

REPRESENTATION OF MOVEMENT IN ALTERNATIVE CURRICULA OF EARLY AND PRESCHOOL EDUCATION: THE CASE OF THE REPUBLIC OF CROATIA

VILKO PETRIĆ,¹ IVONA TOMÉE,² SANJA LJUBIČIĆ¹

¹ University of Rijeka, Faculty of Teacher Education, Rijeka, Croatia
vilko.petric@uniri.hr, sanja.ljubicic@uniri.hr

² Kinedrgarten Katarina Frankopan, Krk, Croatia
ivona.tomee@student.uniri.hr

The aim of the work was to analyse the representation of movement in alternative curricula of early and preschool education and to compare it with the level of representation of movement in the Croatian curriculum. The research used the method of content analysis and compared the curricula of kindergartens where Montessori, Waldorf, Agazzi programmes were implemented to those applying regular programmes. The Chi-squared test was used to determine the significance of the differences between the researched curricula. A statistically significant difference in the overall representation of movement was found between alternative programmes and the Croatian curriculum, while no statistically significant difference was found when comparing alternative curricula. Movement is significantly more represented in alternative curricula compared to the Croatian curriculum for early and preschool education. For alternative pedagogies, movement is one of the key segments of a child's development, and as such, it is strongly represented in educational work.

DOI
[https://doi.org/
10.18690/um.pef.2.2024.24](https://doi.org/10.18690/um.pef.2.2024.24)

ISBN
978-961-286-899-4

Keywords:
movement,
alternative curriculum,
Croatian curriculum,
child,
early and preschool age



University of Maribor Press

DOI
[https://doi.org/
10.18690/um.pef.2.2024.24](https://doi.org/10.18690/um.pef.2.2024.24)

ISBN
978-961-286-899-4

Ključne besede:
gibanje,
alternativni kurikulum,
hrvaški kurikulum,
otrok,
zgodnja in predšolska
starost

ZASTOPANOST GIBANJA V ALTERNATIVNIH KURIKULUMIH ZA PREDŠOLSKO VZGOJO: PRIMER REPUBLIKE HRVAŠKE

VILKO PETRIĆ,¹ IVONA TOMÉE,² SANJA LJUBIČIĆ¹

¹ Univerza v Reki, Pedagoška fakulteta, Reka, Hrvaška
vilko.petric@uniri.hr, sanja.ljubicic@uniri.hr

² Vrtec Katarine Frankopan, Krk, Croatia
ivona.tomee@student.uniri.hr

Namen dela je bil analizirati zastopanost gibanja v alternativnih kurikulumih zgodnje in predšolske vzgoje in jo primerjati s stopnjo zastopnosti gibanja v hrvaškem kurikulumu. V raziskavi smo uporabili metodo vsebinske analize in primerjali kurikulume vrtcev, kjer se izvajajo programi Montessori, Waldorf, Agazzi, s tistimi, ki uporabljajo redne programe. Za ugotavljanje pomembnosti razlik med raziskovanimi učnimi načrti smo uporabili test hi-kvadrat. Med alternativnimi programi in hrvaškim kurikulumom je bila ugotovljena statistično značilna razlika v skupni zastopnosti gibanja, medtem ko pri primerjavi alternativnih kurikulumov ni bilo statistično značilne razlike. Gibanje je bistveno bolj zastopano v alternativnih učnih načrtih v primerjavi s hrvaškim učnim načrtom za zgodnjo in predšolsko vzgojo. Za alternativne pedagogike je gibanje eden ključnih delov otrokovega razvoja in je kot takšno močno zastopano v vzgojnem delu.



