi, 2001).
2.2. Research Participants

The survey sample consists of pre-school teachers (n = 130) who work with children of different age groups – the youngest (1.5 - 3 y/o), the middle (4 - 5 y/o) and the oldest pre-schoolers (5 - 7 y/o), and who represent municipal pre-schools from large cities, small towns and rural areas of Latvia. The choice of respondents was based on the subjective selection criteria of the researchers, in particular – the convenience technique, which is justified by an improbable sample.

2.3. Procedure

When composing the survey questions, it was important to explore the teachers' pedagogical experience and understanding of the implementation of the competency-based approach in pre-school education practice. To identify the non-standard or unique answers, as well as the personal attitude of the respondents towards the research problem, the content analysis was performed summarizing the data obtained from the open-ended questions, clarifying the most common conceptual units that can be attributed to the professional needs according to the defined categories and criteria (see Table 1). The volume and context of the defined conceptual units are analysed (Kristapsone, 2008).

For a deeper understanding of the data obtained by the survey, the self-assessments of pre-school teachers on the quality of their professional activity (n=50), completed in 2020, and the self-assessments of pre-school teachers participating in the professional development programmes (n=48) were analyzed. But, for gaining insight into pre-school teachers' professional development needs implementing the competency-based approach, a focus-group discussion of eight participants was organized ensuring the involvement of various stakeholders: two principals of pre-school education institutions, two pre-school methodologists, two pre-school education teachers, and two teacher assistants (n=8), representing both urban and rural pre-school education institutions. The focus-group discussion aimed to explore the practical experience of pre-school specialists on implementing the competency-based approach, identify the problem areas and possible solutions, validate the findings obtained from the survey and teachers' self-assessment analysis, as well as to examine in-depth the views of the parties involved. The total number of participants in this study is N=236. The data was collected from 01.09.2019 to 31.06.2021.

2.4. Criteria for Data Collection and Analysis

The obtained data were grouped and analysed according to the categories that characterize the competence-based education, suggested by various authors (National Research Council, 2012; Lench et al., 2015; Gross et al., 2018; Levine & Patrick, 2019). The subcategories were defined, and codes were assigned to systematize the data in a detailed way and to identify the needs of teachers for the implementation of the competency-based approach (see Table 1).

Table 1: Data analysis categories and subcategories

| Research categories | Sub-categories | Codes |
|---------------------|----------------|-------|
| 1. Equity           | Recognizing children’s developmental needs: | E 1.1. |
|                     | Academic needs | E 1.1.1 |
|                     | Social needs   | E 1.2.1 |
|                     | Ensuring equal opportunities for all | E 1.2. |
|                     | Foreseeing individual activities | E1.3. |
|                     | Non-marginalization of individuals and social groups | E1.4. |
|                     | Inclusion of individuals and social groups | E 1.5. |
| 2. Different pathways | Personalized learning - respecting each child's needs, strengths, interests, uniqueness, goals, pace | D 2.1. |
|                     | Development of a plan/program for personalized learning | D 2.1.1. |
|                     | Arranging the learning environment according to personalized learning | D 2.1.2. |
|                     | Personalized learning in the activities organized by the teacher | D 2.2 |
To view constructively the needs of pre-school teachers' professional development for the implementation of the competency approach in pre-school education, the interpretation of the obtained data was also based on “Regulations Regarding the State Guidelines for Pre-school education and the Model Pre-school Education Programmes” (Latvijas Vēstnesis, 2018, 236).

