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# Movement and integrated learning: preschool teachers' competence

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**ABSTRACT**
The research aim was to determine the preschool teachers' competence for the implementation of movement in children's integrated learning and everyday activities during their stay in early education institutions. As many as 100 preschool teachers from various early education institutions of the City of Rijeka and its surrounding participated in the research. The questionnaire consists of 16 items. The basic statistical parameters were calculated, and the Spearman correlation coefficient, the Mann–Whitney *U* and the Kruskal Wallis test were used. Results show that preschool teachers with more in-service years have a significantly ($p = 0.00$) better opinion of the benefits brought by movement and more need for professional training. The preschool teachers who participated in educations linked to movement feel significantly ($p = 0.00$) more competent for its integration in their educational work. The need to integrate movement has become the imperative of contemporary education.

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## Introduction

Competencies have gained great significance today and are thus part of numerous national and European documents and strategies. Following this, there are many definitions of competencies, but at the root, they have the same starting point. Thus, the European Council emphasises the generally accepted concept according to which competencies are defined as general abilities based on knowledge, experience, values and dispositions which are necessary to any individual for their fulfilment and development, social integration and employability. Compulsory education represents only the first step, the foundation for further learning as part of lifelong education (European Commission, 2004). Moreover, the document 'Common European Principles for Teacher Competencies and Qualifications' (European Commission DG Education & Culture, 2005) highlights the importance to promote the European teacher's competencies and qualifications. As such, the text should be a support to

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creators of educational policies on both the national and regional level. The report 'Education and Training 2010– The Success of the Lisbon Strategy Hunger on Urgent reforms' (Council of the European Union, 2004) adopted by both the Council and Commission, considers the teacher competencies and qualification development as a 'priority matter.' competencies owned by preschool teachers and other professionals employed in early and preschool education institutions make a significant contribution to the educational system quality. A person's knowledge, abilities and skills are interpreted as an individual's competencies, but according to the document Competence Requirements in Early Childhood Education and Care – CoRe (European Commission, 2011), in the education system competencies are considered to be a characteristic and capability of the whole system, not only of an individual. A competent early and preschool education system will support individuals to understand their own capacity for knowledge and skills necessary to work in the educational practice which puts before preschool teachers' new demands on a daily basis, while it will also encourage the development of the same.

The National Curriculum of Early and Preschool Education (2014) highlights as an important objective the possibility for children's overall development, development, education and learning, as well as the development of all key competencies. The holistic (overall) approach to children will be achieved by preschool teachers integrating all the areas of children's learning and life in the educational process, not by parcelling them by content and time (National Curriculum of Early and Preschool Education, 2014). Although in their work preschool teachers offer to children various stimuli and activities influencing the child's development, the extent to which movement is present can be argued. Ennis (2013) emphasises that the integration of movement in children's daily kindergarten activities represents a kind of 'vaccine' for the health of the society because from an early age it prevents the appearance of diseases related to the lack of movement. Preschool teachers, along with kinesiologists, are considered initiators of physical activity, i.e. movement in the educational institution. To encourage children's physical activity and their movement, preschool teachers have to integrate movement in their educational work, but taking into consideration various elements such as children's wellbeing and needs, as well as safety during movement.

The need to integrate movement has become the imperative of contemporary times. The integration of movement into all educational groups brings forth obesity prevention from an early age, considering the fact that the percentage of obese children is rising (Petrić, 2019). Sport programmes give additional encouragement to children's movement, but not all children participate in them, which is a factor of limitation (Vujičić et al., 2020). By integrating movement into the everyday educational work, children are enabled to develop holistically, which is supported by stating that all children have the same rights, while preschool teachers will own the necessary competencies for movement thus enabling every child to fulfil their needs for movement.

Therefore, this research aims to determine the preschool teachers' opinion about their competence to implement movement in children's integrated learning and everyday activities during their stay in early education institutions.

## Methods

This work has been fully supported by the University of Rijeka under the project number uniri-drustv-18-268.