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1 Introduction

The subject of this research are the alternative curricula of early and preschool education that are present in the Republic of Croatia and are implemented in certain early education institutions. According to the National Pedagogical Standard (2008), these are alternative educational programs based on the concepts of Montessori, Waldorf and Agazzi pedagogy. Montessori pedagogy is based on the philosophy of the child's natural development, where children discover their environment and themselves through movements and sensory experiences, while the educator's task is to provide an appropriate environment for stimulating physical, cognitive and socio-emotional development (Garmaz & Tomšević, 2018). Waldorf pedagogy is based on the anthroposophical principles of Rudolf Steiner and places emphasis on the freedom and integral development of the child, where the educator recognizes and supports the child's interests with the aim of realizing the child's full potential (Aljabreen, 2020). Agazzi pedagogy emphasizes the importance of the environment in which the child spends time. The environment should be filled with love and warmth, and adapted to the needs and interests of children. It believes that the movement is the children's primary interest (De Beni, Šimović & Gasparini, 2013).

Movement, that is moving, is a muscular activity implying the biotic need of man, which is necessary for him to live (Petrić, 2021). It is a natural and lifelong activity that should be encouraged from birth (Jones & Okely, 2011). Movement is a prerequisite for a better quality of life and is the basis of every child's growth (Petrić, 2022) because it affects the overall development of the child, including cognitive, communication and socioemotional aspects of development (Sollerhed, Olesen, Froberg et al., 2021). Movement activates many mental abilities, connects and establishes new information and experiences in the neural network, and represents an important role and influence in the expression of knowledge and understanding (Vujičić, Peić and Petrić, 2020). In children, movement is emphasized from birth (Vujičić & Petrić, 2021), that is, children receive stimuli from their environment through movement and sensory experience, which creates neural connections in the brain, consequently leading to learning (Hannaford, 2007). Movement is directly related to the development of the brain and plays a major role in the learning process, more specifically, movement scientifically affects the formation of synapses in the child's brain (Jensen, 2005). Therefore, it is extremely important to create conditions in which the child can move naturally (Ali, McLachlan, Mugridge et al., 2021).

Children are more active in the learning process when they move and participate in active play, in contrast to passive sitting and minimal use of their own body when participating in activities (Alharbi & Alzahrani, 2020). The results of numerous studies on children's physical activity show the importance and benefits of movement in early childhood (Sollerhed, Olesen, Froeberg et al., 2021; Lu and Montague, 2016; Senol, 2021; Díaz-Quesada, Gálvez-Calabria, Connor et al., 2022; Wang, 2022; Sollerhead, 2022).

Therefore, the aim of this paper is to determine the level of representation of movement in alternative early and preschool education curricula implemented in specific early education institutions in the Republic of Croatia, and to compare it with the level of representation of movement in the Croatian curriculum for early and preschool education (CCEPE).

2 Methods

2.1 Object, research variables and research protocol

In the first step of the research, using the method of content analysis, internet sources of alternative curricula in institutions for early education in the Republic of Croatia were investigated. Based on the criterion that the curricula of alternative programs, available on the Internet and present in the educational practice of the Republic of Croatia, three alternative (pedagogical) curricula were singled out: Montessori pedagogy, Waldorf pedagogy and Agazzi pedagogy.

What followed was the analysis of the curricula applied in kindergartens where the listed alternative programs were implemented. According to the analysis, the following elements were distinguished according to the criterion of the representation of movement: principles of educational work focused on movement, motor-kinesiological content and spatial-material organization related to movement. The principles of educational work refer to the basic principles on which a certain alternative curriculum is based, and are closely related to the importance of movement. Motor and kinesiology contents include a number of different motor contents that are present in the physical activities of individual alternative curricula. Spatial-material organization takes into consideration the characteristics of spatial

planning and the diversity of materials in the studied alternative curricula of early and preschool education.

In the third step of the analysis, the mentioned elements were investigated according to their specificities, and it was recorded whether or not there was a representation of a certain variable. These are presented in the Results chapter.

