REVIJA ZA ELEMENTARNO IZOBRAŽEVANJE
JOURNAL OF ELEMENTARY EDUCATION

ISSN 2350-4803 (SPLET/ONLINE)
ISSN 1855-4431 (TISK/PRINT)

Revija za elementarno izobraževanje

NASLOV UREDNIŠTVA

Revija za elementarno izobraževanje, Uredništvo revije Revija za elementarno izobraževanje
Koroška cesta 160, SI-2000 Maribor, Slovenija, e-pošta: rei.pef@um.si, http://rei.um.si

ZALOŽNIK

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Journal of Elementary Education

EDITORIAL OFFICE ADDRESS

Journal of Elementary Education, Editorial Board of Journal of Elementary Education
Koroška cesta 160, SI-2000 Maribor, Slovenija , e-pošta: rei.pef@um.si, http://rei.um.si

PUBLISHED BY

University of Maribor Press
Slomškov trg 15, 2000 Maribor, Slovenia
e-mail: zalozba@um.si, http://press.um.si/, http://journals.um.si/

Articles appearing in this journal are abstracted and indexed in: SCOPUS (Elsevier Bibliografhic Databases), DOAJ, ERIH PLUS**,** EBSCO (EBSCOhostweb), Ulrich`s Periodicals Directory, IBZ (Internationale Bibliographie der Zeitschriftenliteratur), Proquest, dLib.si, DKUM, COBISS (Co-operative Online Bibliographic System and Services).

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Revija za elementarno izobraževanje
Journal of Elementary Education

Volume 17 **Number 1** **March 2024**

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REVIJA ZA ELEMENTARNO IZOBRAŽEVANJE
JOURNAL OF ELEMENTARY EDUCATION
Vol. 17, No. 1, pp. 1–18, March 2024

UNDERSTANDING THE CHALLENGES ASSOCIATED WITH COOPERATIVE LEARNING: AN EMPIRICAL STUDY WITH PRIMARY SCHOOL TEACHERS

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Potrjeno/Accepted
29. 11. 2023

Objavljeno/Published
29. 3. 2024

Abstract/Izvleček

Cooperative learning includes effective methods for increasing student learning in primary school and heterogeneous classrooms. However, teachers do not use it very frequently. The present interview study investigates on which levels of the educational system primary teachers perceive difficulties associated with these methods to be located, and what kinds of conflicting demands they associate with it. The study provides important insights into how challenges related to cooperative learning may be addressed.

Keywords:
cooperative learning, implementation difficulties, interview study, primary school, teachers

Razumevanje izzivov, povezanih s sodelovalnim učenjem: empirična študija z osnovnošolskimi učitelji

Sodelovalno učenje vključuje učinkovite metode za izboljšanje učenja učencev v osnovni šoli in heterogenih razredih. Vendar ga učitelji ne uporabljajo pogosto. V pričujoči raziskavi smo z intervjujem raziskovali, na katerih ravneh izobraževalnega sistema se po mnenju osnovnošolskih učiteljev nahajajo težave, povezane s temi metodami, in kakšne nasprotujoče si zahteve povezujejo z njimi. Študija ponuja pomemben vpogled v to, kako bi lahko reševali izzive, povezane s sodelovalnim učenjem.

Ključne besede:
sodelovalno učenje, težave pri izvajanju, študija intervjujev, osnovna šola, učitelji

UDK/UDC
373.3.091.3

DOI https://doi.org/10.18690/rei.2832

Introduction

Cooperative learning (CL) includes teaching methods that are frequently propagated - especially against the backdrop of current challenges in primary schools, such as dealing with heterogeneous learning conditions (Büttner, Warwas, and Adl-Amini, 2012). However, implementing CL seems to be challenging for teachers; it is comparatively little used in school practice (Buchs et al., 2017). Although several previous studies have already indicated the various difficulties associated with CL from the teacher's perspective (e.g., classroom management, lack of time resources; Ghaith, 2018; Völlinger, Supanc, and Brunstein, 2018), relatively few studies have investigated the perspective of primary school teachers using open-ended questions. Analysis of open-ended questions, such as those used in interviews, have the advantage over close-ended survey questions in that they make it possible to examine difficulties in a more comprehensive and unbiased manner. Furthermore, previous studies on difficulties have rarely investigated the level of the educational system (e.g., the school level, the individual teacher level) on which these challenges exist and which conflicting demands might explain their existence. The present study tries to close these research gaps. It aims at exploring implementation difficulties associated with CL and their background in more detail from a primary school teacher's perspective. Having a better understanding of these difficulties and their background will make it easier to develop appropriate approaches for dealing with them.

Theoretical background

Cooperative learning (CL) is challenging for both teachers and students. It includes methods in which the school class is divided into small groups with the goal of facilitating collaborative learning activities that lead to maximum learning success for all group members (Johnson and Johnson, 1999; Büttner, Warwas, and Adl-Amini, 2012). Although the term "cooperative learning" is not uniformly defined, there is agreement that not every form of group work can be equated with CL (Lipowsky, 2009). CL requires certain conditions that are often described as the basic elements of CL and have been shown to be highly relevant for the effectiveness of these methods (Veenmann et al., 2002). The two most important elements are positive interdependence and individual accountability.

Positive interdependence exists when all group members depend on each other for goal achievement. Through individual accountability, each group member's contribution to the overall outcome is clearly identifiable (Johnson and Johnson 2009, Slavin, 1995). Moreover, group members must exhibit appropriate social skills, engage in supportive interaction with one another, and reflect the group process (Johnson and Johnson, 2009). In classroom practice, CL is often implemented using specific strategies (e.g., the jigsaw method) to establish these conditions.

The effectiveness of CL can be explained by socio-constructivist learning theories. According to these theories, interaction with other (more competent) persons, in the context of which meanings are jointly negotiated, is central to learning (Lipowsky, 2009; Vygotsky, 1978). From a motivational psychology perspective, CL plays a crucial role in learning because it satisfies the basic human psychological needs for autonomy and relatedness (Cohen, 1994; Deci and Ryan, 1993). The importance of CL for social integration and mutual acceptance in heterogeneous learning groups is further justified by the contact hypothesis (Allport, 1954), which states that frequent contact with members of other groups (e.g., ethnic minorities) reduces prejudice towards those groups.

Findings from meta-analyses support the effectiveness of CL in terms of cognitive, motivational, and social learning outcomes compared to other forms of instruction, such as teacher-centred teaching, especially in primary school (Ginsburg-Block, Rohrbeck, and Fantuzzo, 2006; Kyndt et al., 2013). However, implementing CL appears to be challenging for teachers (Buchs et al., 2017). Although empirical evidence shows that teachers seem to value collaborative forms of learning (Völlinger, Supanc, and Brunstein, 2018), CL is still relatively rarely used in practice (e.g., Götz et al., 2005; Völlinger, Supanc, and Brunstein, 2018). For example, Buchs et al. (2017) found that only one-third of their surveyed primary school teachers used CL regularly. This points to the question of potential implementation difficulties.

Challenges in the implementation of CL

Several studies have already investigated difficulties with regard to CL from the teacher's perspective, focusing either on university teachers (Çelik, Aytın, and Bayram, 2013; McLeish, 2009) or on secondary school teachers (e.g., Ghaith, 2018; Gillies and Boyle, 2010; Gray and Otero, 2009; Karmina, 2018; Völlinger, Supanc, and Brunstein, 2018).

Only a few studies (all of which are questionnaire studies) have focused on primary school teachers (Buchs et al., 2017, Veenman, Kenter, and Post, 2000; and to some extent Götz et al., 2005). The study by Veenman, Kenter, and Post (2000) showed that primary school teachers mainly perceived difficulties in the area of monitoring and control. The other two studies with primary school teachers reported challenges in terms of lacking (time/material/space) resources for preparing and conducting CL. This is in line with the findings from studies with secondary and higher education teachers (e.g., Çelik, Aytın, and Bayram, 2013; Ghaith, 2018; Völlinger, Supanc, and Brunstein, 2018). Furthermore, learners' prerequisites, e.g., a lack of motivation or social skills, have frequently been reported as among the challenges (e.g., Gillies and Boyle, 2010; Völlinger, Supanc, and Brunstein, 2018). We are not aware of any interview study evaluating challenges regarding the implementation of CL in primary schools. Overall, the aforementioned studies rarely go beyond simply listing these difficulties. It remains unclear on which levels of the educational system (e.g., individual school, or class) and by which actors (e.g., teachers, or students) these difficulties could be addressed. An interview study with open-ended questions could help to explore this more deeply.

Locating the challenges on different levels of the educational system and its actors

The question of how the implementation of complex teaching methods can best succeed in practice is often associated with studying influencing factors on different levels of the educational system (Adl-Amini, 2018; Lendrum and Humphrey, 2012; Schrader et al., 2020). Schrader et al. (2020) build on utilization-of-learning-opportunities models (e.g., Helmke, 2012) to describe and classify such influencing factors on different levels of the educational system. In such models, a macro level (e.g., school laws and curricula) can be distinguished from a meso level (individual school), a micro level (teaching/classroom processes/methods), and an actor level (teachers/students). Implementation difficulties can thus be understood as the interaction of factors and actors at these different levels and need to be investigated accordingly. However, this has rarely been the case in studies on implementation difficulties regarding CL. Thus, it remains unclear, for example, whether the frequently mentioned difficulty of lacking time resources in CL should be considered a problem of the teacher's own time management (actor level), a school organizational problem (poor staff planning; meso level), a problem of the method itself (CL is per se more time-consuming; micro level), a problem of the educational

system (tight curriculum requirements; macro level) or several of these aspects. Only Karmina (2018) partially elaborates different areas (context, teachers, students) from which challenges can emanate. For example, time constraints and pressures were seen as a problem of both the educational system and the teachers themselves by the secondary school teachers in her study (Karmina, 2018). Given the lack of research into the levels on which difficulties with CL are located (and therefore could best be addressed), the present study investigates the levels of the educational system (with its actors) on which primary school teachers perceive such challenges to be located.

Difficulties as a result of conflicting demands

In order to explain the implementation difficulties associated with CL, conflicting demands on teachers have been emphasized in the literature. Pauli and Reusser (2000) describe the tasks of the teacher in CL by means of five different roles and point out that the implementation of CL is therefore fraught with decision conflicts. One role, for example, describes the teacher as a manager of the learning process in terms of effective class management, one who is supposed to enable the smooth running of the CL lesson. At the same time, the teacher is described as a "guide on the side" (Johnson and Johnson, 1999, p. 17), who takes a back seat and lets the students interact with each other. The accompanying dilemma between "intervening and not intervening" (Pauli and Reusser, 2000, p. 435) is described not only in terms of classroom management, but also in terms of learning process management and ensuring learning outcomes or group composition (see Buchs et al., 2017; Dann, Diegritz, and Rosenbusch, 1999; Haag, von Hanffstengel, and Dann, 2001). Thus, the role of the teacher or the goals of CL appear at least partially contradictory in CL. To our knowledge, empirical studies with teachers that systematically investigate which contradictions teachers themselves perceive in terms of CL are very limited (e.g., Dann, Diegritz, and Rosenbusch, 1999; Haag, von Hanffstengel, and Dann, 2001). Furthermore, such perceptions of conflicting demands have not been meaningfully linked to reported implementation difficulties in previous studies.

Research questions

We investigate the following research questions:

(1) Can the findings of previous studies on the difficulties associated with CL be replicated?

(2) On which levels of the educational system (curricula/laws – individual schools – classes – teaching methods – teacher/students) do primary school
(3) teachers localize the difficulties they mention concerning CL implementation?
(4) To what extent are the reported difficulties associated with conflicting demands concerning CL?

Method

Participants

Our research includes two studies. Study 1 draws on data from the project »Proliefs (Professional Beliefs)« 2011/2012 (Seiz et al., 2017). For recruitment, primary schools in Hesse, Germany were contacted via telephone. The interview lasted no more than an hour. Participating teachers gave their informed consent to data recording and analysis. Fourteen primary school teachers (13 female) were interviewed. The teachers differed in their professional experience (range: 2-27 years, M = 9.7 years), their studied subjects (Native language instruction: 11 teachers, Mathematics: 6 teachers, general studies: 5 teachers, Foreign languages: 5 teachers, Religion: 5 teachers) as well as in-service training on CL (ten teachers had not participated in any in-service training on the topic of "group work", one more than five years ago and three in the last two to five years). Since previous studies have pointed out the relevance of these teacher characteristics for the implementation of CL (e.g., Völlinger, Supanc, and Brunstein, 2018), the sample was considered suitable to allow investigation of the research questions.

In addition, data from primary school teachers who took part in a survey in 2022 as part of the project »KoaLa – Cognitivly Activating and Collaborative Learning Opportunities« were analysed (Study 2). Recruitment took place via social media and newsletters, and the teachers gave their informed consent to participate in the study. Forty-eight primary school teachers (40 female, 8 male) participated in the study. The teachers differed in age (range: 29-67 years, M = 46.63 years), their teaching subjects (Native language instruction: 39 teachers, Mathematics: 35 teachers, Foreign languages: 12 teachers, Religion: 13 teachers, Biology: 2 teachers, Arts: 26 teachers, Music: 15 teachers, Sports: 14 teachers) as well as the in-service training on CL (20 teachers had never participated in any in-service training on the topic of

"group work", nine had participated in one training session, nine in two training sessions, two in three training sessions, and five teachers had participated in four or more training sessions, while three teachers did not answer this question).

Interviews (Study 1)

The teachers were interviewed by three project staff members on the basis of guided interviews. In the formulation of the interview questions, the term "group work" was used instead of "cooperative learning" because this term is more commonly used by teachers in practice. However, teachers were asked about their understanding of the term at the beginning of the interview to ensure that they understood it to mean CL and not just the social form of group work. The interview guide included questions about the understanding of group work, its use and goals, as well as the teacher's experience with group work. Furthermore, the teachers were asked about their own role and about any challenges with using group work.

Survey (Study 2)

Teachers who participated in the online survey were asked in an open-ended question to give arguments for or against the implementation of CL. For the present analysis, the arguments against CL, that is, the perceived difficulties of CL, are of importance. A definition of the term "cooperative learning" was provided in advance to ensure an adequate reference ("In cooperative learning, students work together in pairs or small groups with a common goal and support each other").