### Sample of participants

A convenience sample was used in the empirical research. As many as 100 preschool teachers from various early and preschool education institutions of the City of Rijeka and its surrounding participated in the research. The largest number of preschool teachers was from Rijeka (63%), followed by Čavle with 15 participants, Opatija with 13 participants, Matulji with 6 participants, Viškovo with 2 participants and Bakar with one participant. All the participants were females ($N = 100$), averagely 37 years old (min = 23, max = 61). Their in-service years are in the range from 0 to 39, while the average value is 12 years. Out of the total number of respondents, 52 (52%) preschool teachers finished undergraduate professional study. 26 (26%) preschool teachers completed undergraduate university studies, while 22 educators marked graduate university studies for the highest level of education achieved.

### Measuring instrument

A measuring instrument was constructed for the needs of this research. Two scales were formed based on a few relevant research studies. The participants responded to questions based on a five-degree Likert scale relating to the level of agreement or disagreement with the offered statements. The questionnaire consists of 16 items taken over from the following research studies: Neznanović (2016) and the document 'Preschool Comprehensive Health and Physical Education Academic Standards' (Colorado Preschool Program Staff, 2012). Two questionnaire scales can be recognised. The first scale assesses the preschool teachers' competence for the integration of movement into the direct educational process, while the other scale relates to preschool teachers' competencies for the integration of movement linked to the working conditions in the early education institution.

Besides the aforementioned, the questionnaire contains preschool teachers' sociodemographic data, namely the following variables: age, sex, level of education, number of in-service years as preschool teachers, work in a nursery educational group for children aged one to three, or in a kindergarten educational group for children aged three to six, work in an educational group enriched with sport contents, and the existence of educations about the conduction of sport activities with children.

### Methods of data processing

Data were processed by the program IBM SPSS statistics v. 22. The basic statistic parameters were calculated: percentages, arithmetic mean and standard deviation. The Spearman correlation coefficient was used to determine the correlation among certain items, while to determine the variation among items the Mann–Whitney $U$ test and the Kruskal Wallis test were used at the significance level of $p < 0.05$.

## Results and discussion

Figure 1 presents the descriptive data for the preschool teachers' opinion scale about their own feeling of competence for the integration of movement in children's everyday activities, i.e. in their own educational work. Ten items found in the scale tested if preschool teachers used games with movement in their educational work, if they used movement during story reading, and what was their opinion about their own knowledge of movement.

Preschool teachers should adapt the educational group's room space to children's need for movement, because the aim of the National Curriculum of Early and Preschool Education (2014) is the overall child's development achieved by integrated learning and satisfying their various needs. Furthermore, the Curriculum (2014) emphasizes that the spatial and material environment should stimulate children to use various abilities and senses, which will be achieved by an adaptation of the room space. In line with that, 63 (63%) of the preschool teachers completely agree and think that in their own educational work they adapt the room space to children's needs.

According to 'Preschool Comprehensive Health and Physical Education Academic Standards' (Colorado Preschool Program Staff, 2012), a competent preschool teacher who works in a top-rate system of early and preschool education should practice reading stories accompanied with movement because it develops the children's motor skills necessary to master space, the whole locomotor system, and it stimulates children's attention which enhances integrated learning.

In the research conducted by Ljubetić and Kostović Vranješ (2008), there appears to be a correlation with the items about the preschool teachers' feeling of competence