2.2 Statistical data analysis

In data processing, a combination of qualitative and quantitative methods was used, that is, the data were analysed with the SPSS Statistics 21 program. The results were expressed in percentages of total frequencies and presented in the form of tables and graphs. The content analysis method and Chi-squared test were applied. The level of significance of differences in percentages was tested at the $p < 0.05$ level.

3 Results

The following presents and explains the research results in tabular and graphical form.

Frequencies of representation of educational principles focused on movement are shown in Table 1. Most variables are not represented in all curricula, except Emphasis on integral development of the child. In the Montessori and Waldorf curriculum, movement is integrated into children's activities, while in Agazza and the standard curriculum, the mentioned variable is not present, which implies a 50 % presence of the mentioned variable in the researched curricula. Movement is the basis for further development only in the Montessori curriculum, hygiene is a prerequisite for healthy physical development of the child in the Agazzi curriculum, while the educator is a role model in promoting the importance of physical movement in Waldorf pedagogy. The level of representation of individual variables in relation to the principles of educational work focused on movement and expressed in percentages of total frequencies. The same level of representation (60 %) of individual variables is observed in the Montessori and Waldorf curriculum, while the percentage of representation of variables in the Agazzi curriculum is 40 %. The lowest level of representation of variables related to the principles of educational work focused on movement is present in CCEPE (20 %).

Table 1: The frequencies of representation of educational principles oriented toward movement

Educational principles oriented toward movement	Montessori	Waldorf	Agazzi	Croatia
Emphasis on children's integral development	1	1	1	1
Movement is the basis for children's further development	1	0	0	0
Movement is integrated in children's activities	1	1	0	0
Hygiene is the prerequisite for healthy physical development of children	0	0	1	0
The educator is a role model in promoting the importance of physical movement	0	1	0	0
Overall representation expressed in %	60.00 %	60.00 %	40.00 %	20.00 %

Table 2: Frequency of representation of motor – kinesiological contents

Motor – kinesiological contents	Montessori	Waldorf	Agazzi	Croatia
Stimulating physical exercising	1	1	1	0
Stimulating physical exercising outdoors	1	1	1	0
Bothmer gymnastics	0	1	0	0
Eurhythmics – aesthetics of movement	0	1	0	0
Organised physical education activity	0	0	0	1
Motor content stimulating the development of gross motor skills	1	1	1	1
Motor content stimulating the	1	1	1	1

Motor – kinesiological contents	Montessori	Waldorf	Agazzi	Croatia
development of fine motor skills				
Practical life exercises	1	0	1	0
Walking on the line (ellipsis) exercises / balance exercises	1	0	0	0
Exercises for carrying different objects	1	0	1	0
Exercises for opening and closing objects	1	0	1	0
Jump rope	0	1	0	0
Motor content stimulating the development of coordination	1	0	1	0
Creative activities for the stimulation of fine motor skills development	0	1	0	0
Physical exercising with storytelling	0	1	0	0
Overall representation expressed in %	60.00 %	60.00 %	53.33 %	20.00 %

Table 2 shows the results of the representation of variables in the framework of motor and kinesiology content. Motor content for encouraging the development of gross and fine motor skills is represented in all researched curricula, followed by stimulating physical exercise in closed and open spaces in all three alternative curricula. Interestingly, organized physical activity is represented only in CCEPE. The level of representation of individual variables in relation to the motor - kinesiological content of educational work is expressed in percentages of total frequencies. The highest percentage is found in the Montessori and Waldorf curriculum (60 %), a slightly lower percentage of representation of motor-kinesiological content is visible in the Agazzi curriculum (53.33 %), while the CCEPE representation of motor-kinesiological content is only 20 %. When compared to alternative curricula, this is a three times lower value.