3. Results

The survey data were analysed based on defined categories and criteria (see Table 1) exploring the range of professional needs of pre-school teachers. The survey data also reveal the teachers' understanding of the nature of competency-based education and the principles of its implementation. Performing the content analysis of the data, 1286 conceptual units were identified and coded following the selected categories and subcategories. The data are presented separately for each category (see Figure 1) as well as including the subcategories (see Figure 2).
The coded results of the data obtained from the questionnaires, taking into account also analysis of self-assessments and focus-group discussion, show that the professional development needs of teachers apply to all categories of competency-based education (see Figure 1). Teachers link their professional development needs most strongly to the activities included in the category “Equity” (30.87%), followed by the activities from the category “Different pathways” (19.98%). The professional development needs of participants are least associated with the activities included in the categories “Evidence of competence” (5.20%) and “Relationships between competency-based education and personalized learning” (3.88%). A similar percentage of professional development needs are linked to the activities related to the categories “Varied pacing” (13.99%), “Meaningful Assessment” (14.85%), and “Transferable skills” (11.19%).

To explore the distribution of teachers’ professional needs, the needs were grouped into smaller units – subcategories, reflecting the substantive aspect of the teachers’ needs in greater detail (see Figure 2).
Further, attention was paid to the subcategories that showed the highest and the lowest number of conceptual units in each category.

Figure 3: The highest indicators of needs

The obtained data allow us to conclude that the dominating professional needs of teachers (see Figure 3) are the ones related to the teaching itself and the perfection of the teaching process. Thus, in the category “Equity,” teachers link the development of their professional needs to the activities of the
subcategory “Academic needs” (code E 1.1.1, 124 conceptual units). In the category “Different pathways”, the needs attributed to the subcategory “Personalized learning - respect for each child’s needs, strengths, interests, uniqueness, goals, pace” (code D 2.1, 121 conceptual units) are dominant, but in the category “Varied pacing” those are professional needs related to the activities included in the subcategory “Individual pace of progress for each child” (code V 3.4, 80 conceptual units).

In the category “Meaningful assessment,” the most needs fall in the subcategory “Meaningful feedback’ (code M 4.1, 94 conceptual units), but in the category “Transferable skills” – in the subcategory “Transversal skills are applied in activities of all learning fields” (codes T 5.3, 144 conceptual units). In the category “Evidence of competence,” the needs included in the subcategory “Self-directed learning” (code C 6.1.4, 21 conceptual units) are emphasized, but in the category “Relationships between competency-based education and personalized learning”, the dominating needs are included in the subcategory “Achieving the highest possible level of learning for each child” (code R 7.2, 34 conceptual units).

**Figure 4: The lowest indicators of needs**

In turn, the subcategories, which includes the least amount of professional needs of teachers (see Figure 4), are the following: in category “Equity” it is the subcategory “Non-marginalization of individuals and social groups” (code E1.4, 5 conceptual units), in “Different pathways” – subcategory “Children achieve the planned goals and competencies in different (individual) ways” (code D 2.4, 3 conceptual units), and in category “Varied pacing” – subcategory “Involvement in a variety of activities for raising in-depth awareness” (code V 3.2, 4 conceptual units). There are two subcategories of “Meaningful Assessment” – “Learning evidence of child’s achievements” (code M 4.4; 0 conceptual units) and “Authentic assessment” (code M 4.5, 0 conceptual units) that do not include any professional needs mentioned by the respondents. The content analysis also did not find data related to the professional needs of teachers that would fall into the subcategory “Skills applied acting in different situations/contexts” (code T 5.2, 0 conceptual units) under the category “Transferable skills”. In the category “Evidence of competence,” the teachers associate their professional needs the least with activities of the sub-category “Providing evidence of competence” (code C 6.1; 3 conceptual units), and in the category “Relationships between competency-based education and personalized learning”, sub-category “Transfer of skills and competencies to new situations” (code R 7.1; 16 conceptual units).
4. Discussion

The results of the content analysis of the questionnaires, focus-group discussion, and self-assessments suggest that teachers have an idea of the individual components of competency-based education, such as the implementation of transversal skills in all areas of learning and the provision of academic knowledge, but other important components are not considered or even mentioned, for example, knowledge transfer or application of transversal skills in new situations. Pre-school teachers link their professional needs more to the development of teaching and learning skills and individual monitoring of progress (on the part of the teacher) without linking it to the child’s learning process as a self-discovery, awareness of the progress (on the part of the child), as well as to the transfer of acquired skills and competencies to new situations. “Teachers allocate too little time for children to assess their achievements, to understand where they are, what has to be done next and how to proceed. Meaningful feedback is very, very important” (from the focus-group interview). Teachers also reveal a way in which children’s progress can be monitored: “In this academic year, in the learning process based on the new competency education model, each student’s individual progress is recorded in a specially designed table. This table makes planning and analysis much easier” (from self-assessments).