Data analysis

The data from Study 1 were analysed based on structuring qualitative content analysis (Kuckartz, 2018). An initial structuring of the material was carried out by four project staff members by identifying the main categories in four interview transcripts. Subsequently, all interviews were divided among the four persons, and the text passages that carried the content were paraphrased. The main categories were tested on the entire material and modified. For this purpose, all text passages were assigned to the three main categories of *difficulties*, *goals*, and *role* of the teacher, if two persons agreed that they belonged to the respective category. These text passages formed the basis for further analysis. Subcategories were inductively formed by one person on the basis of the text passages within a main category, and the assignment of the text passages to the respective subcategory was carried out by

another person to allow calculation of inter-rater reliability. The inter-rater reliabilities for the assignment of the text passages to the respective subcategories were good ($\varkappa_{difficulties}$ = .83; $\varkappa_{role}$ = .81; $\varkappa_{goals}$ = .80). The responses given by teachers in the online survey (Study 2) were analysed using the main category "difficulties" and its subcategories as derived from the described coding scheme. Together, these analyses form the basis for answering research question 1.

To answer research questions 2 and 3, we used the rich data body of the interview study (Study 1). In particular, to answer research question 2, we analysed on which levels of the educational system (school laws/curricula, individual school, class, teaching processes/method, individual teacher/students) the teachers perceived the challenges to be located. Since the teachers were not explicitly asked in the interview to locate the difficulties on specific levels, it was not possible to derive a clear assignment to a level from all content-bearing text passages. Therefore, the results refer only to those text passages where this was possible. The assignment was made across all interviews by one person and subsequently communicatively validated within the project team.

To answer research question 3, conflicting demands associated with CL were identified in the interviews (whether or not the teachers themselves labelled them explicitly as being contradictory). Cue words and phrases that pointed to the perception of conflicting demands were, for example, "balance" or "on the one hand - on the other hand". The respective text passages were clustered into three contentual categories and communicatively validated.

Results

Challenges in the implementation of CL

We identified nine subcategories of difficulties in the data. Thirteen teachers reported difficulties associated with "Management/Control"; twelve teachers reported "Preparation Effort" to be a difficulty; eleven teachers perceived "Student Competency" to be a difficulty; nine teachers pointed to difficulties associated with "Prerequisites/Heterogeneity of the Group"; eight teachers named "Fit to content/school subject" as a difficulty; six teachers perceived difficulties associated with "Time Effort/Pressure"; six teachers named "Teacher Competency" as a difficulty; five teachers pointed to challenges associated with "Organizational Conditions/Setting", and three teachers mentioned difficulties with student

"Performance Evaluation". Examples of each category are presented in Table 1. We basically replicate these findings in our larger and more current sample in Study 2. In this sample, 25 teachers reported difficulties associated with "Management/Control", and 22 teachers perceived "Student Competency" as an argument against the use of cooperative learning. Thirteen teachers reported "preparation effort" and 10 teachers "time effort/time pressure" during class time to be among the challenges of CL. Nine teachers pointed to difficulties associated with "Prerequisites/Heterogeneity of the Group". Eight teachers pointed to difficulties associated with "Organizational Conditions/Setting"; seven teachers named "Teacher Competency" as a difficulty; five teachers mentioned difficulties with student "Performance Evaluation", and three teachers named "Fit to content/school subject" as a problem of cooperative learning implementation.

Localization of the challenges on different levels of the educational system

The data analysis of Study 1 revealed that each of the identified difficulties is often located on several levels of the educational system and not simply on one. Many difficulties (management/control, preparation effort, time effort, student competences, fit to content) are perceived to be linked to the CL method itself by the primary school teachers. A comparable number of difficulties are also perceived to be linked to the individual teacher level (competence, management/control, preparation effort, organizational conditions, fit to content) and the school law/curricula level (preparation effort, time effort, performance evaluation). Table 1 shows for each difficulty on which separate levels it is perceived to be located. Furthermore, Table 1 presents examples that illustrate the rationale for assigning the challenge to the particular level.

Table 1. Localization of challenges associated with cooperative learning on different levels of the educational system

Difficulty	*Level*	*Examples*
Management/ control	Method	"...because in group work it is perhaps a bit busier and louder than in teacher-centred instruction; that is quite clear." (Teacher 7).
	Teacher	"...then I also have to take a back seat during this time, which is something I do not necessarily succeed in with these children." (Teacher
	Students	"...when children just don't discipline themselves." (Teacher 10).
	Method	"...and the time required beforehand. But I always have that with free work." (Teacher 6).

Preparation effort	Curricula/laws	"It's also laborious in terms of material preparation because there isn't any; I have to sort of write a book at the end of the day." (Teacher 14)
	Teacher	"I didn't ... prepare that part thoroughly, yes." (Teacher 10).
Student Competency	Method	"Children have to be introduced to it. So, they can't do it overnight…." (Teacher 7)
	Students	"...there are also individual children, adolescents, whom you simply have to take out, who perhaps cannot bear it if they are unable to do things." (Teacher 1)
Prerequisites of the group/	Class	"There is often a huge gap, so it's really hard to find any kind of middle ground." (Teacher 2)
Fit with content/school subject	Method	"...I think group work is quite important for certain topics. For other phases, it is not suitable." (Teacher 13)
	Teacher	"Sometimes I expect too much from a topic and think more will come out of it." (Teacher 12)
Time effort/pressure	Method	"And group work takes a good hour and a half at least." (Teacher 14)
	Curricula/laws	"...that even in primary schools, teachers are already under too much pressure to go through a certain amount of material." (Teacher 5)
Teacher competence	Teacher	"Maybe I'm not that creative in terms of, you know, offering group work." (Teacher 3)
Organizational conditions	School	"I think that these external things are also important. Well, we [...] have such an old school building." (Teacher 2)
	Teacher	"Well, not every classroom necessarily has group tables [...] So, I could imagine that people would say, oh no, it's too much effort for me."
Performance evaluation	Curricula/laws	"But since our school system is grade-oriented, I am inevitably in this predicament that I have to write exams." (Teacher 1)

Source: Own illustration

Association between challenges and conflicting demands

The primary teachers' statements in Study 1 suggest that some of the perceived difficulties arise from conflicting demands concerning the teacher's role in CL and the goals of CL. Overall, three categories of conflicting demands were identified, one associated with the teacher's role in CL and two associated with the goals of CL.

Role: retaining vs. relinquishing control. The most frequently mentioned conflicting demand for teachers concerning CL is relinquishing some control over what is learned and social/interactional processes while at the same time retaining enough of it. The teachers describe their own role in CL as active and passive at the same time. The role conflict or difficulty in finding a balance between "intervening" and "letting things happen" is explicitly mentioned several times. This conflicting demand become evident in terms of *classroom management* and group behaviour, as the following comment shows:

> But I've really come to know that it's good for the children, that they also feel like there's a dynamic in the group, but that of course one has to be after it and, above all, one has to evaluate it. I have also seen that you have to talk about how things are going in the group, but in itself, I am prepared to hand over this leadership. This classroom management to the groups themselves. (Teacher 6)

The same conflicting demands become evident in terms of the *learning processes* during CL and not only in terms of classroom management-related issues, e.g.:

> Finding the right moment to say, no, this is going too far for me, so that it doesn't get out of hand, but on the other hand also to find the point to just let it go and see what happens. So, to find this, this balance (...) that is - I think - not so easy. (Teacher 4)

Goals: time-efficient vs. sustainable learning. A conflicting demand concerning the goals of CL was described as the amount of material to be mastered in a time-efficient manner, including the need for individual performance assessment in relation to the aspiration of CL to foster sustainable learning (e.g., through self-regulated learning and social interaction). The following example illustrates this conflicting demand:

> My experience has shown that it often takes more time. Of course, it is then also more sustainable. That is then again, the other thing. (...) So there is always this interaction. But since our school system is grade-oriented, I am inevitably in this predicament that I have to write exams, and then at some point there is this learning to the test. Wherever possible, of course, you can open up, but somewhere there has to be something to show for it. (Teacher 1)

In this context, CL was also perceived as a valuable "sanctuary" for students beyond immediate assessment pressure.

Goals: require vs. promote social competencies. Another conflicting demand concerning the goals associated with CL is that students' social competences are described as a

prerequisite, on the one hand, and as a hoped-for effect, on the other. Almost all teachers named the promotion of social skills as a goal of CL. This goal is often considered to be more relevant than subject-related goals. On the other hand, the teachers described the students' social and communicative competences as necessary requirements in order for the students to participate in the (socially beneficial) CL method. This conflicting demand becomes clear from the following comment:

> The crux is always, do I use group work or do I want to use group work to promote the social climate, but that doesn't mean that nothing has to be basic. That is, if nothing is present, so a little bit of empathy or yes, a connection to one another has to be there already, otherwise I cannot expect them to work together. (Teacher 1)

Discussion

Previous research on the challenges associated with CL in primary school hardly went beyond a mere listing of such difficulties and did not go beyond close-ended survey questions when investigating the perspective of primary school teachers. However, this seems important in order for appropriate measures to be taken that can deal with these difficulties. The present study addressed these research gaps.

Interpretation

The findings of our research on the challenges associated with CL are largely consistent with those from previous interview studies among secondary school teachers. The following three central difficulties emerged: issues related to management/control during CL (see Veenman, Kenter, and Post, 2000), additional (material/time) effort in the preparation and implementation of CL (see Buchs et al., 2017), and the necessary student competences (see Gillies and Boyle, 2010). However, the present study also extends the findings of these previous studies by exploring more deeply on which levels of the educational systems the teachers perceive the difficulties to be located and how far they are associated with the conflicting demands of CL. Furthermore, we find an additional challenge that has not been mentioned by the teachers in previous studies: "fit to content/school subject". This seems to be a difficulty that primary school teachers may notice more strongly than secondary teachers because they usually teach many different subjects. Thus, it may be important to develop material for CL that is specific to certain school

subjects. Furthermore, teacher training on CL may need to have a subject-specific focus, since teachers may not generalize their knowledge about CL to all the subjects they teach. In the following sections, we will more deeply interpret these three most central challenges.

The first central difficulty – issues related to management and control – seems to be primarily linked to the CL method itself, but also to the teacher and the student level from the primary teachers' perspective. The difficulty is further associated with conflicting demands concerning the role of the teacher in CL (e.g., active and passive) when it comes to managing behaviour and learning. Similar conflicting demands have been described in Dann, Diegritz, and Rosenbusch (1999) and Haag, von Hanffstengel, and Dann (2001) as the dilemma of intervention and non-intervention. Concrete strategies for teachers to support participation and productive interactions of their students could reduce teacher uncertainty and help them in monitoring CL (Büttner, Warwas, and Adl-Amini, 2012).

The second central difficulty – additional effort in preparation (e.g., material selection) and the time effort in implementation (independent elaboration of the learning content by the students) – has frequently been mentioned in our study as well as in previous studies. As the analysis of educational system levels in our interview study shows, primary school teachers perceive the time-consuming implementation of CL to be something inherent to the CL method, which, however, contradicts requirements on the system level (e.g., school laws, curricula, individual marks), such as having to cover an appropriate amount of learning material in a certain amount of time. Thus, according to the teachers' statements, an image of CL as a kind of pedagogically valuable "sanctuary" is formed, which, however, is poorly suited to the daily school routine. It can only be used as an "add on". Such an image could explain why even trained teachers are hesitant to use CL despite their positive attitude towards it (Ghaith, 2018). However, evidence-based teaching material for CL, i.e., Peer-Assisted Learning Strategies (Fuchs and Fuchs, 2000), could help teachers to reduce preparation time and structure CL for improved planning feasibility. The third central difficulty – insufficient competences among the students – is perceived by the teachers to be located on the level CL itself (i.e., the method is full of competence prerequisites) but also on the level of the students (i.e., students show low social skills). This seems to be further fraught with conflicting demands arising from the goals of CL (social competences as both a prerequisite and a primary goal). This finding may explain why CL is less often implemented in classes with

students that have low cognitive and social skills, although CL has been evaluated as particularly effective for these classes (Adl-Amini, 2018). Results by Gillies (2000) seem promising in which primary school children who had received modest training in cooperative skills showed more supportive behaviours and better learning outcomes in subsequent cooperative learning phases in the long term than untrained children.

Overall, the present study indicates that the individual difficulties associated with CL can each be located at several levels of the educational system at the same time and are accompanied by conflicting demands. However, it must be noted that the sample in Study 1 is rather small and old. Nevertheless, the findings on the type and frequency of perceived challenges are highly consistent with those from more recent studies and also our own recent research (Study 2). Thus, analysing these difficulties in more detail as we did in our interview study seems highly justified and provides valuable insights into how these still current difficulties can be dealt with.

Implications

Measures for improving the implementation of CL in practice, ones which address the level of the individual teacher, have already been proposed and investigated as teacher training programs (e.g., Ishler, Johnson, and Johnson, 1998). However, according to the present research's results, addressing teacher competence alone seems insufficient. The teachers in our interview study emphasized that problems associated with CL may also arise at other levels of the educational system. In particular, taking measures on several levels at the same time seems necessary (see Desimone, 2009; Lipowsky, 2011) in order to deal with one and the same difficulty. For example, the systematic provision of teaching material (e.g., workbooks) and time resources for CL seems necessary at the educational system level (law/curricula), whereas collegial processing and mutual support in implementing CL seem necessary at the individual school level. Thus, these examples show how the difficulty associated with preparation effort and time-efficiency can be addressed on two different levels.

The results from the interview study also imply that difficulties arise from (conflicting) role expectations as well as from the goals associated with CL. In this respect, it stands to reason that not all challenges may be fully resolved with the help of interventions/measures. Theoretical approaches to dealing with conflicting demands of teachers point to the need for reflexive processing and endurance

(Helsper, 2016). Accordingly, an implication for practice could be ongoing discussion of these conflicting demands and a reflection of corresponding practice situations in teacher training.

Overall, according to our research, CL should not be viewed one-dimensionally as a teaching method to be applied by the teacher in instruction, but rather as a complex design action in the classroom that takes place under certain conditions in the educational system and requires multiple prerequisites in order to function with few difficulties.

Acknowledgement

The project "Proliefs" was supported by the Landes-Offensive zur Entwicklung wissenschaftlich-ökonomischer Exzellenz (LOEWE), Hessisches Ministerium für Wissenschaft und Kunst. The project "KoaLa" was funded by the Federal Ministry of Education and Research under the funding code 01PR2101A; BAnz AT 28.11.2019 B3. Responsibility for the content of this publication lies with the authors.