Table 3: Frequency of representation of the spatial-material variables in the organisation of movement

Spatial-material organisation linked to movement	Montessori	Waldorf	Agazzi	Croatia
The mirror as a tool for the stimulation of coordination	0	0	1	0
Standardised Montessori material	1	0	0	0
Special space for movement	1	0	1	0
Availability of materials	1	1	1	1
Emphasis on order in the space	1	0	1	0
Materials inviting the child to activity and movement	1	1	1	0
Furniture is adapted in size to children and their strength	1	1	1	1
More pieces of the same material	0	1	1	1
Clear, open space which enables and stimulates movement	1	1	0	0
Unshaped natural materials in their original shape	0	1	0	0
Overall representation expressed in %	70.00 %	60.00 %	70.00 %	30.00 %

Table 3 shows the frequency of representation of variables for the element of spatial-material organization that is related to movement. As in the previous researched elements, there is a very small number of variables that are represented in all curricula. According to the obtained results, only the availability of materials and child-friendly furniture is present in all curricula, while other variables are present differently in individual ones. The Croatian curriculum for early and preschool education is the only one in which every represented variable is also present in one of the alternative curricula; considering the element of spatial-material organization related to movement, certain variables are again differently represented in the researched curricula. The level of representation in certain spatial-material variables

in the organization of movement is expressed in percentages of total frequencies. The Montessori and Agazzi curriculums have the highest frequency of representation (70 %). As in all previous elements, the percentage of total frequencies is the lowest in the standard curriculum (30 %).

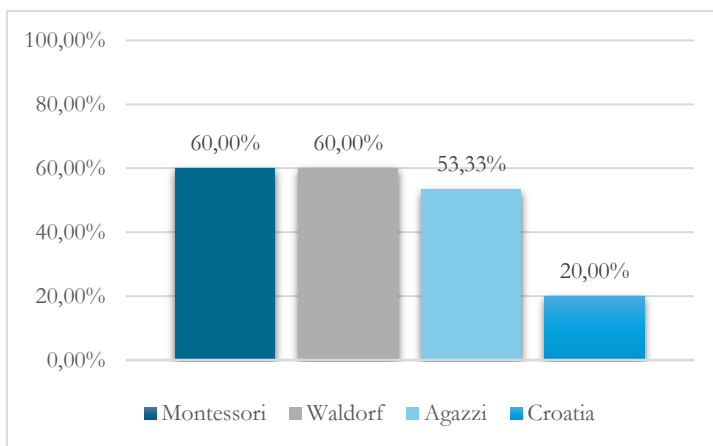


Chart 1: Overall percentage of movement representation

Chart 1 shows the overall average of the representation of movement, more precisely the average of the representation of all researched variables in all isolated elements (principles of educational work focused on movement, motor-kinesiological content and spatial-material organization related to movement). According to the obtained total average, it can be seen that the highest level of movement representation is in the Montessori curriculum (63.33 %), followed by the Waldorf curriculum (60.00 %) and then the Agazzi curriculum (54.44 %). The largest deviation in the obtained overall average is present at CCEPE, where the representation of all variables related to movement is 23.33 %.

Table 4: Differences in the total representation of movement in alternative programmes

chi - square	df	p
0.682	2	0.711

In Table 4, it can be seen that there is no statistically significant difference in the total representation of movement in alternative curricula. It can be said that it is equally represented in the Montessori, Waldorf and Agazzi curriculum.

Table 5: Differences in the total representation of movement between alternative programmes and the full-time programme Early and Preschool Education

chi - square	df	p
20.772	3	0.0001

However, when we compare the total representation of movements in all alternative curricula and the total representation of movements in CCEPE (Table 5), we can see that there is a statistically significant difference between them in favour of alternative curricula. In other words, statistically significantly more movements are integrated in alternative curricula compared to CCEPE.