In the focus group discussion, addressing the needs of teachers when implementing the competency-based approach, the principals and methodologists of pre-school education institutions pointed out constructively the interrelationships between the teachers’ needs, stressing the fact that one need may arise from another, as well as saying that “support is given to every child when he/she needs it, but the support system has not been developed” (from the focus-group interview, codes V 3.4; V 3.6). However, in the self-assessments of pre-school teachers such succession of needs is not observed; the needs are listed and analysed as separate elements resulting from the teacher’s pedagogical activity. Thus, the pedagogical process is not perceived holistically and, accordingly, the needs are described autonomously. For example, from one side, teachers want to improve their skills in applying transversal skills in all areas of teaching and learning, but from the other side, the issues of how to facilitate the transfer of these transversal skills to new situations, and the ability to apply the acquired knowledge and skills in new situations, which is the essence of competency-based approach, are not mentioned and actualized. Thus, teachers need to develop a holistic vision for the implementation of competency-based education. It is not enough to perceive and understand only one thing at a time. The primary need is to understand the interrelationships, and understanding is formed when these relationships are addressed. It allows one to see that anything and everything is interconnected, and to notice how one change affects and promotes other changes (Miķelsone & Odiņa 2020; Nava, 2001).

In 2016, the European Social Fund project “To develop the content of general education based on the competency approach” (Project No. 8.3.1.1/16/I/002) was launched, to ensure the approbation of the competency-based general education content following the description of compulsory general education guidelines and the introduction of the learning content in pre-school, primary and secondary level of education (National Centre for the Education Republic of Latvia, 2016). As the result of project activities, the “Regulations Regarding the State Guidelines for Pre-school Education and the Model Pre-school Education Programmes” (Latvijas Vēstnesis, 2018, 236) have been developed and approved, which also reflects the compulsory content of pre-school education, learning outcomes and the principles for their implementation. The main emphasis is placed on the acquisition of certain values and virtues, as well as the acquisition of transversal skills, which is the basis for the compulsory content of pre-school education. It includes the child's activity, thinking, emotional and social aspects, which helps to acquire knowledge, understanding, and basic skills in different contexts and such areas as language, social, civic, and cultural awareness, self-expression in art and the fields of science, mathematics, technology, health, and physical activity. This is mentioned also in the description of teachers' professional needs, for example, “The new curriculum implies new pedagogical aspects that are unknown to teachers, so it would be important that
both new and experienced teachers would acquire them” (from self-assessments); or “In order to implement the preschool education guidelines, it is important for teachers to understand how the pedagogical process should be organized, how to cooperate with parents, how to elaborate documentation, etc.” (from self-assessments).

The document “Regulations Regarding the State Guidelines for Pre-school Education and the Model Pre-school Education Programmes” (Latvijas Vēstnesis, 2018, 236) highlights the activities “... that help to acquire knowledge, awareness and basic skills in different contexts”. However, it can be observed that many teachers who work in pre-school education do not yet fully understand the meaning of diverse contexts and they have not yet acquired the skills how to organize the children's engagement in new situations, which would prove their competence. For example, “It is difficult to work with children from re-emigrant families due to language barriers, cultural perceptions, and other factors” (from self-assessments). Therefore, in the professional development tasks of pre-school teachers the activities should be included which fall into the following sub-categories: ‘Involvement in a variety of activities for raising in-depth awareness’ (code V 3.2), “Skills applied acting in different situations/ contexts” (code T 5.2), ”Transfer of skills and competencies to new situations” (R 7.1).