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REVIJA ZA ELEMENTARNO IZOBRAŽEVANJE
JOURNAL OF ELEMENTARY EDUCATION
Vol. 17, No. 1, pp. 19–36, March 2024

USING GRM AND PECS FOR IMPROVING READING SKILLS IN STUDENTS WITH AUTISM SPECTRUM DISORDER

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Potrjeno/Accepted
6. 12. 2023

Objavljeno/Published
29. 3. 2024

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Abstract/Izvleček

This case study analysed the impact of GRM and PECS on the reading skills of two children with ASD with severity levels I and II. A descriptive cross-sectional quantitative approach was used with a pre-experimental, pre-test, post-test, and single-group design. The PROLEC-R Battery was applied before and after using these strategies to measure the students' reading ability. Results showed that although both participants improved in the initial and lexical reading processes, only the participant with severity level I reached a medium reading level. It was concluded that these methods were successful, but longer exposure to them will likely yield better outcomes.

Uporaba metod GRM in PECS za izboljšanje bralnih sposobnosti pri učencih z motnjo avtističnega spektra

V študiji primera smo analizirali vpliv metod GRM in PECS na bralne sposobnosti dveh otrok z motnjo avtističnega spektra stopnje I in II. Uporabljen je bil opisni presečni kvantitativni pristop s predeksperimentalno, predtestno, posttestno in enoskupinsko zasnovo. Baterija PROLEC-R je bila uporabljena pred uvedbo zgoraj omenjenih strategij za merjenje bralne sposobnosti učencev in po tem. Rezultati so pokazali, da čeprav sta se oba udeleženca izboljšala v začetnem in leksikalnem procesu branja, je le udeleženec z motnjo avtističnega spektra I dosegel srednjo raven branja. Ugotovljeno je bilo, da so bile uporabljene metode uspešne, vendar bodo z dolgotrajnejšo uporabo rezultati verjetno še boljši.

Keywords:
Autism Spectrum Disorder (ASD), Global Reading Method (GRM), Inclusive Education, Picture Exchange Communication System (PECS), PROLEC-R.

Ključne besede:
inkluzivno izobraževanje, komunikacijski sistem za izmenjavo slik (PECS), metoda globalnega branja (GRM), motnje avtističnega spektra (ASD), PROLEC-R.

UDK/UDC
[028:37]:616.896

DOI https://doi.org/10.18690/rei.2675

Introduction

Inclusion has become a topic of global interest, in reaction to which many countries have been modifying their policies and making room for this in different contexts in which society operates, including various actors who contribute to changes in these policies that respond effectively to the needs of Students with Disabilities (SWD) (Rosa and Lima, 2022). However, inclusion has faced many setbacks in its path that have somehow contributed to inclusive policies not being developed properly within society. Therefore, exclusion still prevails in many contexts, specifically, in education, which still has shortcomings related to the processes that are carried out within Educational Institutions (EI); hence, no state actor, institution, social group, or family can think about inclusion as if it were a topic unrelated to their reality (Alfageme et al., 2016).

Although multiple international organizations have promoted and protected the right to education since the United Nations General Assembly stipulated it (1948) as one of the fundamental rights, it is necessary to ensure an optimal training process in which fundamental skills are potentiated in people regardless of their disabilities. In some countries, there are still gaps in the ideal approach to teaching SWD since teachers receive little or inappropriate training in diversity acknowledgement (García, 2017; Ramirez, 2017), a situation which interferes when trying to offer quality education (Cooc, 2019; UNESCO, 2020).

Unfortunately, although EI have worked on the implementation of new projects and approaches, without ignoring needs that vary with each context and population (Jiménez and Ortega, 2018), the acquisition of knowledge in SWD is nowadays becoming difficult because in some cases, it is not properly taught what should be learned; instead, entertainment or socialization activities prevail. Additionally, there might be banal thoughts and barriers within school processes, so it is necessary to stop catastrophizing the implementation of inclusive programs; instead, we must emphasize the importance of "seeing inclusion as a means that seeks to lead children to be freer" (Ramirez, 2017, p. 222), thus opening the way to the implementation of improvement plans and promoting efficient teacher training on the topic.

Now, considering that a person with a disability is understood as one with impairments at any level that influence their optimal interaction with others (United Nations, 2006), effective strategies and competent teachers will be required to

provide these students with a quality education that promotes their full development in society. Currently, attention is directed to autism spectrum disorder (ASD) because it has been claimed that 1 in 160 children present this spectrum (World Health Organization, 2022). These students experience deficiencies at the level of communication and social interaction, emphasizing those that correspond to socio-emotional reciprocity (American Psychiatric Association, 2013). Moreover, they relate to others in a particular way because they have difficulties with language and imagination (United Kingdom Government, 2014).

However, ASD affects not only the field of communication but also that of behaviour, and taking into account that the symptoms related can manifest during the sensorimotor stage according to Piaget, it is also known as a "developmental disorder" (National Institute of Mental Health, 2022). Therefore, it can be arduous to carry out a detailed description of these students, leaving aside the possibility of establishing a single profile (Espinosa et al., 2018), resulting in a high workload for teaching staff who are unaware of the proper way in which ASD students should be taught. Hence, this study arises from the need to know the most effective strategies for the development of reading skills in children with ASD, and that can be a useful resource for teachers when teaching these skills to this population since many educators do not know how to do it or what strategies really work.

Literature review

Knowledge about ASD has evolved over the years and has therefore been directed towards a constant search for educational strategies that adequately respond to the needs or particularities that these students present at the behavioural, social, and communicative levels, and the reduced number of activities and interests they have (Schmidt, 2017; Varela and Machado, 2016). The literature focuses on the communicative dimension, alluding to the deficiencies that children with autism show in the acquisition and development of language, speech articulation, and reading difficulties. Hence, the literature claims that some strategies such as Dialogic Reading (DR) and Augmented Reality (AR) aim to strengthen language and improve executive and cognitive functions, while serving as a motivational complement (Baixauli et al., 2020). Likewise, the use of platforms such as AbaPlanet, Autism iHelp, Las Pelusas and Gaido Autismo have contributed to the teaching of reading to children with ASD (García et al., 2016).

Nevertheless, two reading methods and one visual strategy based on the Alternative and Augmentative Communication Systems (SAAC) were recognized as the most effective.

Reading methods

The most relevant methods for improving reading skills are the Global Reading Method (GRM) and the Treatment and Education of Autistic Related Communication Handicapped Children (TEACCH), which yielded efficient results in the processes of acquisition, development, and improvement of reading in children with autism. The TEACCH method stands out for being a fairly structured method where the learner recognizes the steps to follow (Toledo, 2015); moreover, thanks to its breadth and generalizability, it also contributes to different aspects of life (Vélez, 2017), covering not only the academic area in the improvement of reading skills in students with ASD (Martínez, 2017), and motor skills but also other aspects such as motivation and autonomy (Pinto, 2020).

TEACCH is closely related to the GRM since it is effective in the development of reading because it is a generalized and representative method that associates images with words and is based on the pairing of a photograph or drawing with its respective word (Rodríguez et al., 2018) as well as the use of graphic signs (Barreda, 2020). Additionally, the GRM is attractive to students because of its natural and general way of acquiring the meaning of words at the user's own pace, which has helped to address reading difficulties in students characterized by the Reading Process Assessment Battery-Revised (PROLEC-R) (Arteaga et al., 2019).

Visual strategies

One of the characteristics of children with ASD is an alteration in the sensory perception of things (Araujo and Araújo, 2021). Therefore, these students acquire and assimilate information better visually and require SAAC, specifically PECS, which is a unique augmentative and alternative teaching system that consists of showing an image of the desired element to a receiver, working on the association between the acoustic image and its meaning, looking for the child to identify the word exposed in any context (Ripalda et al., 2016). Now, considering the age of the participants in this study, from Piaget's theory, the preoperational stage of cognitive development applies, where language development begins in the child through symbolic representation (Piaget, 1964).

So, most of the time, PECS will significantly contribute to the reading process (Muñumel, 2017) because it includes visual agendas and pictograms that promote the acquisition of reading (Cáceres, 2017) and enrich the GRM (Afonso, 2020). Thus, the PECS and GRM methods, when used together, can enhance reading skills in children with autism.

Methodology

This investigation was developed through a case study method that analyses from an external perspective the current academic reality regarding certain cognitive processes of children with autism. The main objective of this study was to analyse the impact of GRM and PECS strategies on the reading skills of two children with ASD at severity levels of I and II, belonging to the first and third grades of primary school, respectively. Accordingly, we came up with the following research questions: 1) which strategies mentioned in the literature review are the most promising for the improvement of ASD learners' reading skills? 2) what are the differences in the participants' reading processes before and after applying the strategies? 3) to what extent do the given strategies impact the participants' reading ability development? Hence, this study implemented a descriptive, cross-sectional quantitative approach since this establishes a logical process of analysis of initial and final data, through the application of standardized tests, obtaining their respective results and conclusions (Newby, 2014). In addition, the design used was pre-experimental, including a pretest-post-test with a single group, in which the PROLEC-R Battery was used as a data collection instrument (Cuetos et al., 2014). The reading level of the children was evaluated by the researchers prior to the experimental treatment, giving way to the application of the GRM and PECS strategies, and culminating with a subsequent application of the test (Hernández et al., 2018).

Procedure

This study was carried out in nine stages to achieve its objective. In the first place, the research topic was chosen based on the difficulties exhibited by children with ASD when acquiring cognitive skills related to reading. Next, we carried out the literature review and the collection of information on the strategies that positively contribute to the reading development of students with ASD.

Then, two strategies, the GRM and PECS, were selected based on the multiple successful results that demonstrate their effectiveness when implemented together. Additionally, the sample that was taken for the application of the PROLEC-R Battery was selected, using a non-probabilistic sampling for convenience.
Later, the authorization and consent of the parents were obtained, along with the assent of the children selected for the study. Subsequently, the PROLEC-R was applied to the selected sample in the pre-test phase; once this was applied, the results were reviewed and analysed. Afterward, the GRM and PECS strategies were implemented for 30 consecutive days in one-hour interventions. Subsequently, the assessment instrument was reapplied, and later the results of this were analysed after implementation of the selected strategies. Finally, the results were reviewed to establish the conclusions of this study.

Instrument: reading processes evaluation battery, revised PROLEC-R

The instrument used was psychometric, known as the PROLEC-R Battery since its objective is to identify reading shortcomings. This test evaluates reading processes through 9 tasks that assess from the most basic to the most complex reading processes, and its application must be individual to students from 6 to 12 years. The first two tasks, Identification of Letters (IL) and Equal-Different (ED) are intended for the initial processes of letter identification. The following tasks, Word Reading (WR) and Pseudoword Reading (PWR) are intended for lexical processes. The next two, Grammatical Structures (GS) and Punctuation Marks (PM) aim to assess syntactic processes, and finally, the last three, Comprehension of Sentences (CS), Text Comprehension (TC) and Oral Comprehension (OC) are directed to higher processes or semantic processes (Cuetos et al., 2014). This instrument is scored with zero and one, the first for the wrong answer and the second for the correct one (Cayhualla et al., 2013).
Regarding the values obtained in the main indicators, the instrument has specific scores to determine the category in which the evaluated person has been placed with respect to their reading skills. In this way, the reading skills of students can be measured to indicate their degree of difficulty in one of the following categories: Severe Difficulty (SD), Difficulty (D) and Normal (N).

These data are presented according to the school grade of the evaluated person, according to the test scales; thus, only the data corresponding to the first and third grades of primary school was considered (see Table 1).

Table 1. Scales that determine the category for reading ability

	First Grade			Third Grade		
Tasks	**SD**	**D**	**N**	**SD**	**D**	**N**
IL	0-18	19-45	46 or more	0-33	34-69	70 or more
ED	0-2	3-9	10 or more	0-7	8-17	18 or more
WR	0	1-23	24 or more	0-29	30-60	61 or more
PWR	0-5	6-20	21 or more	0-19	20-37	38 or more
GS	0-6	7-10	11-16	0-9	10-12	13-16
PM	0	1-2	3 or more	0-5	6-11	12 or more
CS	0-10	11-13	14-16	0-13	14-15	16
TC	0	1-5	6-16	0-5	6-9	10-16
OC	-	0-1	2-8	-	0-2	3-8

Note. Reading process evaluation battery, revised PROLEC-R (Cuetos et al., 2014, p. 50)

Table 2. Scales determining the category for the accuracy indicator

	First Grade				Third Grade			
Tasks	**SD**	**D**	**?**	**N**	**SD**	**D**	**?**	**N**
IL	0-12	13-14	15-16	17-20	0-15	16	17-18	19-20
ED	0-12	13-14	15-16	17-20	0-14	15	16-18	19-20
WR	0-27	28-30	31-34	35-40	0-35	36	37-38	39-40
PWR	0-22	23-26	27-30	31-40	0-28	29-30	31-34	35-40
PM	-	0-1	2-4	5-11	0-5	6	7-9	10-11

Note. Reading process evaluation battery, revised PROLEC-R (Cuetos et al., 2014, p. 51)

In the same way, regarding the accuracy indicator produced by the instrument, the scales that are defined for this are established to select the category of difficulty

pertaining to the evaluated person, these being Severe Difficulty (SD), Difficulty (D), Doubts (?) and Normal (N) (see Table 2).

Likewise, regarding the speed indicators obtained after the application of the instrument, categories are established based on the time each subject takes to carry out each of its items, these being Very Slow (VS), Slow (S), Normal (N), Fast (F) and Very Fast (VF) (see Table 3).