4 Discussion

The obtained research results show that all the analyzed curricula, which are related to the importance of movement, are represented differently in individual curricula. The Montessori and Waldorf curriculums are particularly noteworthy here, as they show the highest percentage of representation of educational principles focused on movement, and in both curricula, emphasis is placed on the integral development of the child and the integration of movement into children's activities. These results are consistent with all previous research on the representation of movements in alternative curricula (Pate et al., 2014; Byun et al., 2013; Rusănescu et al., 2018; Stowell, 2014; Sobo, 2015; Bhatia et al., 2015) where there is a high level of representation of movement in educational work. However, what is stated in the aforementioned research as the reason for the high level of representation of movement is precisely the educational principles that are aimed at movement. In Montessori and Waldorf pedagogy, the importance of movement for the child is emphasized the most, the integral development of the child is encouraged, movement is set as the basis of child development, and it is integrated into numerous children's activities. Therefore, most of the educational principles on which Montessori and Waldorf pedagogy are based are aimed at movement in early childhood. In order for movement to be represented in educational work, it is crucial to understand the principles related to the movement the curriculum is based on, that is, how much importance is attached to movement itself. Therefore, this represents the basis for including movement in everyday educational work. It is necessary to first understand why movement is crucial for the optimal growth and development of a child and, in accordance with this understanding, build principles

that will be closely related to the importance of movement. When such a foundation is created, then the educational work is further built and shaped in accordance with the established principles. It was from such principles that Maria Montessori and Rudolf Steiner started. In their philosophy they emphasized the importance of children's movement and sensory experience for the realization of a child's full potential. At the same time, the educational principles on which the mentioned alternative curricula are based are set in accordance with children's nature and their way of learning, such as, for example, the integration of movement into educational work. Thus, the Montessori and Waldorf curriculum are based on educational principles that promote movement, but which are also in line with children's natural development.

Furthermore, when observing the results in the area of representation of motor-kinesiology content in the analysed curricula, it is observed that most motor-kinesiology content is represented differently in individual curricula. The majority of motor-kinesiology content is present in only one or two alternative curricula, while only a few isolated motor-kinesiology contents are present in all alternative curricula and all curricula in general. The results indicate the specificity of each individual alternative curriculum, that is, it is noted that each individual approach includes movement in a different, unique way. For example, in the Waldorf curriculum, movement is represented through song and the telling of folk stories in the morning circle, where the activity is completed with body movements and finger play (Stowell, 2014). According to research conducted by Sobo (2015), in some Waldorf institutions, children cut carrots, sew, knead dough, garden, dig, and the like. Through all the mentioned activities, the child is extremely physically active, and this way of integrating movement into the activity is specific exclusively to Waldorf pedagogy, where the child tries to be in contact as much as possible with unformed natural material that is in its original form. Then, in the Montessori curriculum, movement is represented through the encouragement of practical life activities that were first presented by Maria Montessori. It has been investigated that practical life activities have a significant effect on improving the fine motor skills of children in kindergarten (Rule & Stewart, 2002). On the other hand, the Agazzi curriculum is specific in that a mirror is used as a tool for encouraging hand-eye coordination (Gardani, 2012). The mentioned specificities of motor-kinesiological content in alternative curricula represent a valuable source of ideas and suggestions for enriching CCEPE. If certain features from all three alternative curricula were

implemented in CCEPE, a wealth of different ways of implementing movement in the educational process would be obtained. In this way, movement would become the main guide in the organization of educational work, children would be more active in the learning process, the child would be approached as a whole being that learns in an integrated way, and the educator could monitor the needs of children and support their interest more easily. Thus, educational work would be in accordance with the principle that movement is the basis of child development and that it should be encouraged from the earliest age as a prerequisite for healthy growth and development of the child, which is the goal of every early childhood education institution.