With regards to the above-mentioned conclusion that the teachers are not sufficiently aware of their needs concerning the activities that help children to discover themselves (to become aware of their uniqueness) in the learning process, the professional development tasks should include the activities that would comply with the following subcategories: “Children achieve the planned goals and competencies in different (individual) ways” (D 2.4), “Differentiated and individual support for progress up to graduation of pre-school for each child” (code M 4.3), “Individual support system for everyone” (V 3.6). “Learning evidence of child’s achievements” (code M 4.4), “Provide evidence of competence” (code C 6.1), and “Non-marginalization of individuals and social groups” (code E 1.4).

When conducting the self-assessment analysis and coding of particular conceptual units, a tendency was observed that the teachers think of their professional needs more concerning educational policies, concepts, and keywords mentioned in the documents and tend to follow the principle "because it should be done this way", instead of thinking about the needs that arise from their self-analysis and awareness of their abilities. Here are some examples: “I think, at the moment the teachers act in a certain way because they have to do so according to the competency approach. They ask the children – how did they like it and what did they like. That's all. But how does this affect further learning?” (From focus-group discussion); “Now self-directed learning has become topical” (from self-assessments); “I would like to attend courses where I could learn how to integrate the transversal skills, virtues, and values in all areas of learning” (from self-assessments).

This allows concluding that the awareness and development of a teacher's professional identity as well as the development of self-education skills and reflection on one's activities become an important task for the professional development of pre-school teachers. "There is a similar problem with the teachers' self-assessments. Teachers assess their pedagogical performance because the management requires it. It often states – I succeeded, because the children participated and showed interest. Nothing really can be deduced from this sentence. However, there are also examples of good practice, smart teachers who discuss methodological techniques and problems between themselves. But they are not many” (from focus-group discussion).

In their self-assessments, the teachers have mentioned that “courses should provide less theory, more particular examples, and worksheets,” but nowadays teachers should understand also the theory and base their activity on it, becoming competent in managing children's activities and creating the necessary conditions for children's activities. Teachers must become facilitators for learning, which requires a flexible and creative approach as opposed to following direct instructions and using the same
worksheets. The teacher is a facilitator of learning who finds different and varied solutions in each changing situation.

Evaluating the results of the study, it is important to point out also some limitations. The obtained data and conclusions do not represent the opinion of pre-school education teachers, administration, and support staff representatives who work in the private pre-school education sector and who operate within general education institutions, as all research participants were from the pre-schools that are founded by various municipalities.

5. Conclusion

With regards to the implementation of the competency-based approach, the data analysis shows that the pre-school teachers are more aware of and associate their professional needs with the academic aspects of learning, skills for monitoring the children's progress, and the specific conditions and tasks that are directly defined by educational documents, for example, the development of transversal skills and self-directed learning. The professional needs are less associated with such competency-based components as transfer of knowledge, application of transversal skills in new situations, and the promotion of children's self-expression and awareness of their uniqueness. It must also be acknowledged that the aspect of subjectivity is rarely mentioned by teachers when defining their needs. The identification of professional needs often did not result from self-assessments and self-analysis of one's abilities.

Therefore, for the professional development of pre-school teachers, the following recommendations are proposed. There is a need to:

1. perfect the teachers' holistic understanding of competency-based education, in which all its components are interconnected as a whole.
2. promote the self-assessment of teachers' pedagogical activity, self-analysis, acquisition of reflection skills, promoting the development of professional identity. It also calls for raising the self-education aspect of teachers.
3. promote conscious pedagogical activity for helping children to gain an understanding of their achievements and provide evidence of their competence.
4. improve the implementation of children's personalized learning and develop the ability to organize the pedagogical process in such a way as to prevent the marginalization of individuals and social groups.
5. promote the acquisition of teacher-initiated reflection for the improvement of their professional activity.

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