Table 3. Scales determining the category for the speed indicator in seconds

	First Grade					**Third Grade**				
Tasks	**VS**	**S**	**N**	**F**	**VF**	**VS**	**S**	**N**	**F**	**VF**
IL	51 or	40-	17- 39	6-16	0-5	38 or	29- 37	13- 28	5-12	0-4
ED	225	177-	82-	35- 81	0-34	140 or	108-	45-	13- 44	0-12
WR	194	147-	52-	5-51	0-4	83 or	66- 82	31- 65	14- 30	0-13
PWR	208	162-	69-	23- 08	0-22	117 or	95-	52- 94	30- 51	0-29
PM	249	189-	69-	9-68	0-8	102 or	82-	43- 81	23- 42	0-22

Note. Reading process evaluation battery, revised PROLEC-R (Cuetos et al., 2014, p. 52)

Table 4. Reading ability indicators by school grade

	First Grade			**Third Grade**		
Tasks	**L**	**M**	**H**	**L**	**M**	**H**
IL	46-57	58-104	105 or	70-84	85-143	144 or
ED	10-11	12-23	24 or more	18-22	23-41	42 or more
WR	24-29	30-75	76 or more	61-73	74-126	127 or
PWR	21-25	26-51	52 or more	38-44	45-75	76 or more
PM	3	4-11	12 or more	12-14	15-24	25 or more

Note. Reading process evaluation battery, revised PROLEC-R (Cuetos et al., 2014, p. 54)

Finally, considering the accuracy and speed indicators, which yield the scores that are reflected in the main ones, the level of reading ability is categorized according to

the points obtained and the current school grade; thus: Low (L), Medium (M) and High (H) (see Table 4).

Instrument validity

The reliability of the PROLEC-R is supported by the criterion, content, and construct validity indices, which demonstrate the efficiency and effectiveness of this test, considering that it measures the specific aspects that are intended to be evaluated. Therefore, the psychometric properties do indeed show adequate reliability indices, and this allows us to affirm that the test values are satisfactory, given that most such tests show their maximum reliability corresponding to a total Cronbach's Alpha of 0.79 even though some test scales present lower values (Cuetos et al., 2014).

Results

Initial and final test analysis

Main indicators

To establish the initial state of the participants' reading skills, the PROLEC-R battery was applied for the first time, without yet having implemented the GRM and PECS strategies; in this order, the following results were obtained regarding the main indicators.

Both participants obtained scores placing them in category D for the OC task, and SD for the other ones (see Table 5). However, even though participant 1 was located in these categories, he achieved higher scores than participant 2; this could be related to the ASD level of severity. These first results might demonstrate that being in the SD category may happen because the teachers in charge of these children at school did not use the appropriate strategies to work with them or did not consider their distinct paces and learning styles, leading to poor or underdeveloped reading skills for the age and school grade of the participants.

Table 5. Main indicators: initial and final test

	Participant 1				Participant 2			
	Initial Test		Final Test		Initial Test		Final Test	
Tasks	**Score**	**Cat.**	**Score**	**Cat.**	**Score**	**Cat.**	**Score**	**Cat.**
IL	3.3	SD	63.3	D	0.6	SD	48.6	D
ED	0.6	SD	18.3	N	0	SD	12.0	D
WR	0.4	SD	46.3	N	0	SD	33.6	D
PWR	0	SD	11.4	D	0	SD	32.6	D
GS	0	SD	2	SD	0	SD	1	SD
PM	0	SD	0	SD	0	SD	0	SD
CS	0	SD	0	SD	0	SD	0	SD
TC	0	SD	0	SD	0	SD	0	SD
OC	0	D	0	D	0	D	0	D

Note. Cat. refers to Category.

After the application of the GRM and PECS strategies, the PROLEC-R battery was applied again to assess the potential impact on these students. Differential results were found concerning those initially obtained in each of the tasks evaluated, corresponding to the main indicators. Although neither participant showed progress in the GS, PM, CS, TC and OC tasks, they did improve in the IL, ED, WR and PWR, being located in the categories D, N, N, and D for participant 1, respectively, and D in the same tasks for participant 2 (see Table 5).

This indicated that participant 1 gave a higher performance in terms of reading skills compared to participant 2, who despite having obtained more favourable results on the initial test, did not place himself in any of the main indicators within category N. This could have been related to the test requirements that claim higher or greater values to those in higher school grades, which significantly influenced the results.

This might prove that teachers should not generalize that because a child with ASD is in a higher school grade, greater requirements must be applied. This could end by hampering the learning process of these children, leading the student to develop frustration with or conflicts in learning, so barriers may appear when achieving efficient development of their reading skills.

Therefore, it would be pertinent that the necessary adjustments be made so that any student with autism that requires these achieves the proposed objectives considering their specific abilities.

Accuracy indicators

Regarding the accuracy indicators in the initial application of the test, it was found that participant 1 achieved a greater number of hits or hits in the IL, ED and WR tasks than participant 2. Nevertheless, neither achieved any hits in the PWR and PM tasks (see Table 6). Although there is a difference concerning the number of hits between the participants, both were again classified in the SD category, which shows shortcomings in the initial, lexical, and syntactic processes of each one. These results could be related to the fact that they attend EI with different approaches, prioritizing different objectives in their curriculum from the aforementioned reading processes, or perhaps that these institutions did not adapt their objectives to the characteristics of students with ASD.

In the final application of the test, it was found that the requirement in terms of the number of hits for the school grade according to the standardized values of the test influenced the accuracy results for each participant, where even though both obtained a similar number of hits, participant 2 did not reach category N but did go up one category compared to his initial results since he was left in the ? category for the IL, ED and PWR tasks, and D in WR (see Table 6).

Table 6. Accuracy indicators for the initial and final tests

	Participant 1				Participant 2			
	Initial Test		Final Test		Initial Test		Final Test	
Tasks	**Hits**	**Cat.**	**Hits**	**Cat.**	**Hits**	**Cat.**	**Hits**	**Cat.**
IL	7	SD	19	N	4	SD	18	?
ED	2	SD	18	N	0	SD	17	?
WR	3	SD	38	N	0	SD	36	D
PWR	0	SD	36	N	0	SD	32	?
PM	0	SD	2	SD	0	SD	0	SD

Note. Cat. refers to Category.

However, the category ? does not imply that the reading ability of the participant is deficient since this is presented as an intermediate point between normality and difficulty. Therefore, it should be interpreted as aspects to be reinforced in the assessed participant. On the other hand, participant 1 made a significant advance regarding the accuracy of his reading skills, going from the SD to the N category in the IL, ED, WR and PWR tasks. This could show that the use of the GRM and PECS strategies is a fundamental support in improving accuracy in children with autism. However, syntactic processes turned out to be more challenging for both participants since they remained in the SD category in the PM task.

Speed indicators

Considering the results of the speed indicators before the application of the strategies, we observed that participant 2 took more time to complete the tasks corresponding to these indicators as compared to participant 1. Nonetheless, both were placed in the VS category in most tasks, except in PM, where participant 1 was classified in the S category. In addition, regarding the WR and PWR tasks, in the first one, participant 2 took 579 seconds, and 822 seconds in the second, while participant 1 took 745 and 2174 seconds, respectively (see Table 7).

These tasks max have been more difficult for participant 1 because he took more time compared to his peer. Now, in general terms of this indicator, the fact that participant 2 spent more time could be directly related to its level of severity.

Table 7. Speed indicators for the initial and final tests

	Participant 1				**Participant 2**			
	Initial Test		**Final Test**		**Initial Test**		**Final Test**	
Tasks	**Sec.**	**Cat.**	**Sec.**	**Cat.**	**Sec.**	**Cat.**	**Sec.**	**Cat.**
IL	212	VS	123	VS	623	VS	37	S
ED	313	VS	158	N	713	VS	141	VS
WR	745	VS	262	VS	579	VS	107	VS
PWR	2174	VS	314	VS	822	VS	98	S
PM	184	S	101	N	441	VS	253	VS

Note. Cat. refers to Category; Secs. refers to Seconds.

After having used the reading strategies and obtained the results of the final test, it was observed that both participants spent less time on the tasks. Therefore, participant 1 was placed in the N category in the ED and PM tasks, and participant 2 in the S category in the IL and PWR ones. However, they remained in VS in some tasks; participant 1 in IL, WR and PWR and participant 2 in ED, WR and PM (see Table 7). However, it is necessary to highlight here the participants' level of severity because although it is believed that the greater the severity, the greater the time spent on certain tasks, it was found that this was not a reason to slow down the development of the tasks since both participants improved their time on all the speed tasks in relation to the initial test. This could support the use of the GRM and PECS strategies implemented during the intervention.

Initial and final reading skill

Finally, considering the scores obtained by tabulating the accuracy and speed indicators in each of the two applications of the test, it was evident that neither participant could place themselves within the parameters for classifying their level of reading ability since they obtained low scores on the initial test. However, after the application of the GRM and PECS strategies, Participant 1 (P.1) gave a better performance on the IL (63.3), ED (18.3) and WR (46.3) tasks, reaching a medium level (M) of reading ability. In contrast, Participant 2 (P.2), despite showing improvement in some tasks, remained below the established criteria for all tasks in both applications of the test. That is, he did not meet the criteria established by the test to be placed in higher categories that support an optimal level of his reading skills (see Table 4). In this way, it was possible to compare the initial level of reading ability with the final one for each participant, which was positively influenced in the final application of the test, possibly thanks to the strategies implemented (see Figure 1)

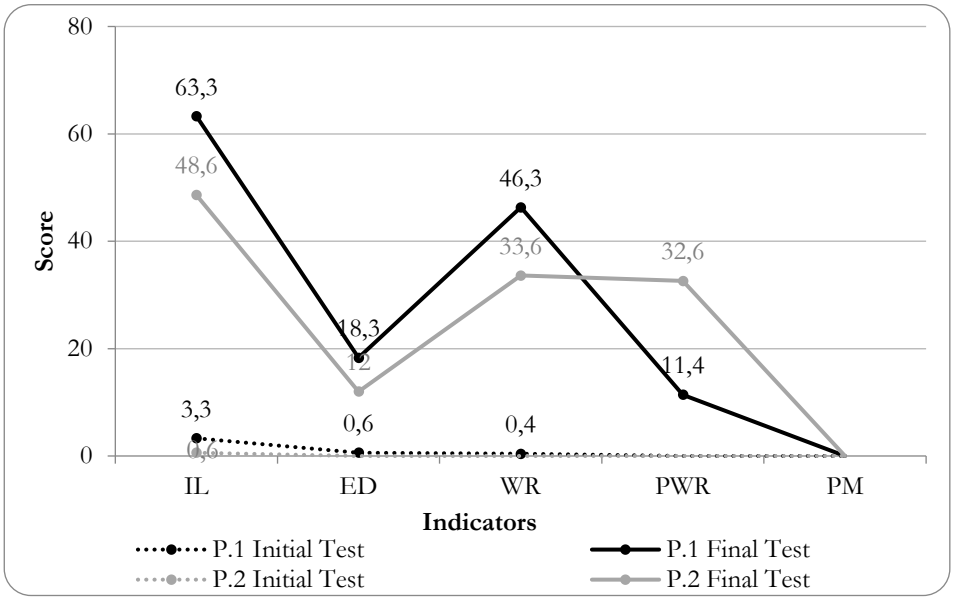

Figure 1. Initial and final reading skills.

Discussion

Based on the need to use effective strategies that respond in a timely manner to the particularities of students with ASD, who are quite visual and therefore rely on visual teaching materials, the use of SAAC plays an important role since this enhances oral language in these students (Fortea et al., 2015), specifically PECS, which, together with the GRM method, once again gave positive and promising results.

The effectiveness of the selected strategies was demonstrated, validating the progress the participants made with respect to their initial reading skills (Rodríguez et al., 2018). Also, thanks to the uninterrupted exposure to the strategies and graphic signs, reading skills were influenced positively (Barreda, 2020). However, it should also be mentioned that the participants' EI lacked teachers trained in inclusive teaching, or maybe these institutions did not prioritize the development of reading processes in ASD students. Also, participants' automaticity could have affected the results even when they demonstrated awareness of certain basic linguistic knowledge.

Finally, two limitations were recognized that arose throughout the study and that could have affected the results. In the first place, there was little time for implementation of the strategies, as can be seen in the case of participant 2, who

could have obtained better results considering that GRM and PECS are effective as long as the student's learning style and pace are considered (Arteaga et al., 2019). The second limitation concerns the need to develop this study through an experimental design with more participants, so that clear results can be generalized, offering high validity to the study (Montoya et al., 2011). Nevertheless, ASD presents a wide spectrum of particular and innate cognitive styles that prevent a generalization regarding traits or skills (Villa, 2014).

Conclusions

Considering the difficulties experienced by children with ASD in the communicative field (Echeguia, 2016), and recognizing their visual learning particularities, we concluded that the use of GRM and PECS strategies were effective for developing and improving the reading skills of students with autism, mainly those with a severity level of I. Nevertheless, those with a severity level of II should be exposed to these strategies for a longer time so that they can achieve better results. Similarly, we concluded that students with ASD reached a medium level in initial and lexical processes, but failed to advance in syntactic and semantic processes since the latter two are more complex and demanding according to the scales of the PROLEC-R test for the school grade and the chronological age of the participants. Therefore, students' needs must be considered to provide them with quality reading instruction. Given the positive results obtained in this study, GRM and PECS are proposed within EI as strategies that teachers can implement in reasonable adjustments for those students who require it.

For this reason, it would be important to put aside the traditional method of teaching reading, which focuses on learning through phonemes and syllables isolated from their meaning or image, and instead use attractive strategies such as those applied in this study because these have demonstrated greater effectiveness in a short time, proving suitable for the development of reading skills in ASD students.

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REVIJA ZA ELEMENTARNO IZOBRAŽEVANJE
JOURNAL OF ELEMENTARY EDUCATION
Vol. 17, No. 1, pp. 37–51, March 2024

JOB SATISFACTION AND PROFESSIONAL BURNOUT IN KINDERGARTEN TEACHERS

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Potrjeno/Accepted
3. 8. 2023

Objavljeno/Published
29. 3. 2024

Abstract/Izvleček

The article investigates the relationship between kindergarten teachers' professional burnout and their education level and work experience. The data were obtained through a survey conducted among 206 kindergarten teachers. According to the results, kindergarten teachers are most satisfied working with children and collaborating with colleagues, and least satisfied with their monthly income, opportunity for formal professional training, working conditions and work organization. Self-assessment of work exhaustion and work alienation showed no statistically significant differences, but a difference was recorded for work engagement. Kindergarten teachers with a bachelor's degree have the highest level of work engagement, as well as those who are at the beginning of their careers.

Keywords:
professional training, work role, work conditions, kindergarten teachers.