Based on the results of the research, an unequal representation of spatial-material variables can be observed in the organization of movement, where the Montessori and Agazzi curricula achieve the highest levels of representation of the mentioned variables. In particular, Montessori pedagogy has always been recognized for its high-quality and stimulating spatial-material organization, and in fact this is one of the key specificities of the Montessori curriculum when it talks about movement. Precisely, the authors Pate et al. (2014), as Byun et al. (2013), point out that the reason why children are more physically active in the Montessori program is due to the stimulating structure of space and materials. The Montessori curriculum advocates spacious and open rooms containing materials that encourage children to move (Pate et al., 2014). The positive impact of using special Montessori materials on the motor skills of early and preschool children is also visible in numerous other studies (Bhatia et al., 2015; Rule & Stewart, 2002; Prendergast, 1969; Stodolsky & Karlson, 1972). The obtained results, as well as the results of the aforementioned research, clearly show the importance of space in early childhood education institutions. The encouraging and dynamic organization of space creates numerous opportunities for children to learn and move. Such a structured space invites the child to be active and participate in the educational process, which is one of the prerequisites for encouraging movement in educational work. With a richly equipped environment, children are given more opportunities to create interactions with the environment, independence in learning is encouraged, their interests are respected, and the basis for all this is movement, only possible in a rich stimulating environment.

According to the research results, there is a statistically significant difference in the total representation of movement between alternative curricula and CCEPE, while there is no statistically significant difference in the total representation of movement among the alternative curricula themselves. The above data indicate insufficient representation of movement in the standard curriculum compared to the analysed alternative curricula. That movement is underrepresented in CCEPE is also shown by the research conducted by Vujičić, Petrić and Novak (2019), where the differences between the stimulating spatial environment that promotes movement and the currently standard rooms in early education institutions were shown (Vujičić & Petrić, 2021). According to the research, it is evident that children are not encouraged to move in standard decorated rooms, more precisely, there is a large amount of furniture that takes up most of the space, desks force children to sit and do sedentary activities, the corridor is difficult to walk through, and the open area of the kindergarten is poor in equipment. In addition to the arrangement of the space, the research emphasizes that physical activities are mostly of an organized type, carried out exclusively according to the instructions and under the guidance of preschool teachers. On the other hand, author Hannaford (2007) cites Rudolf Steiner and Maria Montessori as prominent pedagogical experts who emphasized the extreme importance of movement for the child's development and learning process.

It is assumed that the obtained differences in the level of movement representation between alternative curricula and CCEPE come because in alternative pedagogies the importance of movement is still nurtured and encouraged. Movement is considered the main driver of a child's complete development (Petrić, 2021) and represents one of the main backbones of educational work in alternative pedagogies. The principles of educational work are based on such values, the motoric-kinesiological content is designed according to this, and the spatial-material environment is structured accordingly. However, CCEPE does not yet fully recognize the value of movement and the effect it has on a child's learning and development. It is believed that this is the reason for a low level of representation of movement according to the principles of educational work focused on movement, as well as a smaller number of motor-kinesiological content is present in CCEPE, one of which is precisely an organized activity guided by preschool teachers where the child is passive. The activities are not in accordance with the child's nature and the child's current interests and needs are not respected.

5 Conclusion

In the analyzed alternative curricula, movement is equally represented in all studied elements and statistically significantly more compared to the CCEPE of early and preschool education. The article shows how different alternative curricula experience movement and how they "live" in early childhood education institutions. New ideas and possibilities of integrating movement into educational work would be opened up by introducing certain specificities of alternative curricula in CCEPE.

One of the shortcomings of the research is that the results rely exclusively on the theoretical analysis of the curricula content, so for future research it is suggested to determine how much movement is truly represented in practice. Alternative conceptions in the system of early and preschool education in the Republic of Croatia are often marginalized, and their importance is not sufficiently recognized. In their educational philosophy, they place movement as a priority, so it is not surprising that movement is significantly represented in all domains of their educational work. First of all, it is necessary to form one's own philosophy of education in which one of the foundations will be the importance of movement. After that, by implementing individual specificities from each alternative curriculum, an environment in which the child will have numerous opportunities for movement can be ensured.

The research results provide arguments for changes in the education system, while critical thinking about practice and recognition of the diversity of pedagogical approaches can stimulate innovations and improvements that will have a positive impact on future generations.

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