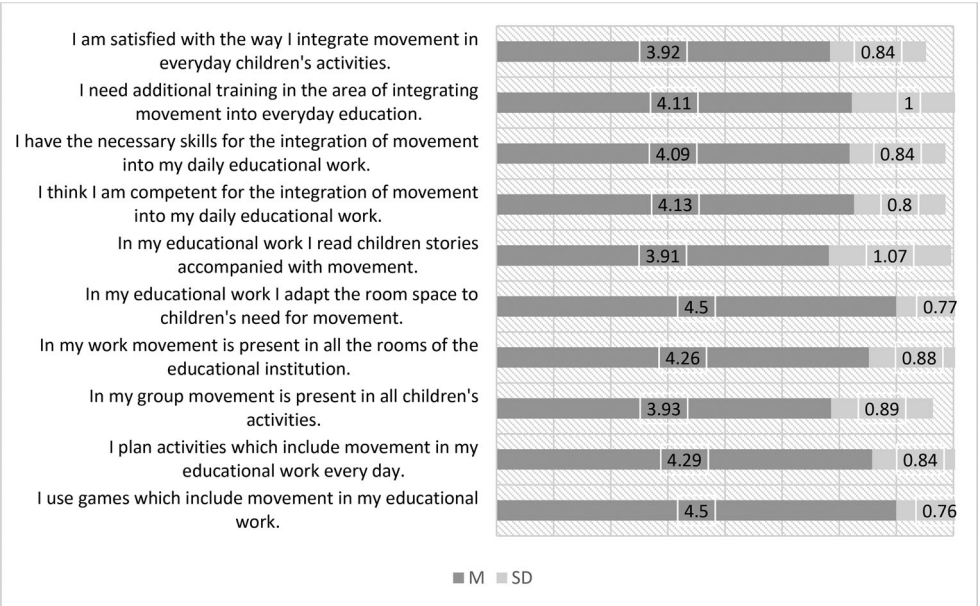


**Figure 1.** Representation of descriptive data for preschool teachers' opinion scale about their own feeling of competence for the integration of movement in children's everyday activities.
Source: Author research, data that are analised in SPSS.

**Table 1.** Comparison of preschool teachers' thoughts about movement regarding the number of in-service years.

| Items | $r_s$ | $p$ |
|---|---|---|
| Movement increases the organism's resilience to unfavourable external influences. | 0.018 | 0.862 |
| *Movement has positive effects on the overall child's development* | −0.264 | **0.008** |
| Movement enables children's socialisation from an early age. | −0.116 | 0.252 |
| Movement increases the child's capacity to bear stress. | 0.013 | 0.901 |
| Everyday movement at an early age prevents numerous diseases. | −0.071 | 0.482 |
| Movement is the primary child's necessity. | −0.127 | 0.209 |
| Movement contributes to the child's quality of life. | −0.119 | 0.239 |

Source: Author research, data that are analised in SPSS.

for the integration of movement. The authors conducted a research with the topic 'Teachers' Pedagogical (In)competence' in which teachers self-assessed their own opinion about their pedagogical competence. The obtained results showed that most of the teachers felt and saw themselves as pedagogically competent, but there were those who assessed their competence as weaker, and the reasons for that were different – from the insecurity in their own educational work, to the insufficiently gained competences during their formal education, i.e. study. The comparison of the participant's answers about their feeling of competence for the integration of movement led to similar results. Most of the preschool teachers assessed themselves as competent for the integration of movement in children's everyday activities in early and preschool education institutions, while there were some preschool teachers who assessed themselves as less competent. The next part of this paper determined if there was a correlation between the competence assessment and certain preschool teachers' socio-demographic characteristics (Ljubetić & Kostović Vranješ, 2008).

Table 1 presents the correlation of preschool teachers' thoughts about movement regarding the number of in-service years. The conducted analysis shows that there is a statistically significant correlation ($p < 0.05$) of the item *Movement has positive effects on the overall child's development* with the number of in-service years.

The correlation equals −0.264 which leads to the conclusion that correlation is low between the in-service years and thoughts about the item *Movement has positive effects on the overall child's development*. Given that the correlation is negative, it can be concluded that the more in-service experience participants have, the less they agree with the statement that *movement has positive effects on the overall child's development*. The other scale items did not show the existence of a statistically significant correlation between the preschool teachers' thoughts about movement and the number of in-service years. The research results can be correlated to the research conducted by Iveković (2018) about the preschool teachers' attitudes to children's physical exercising, i.e. movement. The conducted research showed that there was a statistically significant difference among preschool teachers with more or less in-service experience. Preschool teachers with more in-service experience assessed children's physical activity, i.e. movement as more important than preschool teachers with less in-service experience. The difference between the research conducted by Iveković (2018) and the present research can possibly be explained by the fact that preschool teachers with less in-service experience are probably younger preschool teachers who gained more knowledge about movement and its importance during their formal

**Table 2.** Comparison of preschool teachers' thoughts about their own feeling of competence and statements regarding their practice and the number of in-service years.