Zadovoljstvo z delom in poklicno izgorevanje vzgojiteljev

V prispevku preučujemo povezavo med poklicno izgorelostjo vzgojiteljev v vrtcih ter njihovo stopnjo izobrazbe in delovnimi izkušnjami. Podatke smo pridobili z anketnim vprašalnikom, na katerega je odgovorilo 206 vzgojiteljev. Glede na rezultate so vzgojitelji najbolj zadovoljni z delom z otroki in s sodelovanjem s sodelavci. Najmanj so zadovoljni z mesečnim dohodkom, ponudbo strokovnega izobraževanja, delovnimi razmerami in organizacijo dela. Samoocena delovne izčrpanosti in odtujenosti od dela ni pokazala statistično značilnih razlik, je pa razlika zabeležena pri delovni zavzetosti. Najvišjo stopnjo delovne zavzetosti imajo vzgojitelji z univerzitetno izobrazbo ter tisti, ki so na začetku kariere.

Ključne besede:
strokovno usposabljanje, delovna vloga, delovni pogoji, vzgojitelji

UDK/UDC
37.011.3-051:159.944.4

DOI https://doi.org/10.18690/rei.2519

Introduction

This paper aims to determine how kindergarten teachers assess their workload depending on their education level and work experience. Educational policies often emphasize the importance of lifelong education and professional development, which form the basis for the development of quality early childhood education practices. Therefore, kindergarten teachers are expected to continuously acquire new knowledge about the child's development and the preconditions for complete child development, and to improve their efficiency through documentation, research, and reflective thinking (Slunjski, Šagud and Brajša Žganec, 2006; Vekić-Kljaić, 2016). Consequently, kindergarten teachers should demonstrate commitment to professional development and the application of new knowledge in practice, as well as be sensitive to the individual characteristics of children (NAEYC, 2019). However, the extent to which the recommendations will be implemented depends on personal effort and working conditions.

People who are internally motivated when choosing their profession remain in their profession longer and have a more successful career (Gati and Tal, 2008). The most common motives for choosing a teaching job include the satisfaction of helping children in their learning and development (Konen, 2020). Personal motivation, commitment to work, dedication to each child and identification of the child's difficulties and needs, as well as timely problem-solving in cooperation with parents and expert staff are important characteristics and at the same time factors leading to satisfaction with the teaching job (Preschool Education Division, 2010; Plavšić and Diković, 2022). In addition, job satisfaction depends on the workplace atmosphere, according to Olsen and Anderson (2007), who claim that friendly relations, cooperation with colleagues and good administrative support help employees to feel satisfied. Among other factors of satisfaction are fair hiring practices, the possibility of further professional training (Turner et al. 2007; Vidal, 2007), job security, the opportunity to use personal competences, good human resources management, salary in accordance with the performance of job duties, support from superiors, the possibility of work-life balance (Kapur, 2018; Mohanty, 2009), work autonomy (McCormack and Cotter, 2013), an adequate number of children in the educational group (Wells, 2015), fewer children with problematic behaviour (Asi, Aydin and Karabay, 2018; Lee et al., 2017) and kindergartens and educational groups well equipped with educational materials (Matković et al., 2020).

It can be concluded that the education of kindergarten teachers is an important factor (Bowman, Donovan and Burns, 2000; de Kruif et al., 2000), but not necessarily a determinant of job satisfaction (Czajka, 2020; Early et al., 2007). Moreover, it can be assumed that people who have been working for a longer period will develop the skills to deal more successfully with challenges at work, but also that people with less work experience can enjoy their work more than those with more work experience (Kovač and Javornik Krečić, 2014; Plavšić and Diković, 2022). People with longer work experience may, owing to loss of motivation and fatigue, give up further education and professional development, which can cause workplace stress (McCormack and Cotter, 2013).

When a person is exposed to chronic workplace stress that has not been successfully managed and sees no possibility of solving this problem, this results in burnout syndrome (WHO, 2019). The syndrome is manifested in feelings of fatigue and exhaustion, negative attitudes towards work, cynicism, reduced personal achievements, low job satisfaction, and poor general health (Okeke et al., 2014). Burnout syndrome is most often measured by the level of work engagement, work alienation and work exhaustion (Kovač and Javornik Krečić, 2014; Sinval et al., 2019).

The purpose of this research was to find the connection between the variables, namely the self-assessment of professional burnout and the educational level and work experience of kindergarten teachers.

Aim and subject of research

The professional role of kindergarten teachers in Croatia is burdened with administrative work, a large number of children in classrooms, everyday interactions with different participants in the educational process (children, parents, colleagues, and supervisors), and lower monthly income (Matković et al., 2020). Research shows that these factors are correlated with higher levels of professional burnout, while personal motivation, dedication to educational work with children, and the opportunity for further professional training are correlated with job satisfaction (Turner et al., 2007; Vidal, 2007; Gati and Tal, 2008; Kapur, 2018). That is why educational level, professional development, and work experience (Czajka, 2020; Plavšić and Diković, 2022) are the focus of this study.

Therefore, the aim of this study was to research the difference in self-assessment of professional burnout with regard to kindergarten teachers' educational level and work experience.

Research questions

This paper has the following research questions: How satisfied are kindergarten teachers with certain work-related factors? What is the connection between self-assessment of professional burnout and educational level? And what is the connection between self-assessment of professional burnout and work experience?

Methodology

Instrument

An anonymous survey was conducted using a two-part questionnaire. The first part of the questionnaire contained questions about participants' sociodemographic characteristics (gender, age, work experience, level of education, workplace, the type of educational program, working hours, public or private kindergarten). The satisfaction of working conditions was measured on a five-point Likert-type scale measuring satisfaction with internal factors (cooperation with colleagues, parents and children, family and work role) and external factors at the workplace (working conditions, monthly income, work organization, opportunities for professional development). The participants reported to what extent they were satisfied with each factor, with the numbers indicating: 1 = I completely disagree; 2 = I mostly disagree; 3 = I neither agree nor strongly disagree; 4 = mostly agree; 5 = completely agree. The second part of the questionnaire contained 16 questions, and was created as a Likert-type scale, where the number 1 indicated complete disagreement and 5 complete agreement with the item. This part of the questionnaire was constructed according to the Oldenburg Burnout Inventory (OLBI) (c.f. Sinval et al., 2019), and the questions were adapted to the kindergarten teaching profession. To determine the accuracy of the translation, a double translation method was used, i.e. from English to Croatian and from Croatian to English.

The construct validity and reliability of the job role satisfaction scale was analysed by factor analysis, the appropriateness of which was supported by the following measures: KMO=0.771, $p<0.001$. When using the OLBI instrument, a two-factor structure is most often obtained, yet in this research three fixed factors were

extracted, which explain a total of 46.091% of the variance (the first explains 17.79%, the second 14.23%, and the third 14.06%):

Factor 1: work exhaustion (measured as the extent to which participants self-assess work exhaustion): *After my work, I usually feel worn out and weary*; *After work, I tend to need more time than in the past in order to relax and feel better*; *After working, I have enough energy for my leisure activities*; *After my work, I usually feel worn out and weary*; *During my work, I often feel emotionally drained*; *Usually, I can manage the amount of my work well*; *There are days when I feel tired before I even get to work*.

Factor 2: work alienation (measured as the extent to which participants self-assess work alienation): *It happens more and more often that I talk about my work in a negative way*; *Sometimes I feel sickened by my work tasks*; *Over time, one can become disconnected from this type of work*; *Lately, I tend to think less at work and do my job almost mechanically*; *I can tolerate the pressure of my work very well*.

Factor 3: work commitment (measured as the extent to which participants self-assess work commitment): *I feel more and more engaged in my work*; *This is the only type of work that I can imagine myself doing*; *I find my work to be a positive challenge*; *When I work, I usually feel energized*; *I always find new and interesting aspects in my work*.

Participants

The survey was conducted in 2021, and the participants were 206 early childhood and preschool teachers from the city of Split and the surrounding area. The participants were employed in city, religious and private kindergartens. Convenience sampling was applied, and the survey was conducted live to include teachers with longer work experience. The participants were informed about the data anonymity and confidentiality.

Out of 206 participants, the majority were women (98.1%), while only 1.9% of kindergarten teachers were men. The average age of participants was 44.1 years old. If we look at the length of service 10.20% of kindergarten teachers had up to 5 years of service, 34% of kindergarten teachers had 6 to 15 years of service, 26.20% had 16 to 25 years of service and 29.60% of kindergarten teachers had over 25 years of service. Most kindergarten teachers had two-year professional education (141), 43

kindergarten teachers had an undergraduate level of education, 20 had graduate level education, while the remaining 2 had a high school education. The average number of professional development training opportunities among kindergarten teachers was 3 (M: 3.13; ± SD=3.72), which means that every kindergarten teacher participated in 3 professional development training sessions in the past year. The majority of kindergarten teachers work in city-owned preschool institutions (85%), most work in 10-hour programs (82.5%), and kindergarten programs are the most common type of program (69.42%) among participants in this survey.

Data analysis

A statistical data analysis was performed using the Social Science Statistics Package (SPSS 24). General data on participants are presented in graphs and tables, followed by a descriptive analysis including percentages, frequencies, mean values, and standard deviation. Factor analysis and the Kruskal-Wallis test were used to test the hypotheses. The results are presented in tables and further clarified in the text.

The majority of the 206 research participants were women, with significantly fewer male teachers (N=4). The average age of the participants was 44.1 years. Most teachers had between 6 and 15 years of work experience (34%), while the lowest number of teachers had up to 5 years (10%). Most teachers had a two-year initial professional education (69%); 21% of teachers had an undergraduate level of study, and 10% a graduate level. The average number of professional training opportunities was 3 (M= 3.13; ± SD=3.72), which means that each teacher participated in 3 professional training sessions in the previous year. The largest number of kindergarten teachers work in a preschool education institution founded by the city (85%), most are included in programs lasting 10 hours (82.5%), and kindergarten programs for children from 3 to 7 years old are the most prevalent type of program (69.42%) in which these kindergarten teachers work.

Hypotheses

Hg: There is no statistically significant difference in the self-assessment of professional burnout with regard to kindergarten teachers' education level and work experience.

H1: There is no statistically significant difference in the self-assessment of professional burnout with regard to kindergarten teachers' education level.

H2: There is no statistically significant difference in the self-assessment of professional burnout with regard to kindergarten teachers' work experience.

Research results

Descriptive analysiss

Before testing the hypotheses, we sought to determine how satisfied kindergarten teachers are with certain work-related factors. Table 1 shows the satisfaction levels. The results in the table are arranged in such a way that the elements with which the kindergarten teachers are most satisfied appear in first place, and those for which they express the lowest level of satisfaction appear in last place.

Table 1. Level of general satisfaction among participants with individual elements.

Elements of satisfaction	M (±SD)	Mode
Generally, with my family role.	4.56 (0.58)	5
With children in my group.	4.44 (0.65)	5
Collaborating with colleagues.	4.43 (0.7)	5
Generally, with my job role/work.	4.23 (0.66)	4
Collaborating with parents.	4.21 (0.7)	4
With work organization in the institution where I work.	3.69 (0.85)	4
With working conditions (material, personnel, etc.).	3.65 (0.93)	4
With formal professional training opportunities	3.23 (1.02)	4
With monthly income.	2.86 (1.2)	2

The results showed that kindergarten teachers are most satisfied with their family role (mean=4.56), with the children in the group where they work (mean=4.44) and with cooperation among their work colleagues (mean=4.43), while they are least satisfied with the opportunities for formal professional training (mean= 3.23) and their monthly income (mean=2.86).

Education level and work experience can have an impact on the level of professional burnout. In this study, it was assumed that there was no statistically significant difference in the self-assessment of professional burnout with regard to kindergarten teachers' education level.

In order to examine whether there is a difference in the self-assessment of professional burnout with regard to education level, the Kruskal-Wallis test was performed (Table 2).

Table 2. Kruskal-Wallis test of the average rank of the job role satisfaction factor by education level.

Ranking	**Education level**	**N**	**Medium Rank**
Work exhaustion	Two-year education / College	141	105.29
	Undergraduate level	43	92.50
	Graduate level	20	103.70
	Total	204	
Work alienation	Two-year education / College	141	103.11
	Undergraduate level	43	100.05
	Graduate level	20	103.35
	Total	204	
Work engagement	Two-year education / College	141	95.55
	Undergraduate level	43	120.29
	Graduate level	20	114.50
	Total	204	

	Chi-square	df	Asymp. Sig.
REGR Work exhaustion for Education level analysis	1.530	2	.465
REGR Work alienation for Education level analysis	.092	2	.955
REGR Work engagement for Education level analysis	6.607	2	.037

a. Kruskal Wallis Test
b. Grouping Variable: Education_level_numbers
*p<0.05

The results showed no significant difference for work exhaustion (p=0.465) and work alienation (p=0.955) with respect to education level; however, a statistically significant difference was found for work engagement (p=0.037). The lowest level of engagement was observed in kindergarten teachers who had completed two-year education/college, and the highest in kindergarten teachers with undergraduate education (Table 2).

Furthermore, in testing the effect of work experience, we started from the hypothesis that there was no statistically significant difference in the self-assessment of professional burnout with regard to work experience.

Table 3 shows the results from testing the dimensions of job role satisfaction with regard to work experience. Kindergarten teachers with the longest service (over 25 years) show the highest levels of work exhaustion, while work alienation is most

common in kindergarten teachers with 16 to 25 years of service. They also showed the lowest levels of work engagement. However, only the following statistical analyses checked whether there were statistically significant differences.

Table 3. Kruskal-Wallis test of the average rank of the job role satisfaction factor by work experience.

Ranking	Work experience	N	Medium rank
Work exhaustion	up to 5 years	21	83.24
	6 – 15 years	70	101.20
	16 – 25 years	54	100.22
	over 25 years	61	116.02
	Total	206	
Work alienation	up to 5 years	21	107.62
	6 – 15 years	70	108.73
	16 – 25 years	54	109.30
	over 25 years	61	90.95
	Total	206	
Work engagement	up to 5 years	21	131.14
	6 – 15 years	70	109.71
	16 – 25 years	54	93.28
	over 25 years	61	95.90
	Total	206	

	Chi-square	df	Asymp. Sig. p
REGR Work exhaustion for Work experience analysis	5.383	3	.146
REGR Work alienation for Work experience analysis	3.853	3	.278
REGR Work engagement for Work experience analysis	7.855	3	.049

a. Kruskal-Wallis Test
b. Grouping Variable: Work experience
*p<0.05

According to the results, there is no significant difference for work exhaustion (p=0.146) and work alienation (p= 0.278), but there is a statistically significant difference for work engagement (p=0.049). Higher levels of engagement were recorded in participants who were at the very beginning of their careers.