| Items | $r_s$ | $p$ |
|---|---|---|
| I use games which include movement in my educational work. | −0.118 | 0.240 |
| I plan activities which include movement in my educational work every day. | −0.053 | 0.603 |
| In my group movement is present in all children's activities. | 0.171 | 0.089 |
| In my work movement is present in all the rooms of the educational institution. | −0.037 | 0.716 |
| In my educational work I adapt the room space to children's need for movement. | −0.036 | 0.724 |
| In my educational work I read children stories accompanied with movement. | 0.119 | 0.240 |
| I think I am competent for the integration of movement into my daily educational work. | 0.047 | 0.641 |
| I have the necessary skills for the integration of movement into my daily educational work. | 0.099 | 0.328 |
| *I need additional training in the area of integrating movement into everyday education.* | −0.265 | **0.008** |
| I am satisfied with the way I integrate movement in everyday children's activities. | 0.099 | 0.328 |

Source: Author research, data that are analised in SPSS.

education at the early and preschool education study, and therefore they agree more with the items found in the scale about movement. It is possible that preschool teachers who have more in-service experience express less agreement with the items found on movement scales due to their insufficient knowledge about movement and the benefit it has on the child's overall development. It is a fact that preschool teachers who attained formal education earlier (college level) gained basic information about child development. However, by advances brought into formal education, preschool teachers are offered a larger corpus of knowledge about early and preschool education, as well as child development, encompassing also the importance of movement. In line with that, it is to be assumed that preschool teachers who have less in-service experience will agree more with the items about movement given in the movement scale.

Table 2 presents the results of the comparison of correlation between preschool teachers' thoughts about their own feeling of competence and statements regarding their practice and the number of in-service years. The analysis in the scale about preschool teachers' thoughts about their own feeling of competence shows that there is a significant correlation ($p < 0.05$) between the number of in-service years and thoughts about the item *I need additional training in the area of movement integration in everyday education.*

The correlation equals −0.265 which implies that the correlation between the number of in-service years and the named item is low. Furthermore, the correlation is negative, which leads to the conclusion that the more in-service experience preschool teachers have, the less they agree with the item *I need additional training in the area of integrating movement into everyday education.* There appeared no statistically significant correlation with the number of in-service years for the other scale items.

Practice often echoes the opinion that preschool teachers who work in early and preschool institutions for a longer time are considered more competent due to the fact that by informal learning, present in their everyday work, preschool teachers empower and advance their competencies in a usually spontaneous way (Blanuša Trošelj et al., 2020). The integration of movement in children's everyday activities can be said to be a relatively new term used in educational work, but it shows a tendency to be used more often in order for children's overall development to happen. In line

**Table 3.** Comparison of preschool teachers' thoughts about their own feeling of competence regarding their participation in educations on the conduction of sports activities with children or movement integration.

| Items | U | Z | P |
|---|---|---|---|
| I use games which include movement in my educational work. | 1126.000 | −0.612 | 0.540 |
| I plan activities which include movement in my educational work every day. | 986.500 | −1.644 | 0.100 |
| *In my group movement is present in all children's activities.* | 837.500 | −2.742 | **0.006** |
| In my work movement is present in all the rooms of the educational institution. | 1092.500 | −0.824 | 0.410 |
| In my educational work I adapt the room space to children's need for movement. | 1160.000 | −0.330 | 0.741 |
| In my educational work I read children stories accompanied with movement. | 1033.500 | −1.232 | 0.218 |
| *I think I am competent for the integration of movement into my daily educational work.* | 849.500 | −2.674 | **0.007** |
| *I have the necessary skills for the integration of movement into my daily educational work.* | 812.000 | −2.931 | **0.003** |
| I need additional training in the area of integrating movement into everyday education. | 1176.000 | −0.181 | 0.856 |
| I am satisfied with the way I integrate movement in everyday children's activities. | 952.000 | −1.877 | 0.061 |

Source: Author research, data that are analised in SPSS.

with that, the research results are not coherent to the fact that preschool teachers' competence is a developmental category built up by lifelong learning (Slunjski et al., 2006), not only by the number of in-service years, as was previously thought. Preschool teachers should, despite more in-service experience, undergo continuous additional training in the area of movement integration and have a need for it. Preschool teachers' professional development has become an imperative because they are constantly faced with the society's different demands, while the competencies necessary for good educational work have to be developed throughout their whole professional life (Fatović, 2016).