Discussion

This research investigated which factors kindergarten teachers are satisfied with at their workplace and whether their burnout is linked to their education level and work experience. According to the results, kindergarten teachers are mostly satisfied with

their job role, they cope well with the amount of work they perform, they are looking for new interests in their field of work, and they are able to withstand job pressure. Kindergarten teachers are most satisfied with the children in their groups and cooperation with colleagues, but least satisfied with the opportunities for formal professional training and with their monthly income. Although they do not think that they experience burnout at work, the self-assessment of burnout factors revealed a statistically significant difference in work engagement with regard to kindergarten teachers' education level and work experience. Those with a higher education level (bachelor's degree) and those with less work experience feel greater work engagement.

Results showing that kindergarten teachers were least satisfied with their monthly income were expected to some extent because kindergarten teachers in Croatia receive a lower monthly salary compared to that is other countries of the European Union. This can indicate a low level of investment in the development of the teaching profession and poor public appreciation (European Commission, 2019; Lee, Myers and Kim, 2009; Matković et al., 2020), which can also be reflected in a decrease in motivation for this job. Increased salary could lead to increased job satisfaction because when employees think they are receiving a salary that is in line with their job duties, their job satisfaction increases (Mohanty, 2009).

In addition to salary, the most common sources of dissatisfaction include relationships with colleagues, superiors, and parents of children they teach, having too many children in the educational group and poor kindergarten equipment (Borzaga and Depedri, 2005; Cross Ogohi, 2018; Wells, 2015). All these factors could be considered as external factors of satisfaction, those that make up the quality of the working atmosphere and working conditions, and when kindergarten teachers do not find these satisfactory, this can result in significantly higher levels of burnout (Van Houtte, 2006).

The possibility of influencing the quality of these factors is also important. If kindergarten teachers feel they can influence the improvement of their working conditions, their satisfaction will be higher (Perrachione, Rosser and Petersen, 2008). In this study, kindergarten teachers showed that they were satisfied with their cooperation with children and colleagues; it is thus possible to assume that dissatisfaction with salary is compensated by the social support they receive in their workplace (Li and Zhang, 2019).

As explained by Koludrović, Jukić and Ercegovac (2009), seeking help within the work collective and active problem solving can help prevent burnout syndrome. A good atmosphere within the work collective and friendly relations with colleagues, help solve problems with more efficiency; therefore, quality teamwork becomes a prerequisite for easier problem solving at work. Positive attitudes toward colleagues and work help in experiencing greater job satisfaction, which is important for motivation and greater personal engagement.

Education level is among the most important predictors of kindergarten teachers' quality of work, but also one of the factors that can help them cope with challenges at work (Bowman, Donovan and Burns, 2000; de Kruif et al., 2000; Lee, Myers and Kim, 2009). However, results from other research show that there is no direct link between kindergarten teachers' education level and the quality of their practice (Early et al. 2007). In this research, the results showed that a higher education level is associated with greater work engagement. This can be explained by the fact that those motivated for higher education feel an internal motivation to improve their practice, and vice versa: those who strive to improve the quality of their work will seek out more professional development opportunities. In Croatia, most kindergarten teachers have undergraduate education, and only in the past decade (since 2012) has there also been the possibility of obtaining a master's degree. It remains to be seen how education level will reflect on improving working conditions, salary increase and job satisfaction.

However, no matter how many kindergarten teachers choose further education, they should be professionally trained (Gallego and Caingcoy, 2021; Guskey, 2013). This research confirmed that kindergarten teachers with longer work experience (over 25 years) show higher levels of exhaustion than those with fewer years of service, while work alienation is most common among teachers with 16 to 25 years of work experience. Živčić-Bećirević and Smojver-Ažić (2005) confirmed that kindergarten teachers with more work experience feel more stress at work then those kindergarten teachers with less work experience. On the other hand, statistical differences were found only in the assessment of work engagement factors, whereby those kindergarten teachers who are at the beginning of their careers show a higher level of engagement than older colleagues. These results are in line with the research (Leiter, 1999; McCormack and Cotter, 2013) which showed that burnout is most pronounced in kindergarten teachers with 3 to 15 years of work experience, in the dimensions of emotional exhaustion and depersonalization.

The period between the third and fifth years of service is when young kindergarten teachers are most enthusiastic about their work; they try to apply their university knowledge and leave a good impression. That is also the period when they are most engaged in their work, but because of lack of mechanisms to successfully cope with stress at work, they could very easily decide to leave this profession (Whitebook and Sakai, 2003). Kindergarten teachers' job satisfaction can thus be sustained with the right approach and professional support within the first five years of service.

Conclusion

This study has yielded results that need to be considered if we want to improve working conditions in preschool institutions and kindergarten teachers' practice. A satisfied kindergarten teacher will certainly invest more personal potential in raising the quality of educational practice. Most people in the teaching profession are internally motivated since salary or social status are insufficiently motivating to choose this profession. That is why understanding the importance of a kindergarten teaching job, support in the public space, respect on the part of the local community and parents, and better opportunities for formal professional training can be factors that contribute to kindergarten teachers' satisfaction, which will also affect the quality of their practice.

This study has certain disadvantages as well. Future research should cover a larger number of kindergarten teachers who have a master's degree in education. It could also be explored what kind of professional training and career development would help kindergarten teachers reduce professional burnout.

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REVIJA ZA ELEMENTARNO IZOBRAŽEVANJE
JOURNAL OF ELEMENTARY EDUCATION
Vol. 17, No. 1, pp. 53–68, March 2024

DIGITAL SKILLS ASSESSMENT AND DIGITAL COMPETENCE SELF-ASSESSMENT AMONG STUDENTS AT THE UNIVERSITY OF SPLIT

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Potrjeno/Accepted
6. 2. 2024

Objavljeno/Published
29. 3. 2024

Abstract/Izvleček

The aim of the study was to determine the self-assessment of digital competences and assessment of skills among students of professional and university studies at the University of Split (N=466), as well as to check whether there is a significant difference between them in terms of their year of study, gender, and scientific field of study. The results showed that senior students claim a higher level of digital skills, and that first-year students of humanities and social studies achieve better results than senior students on the digital skills test.

Keywords:
digital literacy;
higher education;
national curriculum

Ocenjevanje digitalnih veščin in samoocenjevanje digitalnih kompetenc med študenti Univerze v Splitu

Cilj raziskave je bila primerjava samoocene digitalnih kompetenc in ocene veščin med študenti strokovnih in univerzitetnih študijev Univerze v Splitu (N=466) ter preveriti ali med njimi obstaja pomembna razlika, upoštevaje letnik, spol in znanstveno smer. Rezultati so pokazali, da študentje višjih letnikov izkazujejo višjo raven digitalnih veščin, kot tudi da študentje 1. letnika humanistike in družboslovja na preizkusu digitalnih veščin dosegajo boljše rezultate od študentov višjih letnikov iste smeri.

Ključne besede:
digitalna pismenost;
visoka izobrazba;
nacionalni
kurikulum

UDK/UDC:
004:378(497.5)

DOI https://doi.org/10.18690/rei.3084

Introduction

The term digital competence has become one of the most frequently used terms in the world of modern education. Taking into consideration that we live in the 21st century and that technology is a constituent part of our lives, the importance of digital competences is obvious.

Digital competence can be defined as the ability to use digital tools, media and resources to provide an efficient and responsible solution to practical tasks, such as seeking and processing information, designing digital products and communicating content (Norwegian Directorate for Education and Training, 2013, as cited in Engen et al., 2014). Gallardo-Echenique at al. (2015) studied 73 papers on the digital competence concept published between 1990 and 2014. They concluded that digital competence has multiple meanings and that it is an unstable concept that cannot be evaluated since currently there are not enough clear instructions.

Considering the term's breadth and the numerous definitions of digital competence available in the literature, it is clear that the term includes different literacy types: information, communication, computer, technological, Internet, media, and digital literacy (or e-literacy). The above literacy types significantly overlap. Simultaneously, each has features that make it a component part of the digital competence concept (Žuvić et al., 2016).

Although the term digital competence is hard to define, we can divide it into several smaller sections. This was done in *A Framework for Developing and Understanding Digital Competence in Europe*, known as DIGCOMP 1.0 (Ferrari, Brecko, and Punie, 2014) and DIGCOMP 2.0 (Vuorikari, Punie, Carretero, and Van de Brande, 2016), which list 21 competences in the following five areas, describing what it means to be a "digital expert": Information and data literacy, Communication and collaboration, Content creation, Safety, and Problem solving.

The Digital Competence Framework in the Republic of Croatia

All digital competence features comply with Bloom's taxonomy (Bloom, 1956) and Bloom's revised taxonomy (Anderson, 2001) such that they are expressed with active verbs in cognitive, psychomotor, and affective areas in 6 levels: beginner, researcher, integrator, expert, leader, and innovator. The digital competence features per complexity level comply with the guidelines for describing learning outcomes at a

suitable qualification level for both the European and the Croatian higher education system.

Having in mind the fact that students enrol at the faculty after having finished elementary and secondary school education, it can be concluded that the digital competences necessary when enrolling must comply with the learning outcomes for digital competence in elementary and secondary school. After finishing elementary school education, students can effectively use computer programs and the Internet. The National Grammar School Curriculum (2018) defines logical and efficient communication as one of the generic competences. This includes adopting and exchanging symbolic content, interacting with others at different levels, and using media and technical gadgets. The National Vocational Education Curriculum (2018) defines forms of work and tool usage as one of three units comprising generic competences. This unit includes communication, collaboration, information and digital literacy.

When enrolling at the faculty in Croatia, students' digital competence level usually is not tested. Acquisition of digital competences in higher education in Croatia is not defined by any documents. Therefore, this study includes a survey to examine the connection between self-assessment and objective assessment of students' digital competences.

Previous Research into Digital Competences Assessment and Self-Assessment in the Republic of Croatia and the World

Considering the breadth of the digital competence concept, it is clear that assessment and self-assessment of someone's digital competence level are not easy tasks. Nevertheless, with a clear digital competence definition and division of this definition into levels and areas, research, including assessment and self-assessment of digital competences and skills, has been successfully implemented in Croatia and the rest of the world.

Li and Ranieri (2010) researched whether digital natives (Prensky, 2001) were really digitally competent. In their study, they tested the digital competence levels of a randomly chosen group of Chinese teenagers (ninth graders). Students' digital competence was tested with the help of a digital competence assessment tool (Instant Digital Competence Assessment - iDCA), developed by a research group at the University of Florence. Results revealed that most ninth graders who took part in the study (n=317) had owned personal computers with access to the Internet at

home for around 5 years. IDCA results indicated that the students had an average passing grade. This might mean that digital natives in China are not necessarily digitally competent.

Similar research was implemented among Russian students. The research into the digital competence level needed by Russian students in second year of the Institute for Foreign Languages and Literature for distance learning indicated that Russian students still lack the appropriate level of competences and motivation for distance learning (Kozhevnikova, 2013). Kozhevnikova (2013) thinks that the reason might be found in the fact that the Russian educational system encourages the development of only a few digital competence components – computer and technological literacy. On the other hand, the development of the third important component – information literacy – is insufficiently encouraged. Information literacy implies critical thinking, searching, analysis, and synthesis of data, as well as the capacity to evaluate the reliability of Internet sources.

Engen et al. (2014) also researched the difference between digital competence self-assessment and the real level of skills necessary for using digital tools and applications. The study was implemented among Norwegian students in their first year of teacher education studies. The results indicated that although the frequency of digital technology usage correlated with the level of digital competence self-assessment, it did not necessarily correlate with efficient use of digital tools and applications.

Sciumbata (2020) surveyed the digital skills of Italian students from the latest generation of digital natives enrolled in university humanities courses. Results show that participants tend to overestimate their digital skills and that they lack knowledge of basic topics. Besides outlining the digital competences, this study points out digital skills that should be strengthened, and which are often taken for granted by teachers and institutions, although students need those skills in their university and professional life, but also for their daily digital needs.

Therefore, according to Eurostat (2019), the questionnaire results can be considered as an indicator of an individual's digital competences and skills. It is important to emphasize that, among EU member states, Croatia had the largest portion of individuals aged 16 to 24 with well-developed digital skills: 97 %. For the age group from 25 to 29 years of age, Croatia took third place, with 92 % of persons with digital skills, right after Iceland and Finland. However, Croatia is at the bottom of the table,

with 64 % of persons with digital skills, if we consider the group aged 35 to 44 (Eurostat, 2019). A study conducted among students at China's Gansu Agricultural University in 2019 (Zhao et al.) investigated students' perceptions of their level of digital competence in the context of higher education. The majority of surveyed students consider their level of digital competence to be high, especially in the areas of information and data literacy and communication and collaboration. The results of the study also showed that student self-assessment of digital competence decreased when the complexity of the tasks offered to them increased, and the authors concluded that the level of digital competence among these university students in China still had room and potential for further development.

Tzafilkou et al. (2022) created an instrument for measuring the digital competences of students in higher education. The instrument includes components of online learning and collaboration, social media, smart and mobile devices, security and data protection and was applied to a sample of 156 undergraduate and postgraduate students immediately before and at the beginning of the crisis caused by the coronavirus in 2020. It revealed that individual factors such as field of study, computer experience and student age had a significant relationship with the components of the instrument, while no significant relationship was revealed with regard to student gender.

Research Goal

The research goal is to determine the digital competence and skills self-assessment among first-year and senior students. An additional goal is to examine whether there is any significant difference between the groups by students' gender and scientific field of study.

Research Questions

1. Are there any differences in digital competence self-assessment between first-year and senior students with respect to students' scientific field of study?
2. Are there gender differences in relation to the students' digital competence and skills self-assessment?
3. How successful are the students in the field of digital skills with respect to study year and type of study?

Hypotheses

1. Senior students are expected to achieve higher levels of self-assessment of digital competences regardless of the type of study.
2. It is expected that there will be no differences among students in self-assessment of digital competences and digital skills with regards to gender.
3. Senior students are expected to be more successful in digital skills regardless of the type of study.

Research Methodology

Sample of Respondents

Students from professional and university studies at the University of Split participated in the study. Participation was voluntary, anonymous and free of charge. Data collection was conducted in groups, with the size of the groups varying from 20 to 40 participants. A total of 547 students, joined the study, of whom 466 completed the questionnaire and had their results further processed. The respondents' age was between 18 and 30 years. There were 247 (53.01%) students from the social sciences and humanities and 219 (46.99%) students from science and technical studies. There were 169 first-year students (36.26%), and 297 students in all other years of study (63.74%). A total of 352 (75.54%) female students and 114 (24.46%) male students participated in the study.

Procedure

The research was conducted from January to April 2020, using an online version of the Digital Competences Self-Assessment Questionnaire and the Digital Skills Assessment Questionnaire on a sample of 466 students from the University of Split. The questionnaire was distributed through the online channels of the University of Split, and in the introductory part of the questionnaire, participants were informed about the purpose of the survey and that they could withdraw at any time. A total of 81 students withdrew from the survey, and their results were not taken into account when processing the results. In data analysis, the statistical software STATISTICA14 (Tibco Software Inc) was used to analyse the data.

Instruments

For the purposes of the research, a questionnaire was modified according to the following online sources: Online Self-Assessment Tool (European e-Learning Institute, 2019), which is harmonized with the DIGCOMP research project and test materials of the ITdesk.info -a project of computer e-education with open access (2011). The questionnaire consisted of two parts.The first part was the Digital Competences Self-Assessment Questionnaire, which included 21 statements consisting of 5 subscales or five areas of digital competence. The areas of digital competence were as follows: the communication and collaboration area (DC1) (including the following competences: interaction via technology, information and content sharing, joining Internet citizenship, cooperation via digital channels, acceptable behaviour on the Internet); the information and data literacy area (DC2) (including the following competences: browsing, searching, and filtering information, evaluating information, and storing and obtaining information); the digital content creation area (DC3) (including the following competences: developing content, integrating and processing content and knowledge, understanding copyright and licenses, and programming); the safety area (DC4) (including the following competences: device protection, personal data protection, health protection and environmental protection), and the problem solving area (DC5) (including the following competences: technical problem solving, identifying needs and technological responses, innovative and creative use of technology and recognizing digital competence insufficiency).In the Digital Competences Self-Assessment Questionnaire, the respondents marked their competence assessments on a Likert-type scale, with 1 meaning poor, 2 average, 3 good, and 4 very good. Table 1 includes descriptive parameters of the Digital Competences Questionnaire.

Table 1 Descriptive parameters of the Digital Competences Questionnaire subscale (N=466)

Subscales	N	M	SD	MIN	MAX	CRONBACH'S ALFA	INTER-ITEM r
DC1	6	19.16	3.65	8	24	.86	.52
DC2	3	9.75	1.82	4	12	.84	.63
DC3	4	10.65	2.68	4	16	.74	.45
DC4	4	11.97	2.86	4	16	.85	.61
DC5	4	10.44	2.93	4	16	.88	.65

Legend: DC1: communication and collaboration area; DC2; information and data literacy area; DC3: digital content creation area; DC4: safety area; DC5: problem solving area.

The reliability coefficient for all subscales ranges from .74 to .88 and indicates an appropriate level of reliability for all subscales.
The second part was the Digital Skills Questionnaire consisting of 15 questions. It included the following questions: Arrange in proper order the steps in saving a file (DS1); How do we select an entire document? (DS2); Which program would you use for computer data processing? (DS3); Indicate how we sit properly in front of the computer (DS4); Mark the programming languages for creating a website (DS5); What are the functions of a firewall? (DS6); What part of the address http://itdesk.info do we call the protocol (transfer rules)? (DS7); Indicate whether the statement is true or false: The message with an attachment that we send as a reply that also contains that attachment to the received message has the prefix "Fw:" (DS8); What is the name of the database line in which we enter the content (text, number, date)? (DS9); Write in correct order the phases you go through when you need to convert a task to a computer-acceptable format (DS10); Choose a digital tool for online collaboration and communication (DS11); What procedure do you use to increase data security? (DS12); If the Internet address starts with "https", it is about ... (DS13); What do we call text files that web pages save to a computer using an Internet browser? (DS14); and What is e-waste? (DS15). The respondents' task was to select the answer they deemed correct/true. The results were structured so that the correct answers were marked with 1 and incorrect with 0. Questions referred to information literacy and examined students' digital skills.

Results

To respond to the first research question and check whether there are differences between digital competences self-assessment by study year and type of study, t-tests were calculated. The results are shown in Table 2.
The results show a significant difference in the subscales self-assessment of digital competence and collaboration (DC1), information and data literacy (DC2), creation of digital content (DC3), and security in the form of device protection, problem solving (DC5) between 1st year students and senior students in the social sciences and humanities. Senior students achieve significantly higher results on almost all subscales, as well as on the overall score of digital self-assessment. By testing the difference in digital competences self-assessment among students in science and

technical studies, a statistically significant difference was determined only in relation to the problem-solving self-assessment subscale (DC5).

Table 2: T-tests for the testing difference in the digital competences among students in the humanities and social studies

Subscales	First year of study (N=56) M (SD)	Senior students (N=191) M (SD)	t (df)
DC1	2,77 (,65)	3,35 (,54)	6,60* (245)
DC2	2,77 (,64)	3,38 (,54)	7,00* (245)
DC3	2,33 (,61)	2,73 (,67)	3,96* (245)
DC5	2,26 (,65)	2,57 (,70)	2,94* (245)
DC in total	6,60 (1,02)	7,42 (1,01)	5,07* (239)

Note: *p<.01

Legend: DC1: communication and collaboration area; DC2: information and data literacy area; DC3: digital content creation area; DC5: problem solving area

Senior students are significantly better at assessing competences referring to technical problem solving, identifying needs and technological responses, innovative and creative technology usage and recognizing digital competence insufficiency $t(217)=-2.06$, $p<.05$. Differences in all other subscales as well as in the total result of digital self-assessment are not statistically significant. Given these results and the evident differences in the self-assessment of digital competences between first-year students and senior students, regardless of the type of study, the first hypothesis was partially confirmed.

To respond to the second question, gender differences in relation to digital competences self-assessment and digital skills assessment were tested among students in all study areas (N=466). The t-tests indicated significant gender differences only in the area of problem-solving self-assessment (DC5). Male students achieve higher results than female students in this field $t(464)=-5.21$, $p<.001$. In other words, male students assess their problem-solving competences as significantly greater than do female students. This partially confirmed the second hypothesis.

Furthermore, to respond to the third research question and to test whether there are any differences among students' digital skills by year and type of study, Chi-squared tests were implemented, as presented in Table 3 and Table 4.

Table 3: Chi-squared test to examine the differences in relation to digital skills between first-year and senior students in the humanities and social studies

Questions	Students, 1st year (N=56)		Senior students (N=191)		Chi squared
	% Correct	% Incorrect	% Correct	% Incorrect	df (1)
DS1	96.43	3.57	81.28	18.32	7.40**
DS2	92.86	7.14	98.43	1.57	4.88*
DS3	5.36	94.64	6.81	93.19	.15
DS4	60	40	43.46	56.54	4.49*
DS5	44.64	55.36	15.71	84.29	20.94**
DS6	31.37	68.63	67.02	32.98	21.22**
DS7	60.71	39.29	47.64	52.36	2.95
DS8	44.64	55.36	24.08	75.92	8.93**
DS9	50	50	41.88	58.12	1.15
DS10	92.86	7.14*	92.15	7.85	.03
DS11	69.64	30.36	78.02	21.99	1.66
DS12	30.36	69.64	13.09	86.91	9.14**
DS13	32.14	67.86	16.75	83.25	6.35*
DS14	57.14	42.86	37.70	62.30	6.71**
DS15	57.14	42.86	32.98	67.02	10.67**
DS16	33.93	66.07	14.14	85.86	11.19**

Legend: DS1 - DS16: Questions Note: *p<.05 **p<.01

Table 4: Chi-squared test to examine the differences in relation to digital skills between first-year and senior students in science and technical studies

Subscales	Students, 1st year (N=113)		Senior students (N=106)		Chi squared
	% Correct	% Incorrect	% Correct	% Incorrect	df (1)
DS1	84.07	15.93	83.96	16.04	.00
DS2	93.81	6.19	98.11	1.89	2.57
DS3	47.79	52.21	40.57	59.43	1.15
DS4	41.59	58.41	37.74	62.26	.33
DS5	**73.45**	**26.55**	**84.76**	**15.24**	**4.18***
DS6	57.52	42.48	42.45	57.55	4.96
DS7	2.65	97.45	5.66	94.34	1.25
DS8	34.51	65.49	30.19	69.81	.46
DS9	61.06	38.94	60.38	39.62	.01
DS10	87.61	12.39	88.68	11.32	.05
DS11	71.43	28.57	65.09	34.91	1.01
DS12	26.55	73.45	28.30	71.70	.08
DS13	28.32	71.68	29.25	70.75	.02
DS14	45.13	54.87	40.57	59.43	.46
DS15	47.79	52.21	52.83	47.17	.55
DS16	28.32	71.68	27.36	72.64	.02

Legend: DS1 - DS16: subscale, Note: *p<.05 **p<.01

Discussion

The main goal of this research was to establish the level of digital competences and skills self-assessment among first-year students and senior students. An additional goal was to examine whether there was any significant difference among students depending on gender and scientific field of study (social sciences and humanities, and science and technical studies).

Senior students achieve significantly better results on almost all subscales and in the total digital self-assessment result. This indicates that the studying process has a relevant impact on digital competences self-assessment. Performing study tasks that require the use of digital technology over the course of years impacts the sense of possessing digital competences.

Similar results were obtained in the research on attitudes related to technological possibilities in future work conducted on students of the 5th year from various teacher study programs at the University of Zagreb in the academic year 2017/18 (Brčić, 2020).

Among other things, the research examined the self-assessment of students' digital competences. The results showed that final year students considered themselves digitally competent both for the use of technology in private life and for the use of technology in their future teaching work. Students at the University of Zagreb stated that during their studies they did not practice teaching with IT equipment, but they would like to enrich the performance of their lessons with additional content if the technical conditions were fulfilled.

Results of research conducted at the University of Split and the University of Zagreb can be related to the experience gained by senior students during their years of study and to tasks that require digital competences such as writing seminar papers, searching the Internet to collect information, sending emails and similar. In this manner, they often use digital technology; they increase their digital skills and acquire digital competences. The above also impacts their self-assessment.

After examining the differences in digital competences self-assessment among students of science and technical studies, a statistically relevant difference was established only in relation to the problem-solving self-assessment subscale (DC5). Senior students are much better at assessing their competences necessary for technical problem solving, identifying needs and technological responses, innovative and creative use of technology, and recognizing digital competence insufficiency. This is partially in line with the first hypothesis. This result can be explained by the

fact that senior students in science and technical studies have greater knowledge of the technical problem-solving process, which they acquired while studying. Consequently, this results in a greater level of skill in relation to creative and innovative use of technology and better digital competences self-assessment in relation to this area. Furthermore, the comparison of digital competences self-assessment between female and male students indicated that there were relevant gender differences only in relation to the problem-solving self-assessment (DC5).
Male students achieve better results than female students; in other words, they assess digital competences needed for problem solving as significantly greater than female students do. This is partially in line with the second hypothesis.
The results of this comparison correspond to the Eurostat research results on digital skills among young people in Europe. In accordance with the above research, Croatian female students aged 16 to 24 had the worst result precisely in the field of problem solving (Eurostat, 2019).
Research on the level of digital competences among students and high school students from vocational schools in Germany (Wild and Schulze Heuling, 2020) also showed that male respondents achieved better results than females on the dimension "problem solving and security". An insight into the digital competence self-assessment research on gender differences among undergraduate students of social pedagogy at the University of Salamanca (Spain) also reveals that the gender variable impacts the research results. The results of this study indicated that, among future social instructors, male students achieved better results than female students in relation to knowledge and application. On the other hand, female students indicated better results in the attitude towards ICT (Cabezas González and Casillas Martín, 2018). Gender differences are an ongoing topic in the digital world. Women are encouraged to take an active part in the digital sector at the level of the European Union. Therefore, upon the proposal made by the European Commission, on 9 April 2019, 27 EU member states and Norway signed the Declaration of Commitment on Women in Digital. With this Declaration, the signatory states obliged themselves to encourage an active and important role for women in the digital world and to contribute to gender equality in the IT sector by cooperating with the public and private sector and civil society organizations (European Commission, 2019).

By comparing digital skills between first year and senior students in the humanities and social studies, a significant difference was established. First-year students achieve much better results than senior students in relation to the following skills: ordering the steps for saving a file from the first step to the last (DS1); knowing which program to use for computer data processing (DS3); identifying the correct manner of sitting at a computer (DS4); knowing website names, protocols and transfer rules (DS7); selecting digital tool for online collaboration and communication (DS11); knowing which procedure to use to increase data safety (DS12); knowing website address markings (DS13); naming text files saved by websites on a computer with the help of an Internet browser (DS14), and knowing what e-waste is (DS15). This result can be explained by the fact that students in humanities and social studies do not attend enough courses through which they are able to acquire digital skills.

The digital skills they acquire during their studies while performing student tasks are not formally defined. Therefore, we can conclude that their development largely depends on individual effort. Since the first-year students attended IT lessons during secondary school education, we can conclude that they still remembered their acquired skills and therefore achieved better results than senior students.

Unlike in the case of the students from humanities and social studies, the results of the comparison between first year and senior students in science and technical studies do not show any relevant difference in digital skills. The only significant difference in favour of the senior students can be seen in the area of knowing which programming languages to use for website development (DS5). Therefore, we can conclude that senior students acquired knowledge on programming languages during their studies and that this is why they showed better skills in this area. We can thus conclude the third hypothesis is only partially confirmed.

Conclusion

These students use digital technologies for fun, informal learning and communication, but also during their studies to perform a range of tasks. The development of digital competences and skills is mentioned in different forms in the curriculums for elementary and secondary school education. Nevertheless, after finishing secondary school education and during the procedure of enrolling in a faculty in Croatia, the digital competence level of future students is not tested.

The acquisition of digital competences and skills in higher education in Croatia is not defined by any national documents.

Pursuant to these facts, we can conclude that any development of digital competences and skills after secondary school education depends exclusively on the individual's will and interest and on the representation of that content in certain courses and faculties, a situation which impacts the development of digital competences and skills. It is important to emphasize that the lack of formal education aiming at increasing digital competences and skills is a problem not exclusively among students. It is also a problem among teachers in the higher education system. Teachers are offered numerous professional training sessions aimed at the development of digital competences and skills.