Table 3 presents the comparison of all items of the scale *Preschool teachers' thoughts about their own feeling of competence for the integration of movement* considering if preschool teachers participated in educations on the conduction of sports activities with children or movement integration. The Mann–Whitney test showed a statistically significant difference for a few items.

For the item *In my group movement is present in all children's activities* the results show a statistically significant difference ($p < 0.05$) between preschool teachers who participated in educations and those who did not. Preschool teachers who participated in educations on the conduction of sport activities with children or movement integration ($N = 40$, MR = 59.56) gave higher values to the item *In my group movement is present in all children's activities.* Furthermore, the item *I think I am competent for the integration of movement into my daily educational work* is also statistically significant ($p < 0.05$). Preschool teachers who participated in educations on the conduction of sport activities with children or movement integration ($N = 40$, MR = 59.26) assessed with higher values the degree of agreement with the aforementioned item which leads to the conclusion that they feel more competent for the integration of movement than preschool teachers who did not participate in any education on the conduction of sport activities with children. The last statistically significant item on the scale about preschool teachers' thoughts about the feeling of their own competence for movement integration is *I have the necessary skills for the integration of movement into my daily educational work* ($p < 0.05$). As many as 40 preschool teachers who participated in educations on the conduction of sport activities or movement integration (MR = 60.20) marked with higher values, i.e. more positively, this item. There were no statistically significant differences for the other items.

In the analysis of the statistically significant items, it can be concluded that the result of such preschool teachers' thoughts is narrowly linked to the participation of preschool teachers in educations, which conforms to former theories. Lifelong learning is important for all areas of life – both personal and professional – and for their advancement. It is clearly visible that competencies become advanced by various forms of education which results in a better feeling about one's own competence, in this case the preschool teachers'. After completing their studies preschool teachers usually enter the educational practice immediately. This represents the beginning of their professional development which is an obligation which all preschool teachers are obliged to follow. Preschool teachers often choose themselves the educations they want to participate in according to their personal interests. There they develop their knowledge, skills and professionalism, i.e. they empower and additionally develop their competencies (Blanuša Trošelj et al., 2020). In the research conducted among preschool teachers by Blanuša Trošelj (2018), preschool teachers assessed that during their study, when compared to other areas and competencies, they mostly developed the competencies of *Understanding the importance and influence of games on the children's growth and development* and *Possession of knowledge and skills in the area of kinesiology to the level necessary for successful work*. Nevertheless, modern times and the use of contemporary technology consequently lead to insufficient movement in childhood (Vujičić et al., 2020). It can be assumed that preschool teachers, being aware of that fact, participate more and more in educations on movement, develop their competencies for movement, and integrate it in everyday children's activities in early and preschool education institutions since that has become the 'demand' of the 21st century.

## Conclusion

It has been established that regarding certain sociodemographic characteristics, preschool teachers' opinions about movement in an early and preschool education institution differ with regard to their years of experience in some items. The more in-service experience participants have, the less they agree with the statement that *movement has positive effects on the overall child's development.* The other scale items did not show the existence of a statistically significant correlation. Preschool teachers with more in-service experience need additional training in the area of integrating movement into everyday education more than preschool teachers with less experience. Moreover, preschool teachers who completed additional education feel significantly more competent for the integration of movement into their everyday educational work. The results are directed toward the importance of raising awareness on the significance of lifelong learning for a quality educational practice where preschool teachers will be more faced with the new challenges of contemporary ages.

It can be concluded that the need for the integration of movement in children's everyday activities in kindergarten has become an imperative of contemporary education. Given that there is a small number of conducted research on movement integration and the sole preschool teachers' competence for movement integration, it would be useful to direct attention to this fact in further research which will significantly

contribute to an improvement in the quality of the educational practice. The research results show that some preschool teachers have never participated in educations on the conduction of sport activities with children or movement integration, so it can be concluded that early and preschool education institutions should direct preschool teachers' professional training to this extremely important area of children's development.

## Disclosure statement

In accordance with Taylor & Francis policy and our ethical obligation as researchers, we are reporting that we have no potential competing interest.

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