However, these are not obligatory, and the acquisition of such competences and skills is not defined by any national document. Kukulska-Hulme (2012) discussed this issue and stated that the faculties and their teaching staff must accept technology, not only as a technological assistance tool in their teaching, but also as a tool for research and professional development. Considering that one of the most important roles of teachers is to present a professional role-model for their students, this could encourage students to develop their own digital competences and skills (Kukulska-Hulme, 2012). Considering the fact that, in this study, senior students, regardless of the type of study, showed greater digital competence self-assessment, but not significantly better digital skills than their first-year student colleagues, we can conclude that students do not sufficiently develop their digital skills during their studies. Having in mind the importance of this problem, the development of a relevant national document is advised. Such a national document would determine the acquisition of a high level of digital competences and skills during the study period and define it as one of the key learning outcomes in higher education.

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REVIJA ZA ELEMENTARNO IZOBRAŽEVANJE
JOURNAL OF ELEMENTARY EDUCATION
Vol. 17, No. 1, pp. 69–84, March 2024

KEY TRENDS IN CHANGES TO PRIMARY EDUCATION IN THE CZECH REPUBLIC AFTER THE 1989 VELVET REVOLUTION

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Potrjeno/Accepted
29. 11. 2023

Objavljeno/Published
29. 3. 2024

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Abstract/Izvleček

The aim of the review study is to reflect on key trends in the process of transformation of primary education in the Czech Republic after the 1989 Velvet Revolution. The major milestones in the transformation process in terms of education policy are reflected upon. The core of the study is an analysis of the changes to primary education in the reality of school practice, including the most significant innovative approaches. The study concludes with an evaluation of the development of Czech primary education in the context of international trends and with reflection on the prospects for its further development.

Keywords:
primary education, transformation, education policy

Ključni trendi sprememb v osnovnošolskem izobraževanju na Češkem po "žametni revoluciji" leta 1989

V pregledni študiji razmišljamo o ključnih trendih v procesu preoblikovanja osnovnega šolstva na Češkem po "žametni revoluciji" leta 1989. Osredinjamo se na glavne mejnike procesa preobrazbe z vidika izobraževalne politike. Jedro študije predstavlja analiza sprememb v osnovnošolskem izobraževanju v šolski praksi, vključno z najpomembnejšimi inovativnimi pristopi. Študijo sklenemo z oceno razvoja češkega osnovnošolskega izobraževanja v kontekstu mednarodnih smernic in z razmislekom o možnostih nadaljnjega razvoja.

Ključne besede:
osnovnošolstvo, transformacija, izobraževalna politika

UDK/UDC:
316.77:004

DOI https://doi.org/10.18690/rei.2921

Introduction

The aim of this review study is to reflect on the main directions of the transformation of primary education in the Czech Republic after the 1989 Velvet Revolution in the broader context of social and political changes since then and from an international perspective. The reform processes will be presented in terms of (1) education policy, (2) the theoretical background and key concepts, and (3) practical attempts to transform primary education in the reality of school practice. The guiding methodological principle is an analytical-synthetic approach that takes into account an interdisciplinary view of the issues under consideration.

The context of education policy

Major political and social changes in the Czech Republic have necessitated fundamental changes in many areas. Intensive efforts to transform the education system have been observed since the early 1990s (Spilková, 1997; Walterová, 2004). During the 1990s, several basic approaches were promoted in the form of divergent starting points for transformation (Kotásek, 2004).

Immediately after the political changes of November 1989, a line of negation of the past and restoration of the "status quo ante" became prominent. This meant rejecting the state of education that existed at that time and trying to eliminate the shortcomings in education caused by the Communist regime between 1948 and 1989, combined with a return to the historically proven experience of the interwar period, when Czech education was among the best in the world. This line of negation of the existing state was based on a relatively robust critique of school education in terms of its overall concept (insufficient consideration of the pupil's personality, needs, and abilities and the conditions for learning) and goals (a one-sided emphasis on knowledge and rote learning), content (oversized curriculum content, defined in detail and binding in the syllabus), and teaching processes (the dominance of frontal teaching and verbal methods and insufficient support for intrinsic motivation to learn and building a safe social climate in the classroom).

Another stream of opinion is the preservation of the status quo, which in contrast, considered Czech education to be essentially good, high-quality, and not requiring fundamental change, but rather partial changes that had the character of adaptation to new conditions. There was a liberalising current that placed the emphasis on the demonopolisation of education as the main tool for change.

In the first half of the 1990s, the role of conceptual starting points for the transformation of education was significantly underestimated. Even though there was no education policy with a clearly formulated vision of the future direction of Czech education that was consensually adopted across political parties, a number of relatively radical interventions were implemented in the education system: the restoration of eight-year grammar schools and a selective system, curricular changes, etc.

Since the second half of the 1990s, an approach has prevailed that goes beyond both the position of mere negation of the past and the restoration of the status quo ante and also the position of preserving the status quo. The basic starting points in designing the transformation of education involve analysis of the key trends in the development of the education systems in developed countries, a critical assessment of the situation in the Czech Republic, and a prognostic view of the future of Czech education.

The culmination of this development was the creation of the National Programme for the Development of Education, known as the White Paper (2001), which represented a fundamental turning point in the transformation process. For the first time in ten years of predominantly spontaneous and non-conceptual development, the need for fundamental systemic change based on a change in the paradigm of education was officially declared at the governmental level.

Following the White Paper, the Framework Programme for Basic Education (2004) was conceived during the years 2001-2004; in this, the requirements of the state were specified by defining the basic framework in the form of goals, content, and expected results, which became the starting point for creating the school's own educational programme. The two-level concept of the curriculum was a significant change in Czech education. It is necessary to emphasise that in the context of the development of Czech education before 1989, these two key documents represented a fundamental change, a "Copernican" turn in the overall paradigm of school education.

Other post-Communist countries in Central Europe (Slovakia, Poland, and Hungary) also underwent similar developments in the approaches taken by education policy to the transformation of education (Kosová and Porubský, 2011).

The theoretical background to and guiding principles for the transformation of primary education

The idea of the humanisation of education became the key principle in the transformation of Czech education after 1989, in terms of "a humanising programme of school reform" or humanisation "as a crystallising axis of transformational changes" (Helus, 2003; Kotásek, 2004; Spilková et al., 2005). In this sense, the reform changes in the 1990s followed the progressive tradition of Czechoslovak education between the wars.

The focus on the humanisation of the school represents a significant strengthening of the anthropological orientation, understood as a "turn to the child", involving increased attention to his/her needs, interests, and opportunities for holistic personal development. In the context of the development of Czech education before 1989, the emphasis on the child and his/her personal development was indeed a relatively radical turn in the meaning of school education.

Unlike other levels of education, the idea of humanisation was adopted across the professional community as a key starting point for the desired changes in primary education and primary schools. The concept of primary education as child-oriented and as emphasising personal development became a shared guiding concept – child-centred primary education, personal development primary education (Lukášová, 2003; Helus, 2003; Spilková, 1997).

This basic principle – the turn to the child – has a fundamental influence on the teacher's approach to the child and on the changes in communication and interaction at primary school. The quality of the teacher-pupil relationship is crucial in primary education, as the teacher is an important reference person for the child at this age, a "key person in childhood".

A quality social and emotional classroom climate is an influential factor in the socialisation of pupils, which is an important developmental task at this age. The importance of a safe environment with a predominance of positive emotions is related to the close connection between cognitive and affective aspects of learning, which has been highlighted by several authors on the basis of their research results (Brown 1971; Stuchlíková, 2002). The support of positive emotions in learning processes has a formative significance for many other qualities of the child's personality.

Another significant characteristic of the personally developing concept of primary education is the change in the hierarchy of educational goals. The dominant goal orientation towards the holistic development of the pupil's personality is an appeal to a balanced focus on knowledge, skills, attitudes, and values with regard to the intentions of Delors' four pillars, or four key goals of education - learning to know, learning to act, learning to live with others, learning to be – to which the school should pay equal attention (Delors, 1996; Stará and Starý, 2019).

When the content of teaching is being designed, the goal is not quantity, but quality, i.e. the selection of a meaningful curriculum. For anthropologically-oriented primary education, an integrative approach to the content and the creation of broader educational units, and topics enabling the interconnection of knowledge are important. Supported by psychological background (children's syncretism and the integrity of cognition, which are typical up to about nine years of age), emphasis is placed on creating a holistic picture of the world with an indication of the basic context, in contrast to overwhelming children with isolated and partial knowledge about the world.

For the content of primary education, it is essential to connect the curriculum with the real world and with life situations that the child understands and is close to (Bertrand, 1998). These approaches support the personalization of learning, making it meaningful for the learner, which is important for the development of children's intrinsic motivation.

A constructivist, or rather social constructivist approach to cognition and learning corresponds to these approaches to the goals and content of primary education. Discovering and constructing knowledge on the basis of one's own activities, experience(s), and personal interpretations of the world are of fundamental importance. An important feature of the constructivist concept is respect for what is termed the close experience of the pupil, i.e. based on what pupils really know, what they have ideas about, and their experiences.

One of the key principles is an emphasis on cooperative learning (Johnson and Johnson, 1994), which appreciates the potential that lies in the use of cooperative relationships between pupils to improve the learning of each of them. The method used to assess pupils plays an important role in the personally developing concept of primary education. Rather than quantitative, summative evaluation, a qualitative, formative, and individualised approach is preferred (Boyle and Charles, 2014; William, 2011).

In the Czech context, a significant shift in the current concept of assessment is an emphasis on the openness of assessment to development, i.e. the continuous provision of feedback on the course of learning, assessment that is focused on the processes of learning (and not only on its results). Individualisation of assessment that takes into account the individual conditions and potencial of pupils and is in relation to their own previous performances is also a significant change, since in Czech pedagogy there is a deeply-rooted tradition of evaluation based on the comparison of pupils with each other.

So much then, for the declared guiding principles of the transformation of primary education. However, the new paradigm is also the subject of criticism in the professional community (Dvořák, 2010; Štech, 2016). It is mainly a matter of the degree of emphasis on the anthropological orientation of primary education and concern that the turn to the child not be exaggerated and not mean a return to sentimental idealization of the child and submission to children's needs, and the logic of natural and spontaneous development. It is also a matter of whether the call for fundamental change in the relationship between teacher and pupil does not mean abandoning the leadership role of the teacher, and whether the emphasis on the non-cognitive functions of primary education does not imply a retreat from the cognitive goals of the school, etc.

Changes in primary education in the reality of school practice

From the intentions of educational policy, conceptual starting points, and theoretical principles, we now turn to real processes in the transformation of primary education. We will focus on the most important phenomena in the transformation of primary education in terms of external and internal reform.

External reform

From the point of view of external reform, the overall context, the type of education system, and the interconnection of primary education (institutional, curricular) with the previous and following levels of education are important. In the first half of the 1990s, as part of the approach to education policy – the restoration of the status quo ante – the tradition of eight-year grammar schools was renewed, and with it a selective education system.

This meant a less favourable context for the basic functions, concepts, and goals of primary education in terms of its completion, a certain closedness of this cycle of education, and increased pressure on performance as a criterion of subsequent external differentiation.

Initially, the introduction of a selective system was perceived by most of the parental public and a significant number of politicians, especially right-wing ones, as a positive phenomenon in the process of overcoming the legacy of socialist schools. A significant role was played by the way the unified 'basic school"(compulsory education) was implemented in the socialist era in terms of its uniformity and underestimation of individual differences between pupils and the need for internal differentiation. Czech experts warned of the risks, and foreign experts warned against a mechanical return to early external differentiation of pupils (OECD Reviews of National Policies for Education Czech Republic, 1996). In the Czech context, however, this controversial issue remains until today more of an ideological and political problem than an eternal professional topic.

At the very beginning of the 1990s, there were reflections on a closer connection between levels of education that had hitherto been separated: pre-school and primary. The inspiration came from various forms of functional interconnection in developed European countries, either in the form of structural integration (the integration of pre-school classes into primary education, as in the Netherlands or England, or connecting pre-school, preparatory classes "Vorklassen" to primary schools, as in Germany, Belgium, or Luxembourg), or through continuity in the curricula of both educational institutions (as in France and some German federal states) (Spilková, 1997).

The organisational and curricular interconnection of these educational levels in the Czech Republic was experimentally verified at several dozen schools. From the educational policy side, the issue of linking pre-school and primary education has not been systematically addressed and remains in the competence of the founders and management of schools.

The extension of primary education from four to five years was a significant change (this began from the 1996/97 school year onwards on the basis of the 1995 amendment to the Act on the System of Primary, Secondary, and Higher Vocational Schools). The lengthening of primary school attendance was unreservedly seen positively as a return to tradition.

Attendance at what is called "basic school" (primary and lower secondary education) was extended from eight years to nine (five at the first level - primary education, while the second level - lower secondary education - remained four years; the age at which children started school remained the same, at six years old). Pupils complete their nine years of compulsory schooling either at basic school (the first and second level) or after the first level of basic school in the first years of "gymnázium" (eight years secondary grammar school - lower and upper secondary education) .

In terms of the overall concept of primary education, it is important to address the issue of the integration or exclusion of pupils with various types of disadvantages. Until 1989, there was a distinct tendency to segregate this group of pupils into specialised schools and facilities. During the 1990s, a clear trend towards the integration of these pupils can be observed in the practice of primary schools. However, for a long time the state did not provide schools with the necessary support and conditions; everything was based on the goodwill and determination of the school management and the dedication of individual teachers. It was not until 2016 that the concept of inclusive education was enshrined in legislation and widely implemented in mainstream education (Tomková and Hejlová, 2018; Štech, 2021).

The first years of efforts to put inclusive education into practice in schools show what a great change it is for schools. This means that schools, principals, teachers, parents, and pupils must understand this change, prepare to manage it, and then try to implement it. A key role in this process at the school level is played by the principal, who must be able to communicate the need for change in a leadership role, communicating openly not only the benefits but also the challenges that the change will bring (Pivarč, 2020). He or she must be able to attract teachers and other stakeholders and create the conditions for integration (cultivating the school culture, motivation, targeted teacher training, etc.).

Research data confirms that teachers themselves have a decisive influence on the quality of the implementation of inclusive education at the classroom level (Tomková and Hejlová, 2018). The basic prerequisite is their conviction of the correctness and meaningfulness of this idea, value, and attitude. Something that is fundamental to this set of prerequisites and conditions for the successful implementation of inclusive education is the acceptance of diversity and its potential as an enrichment and opportunity for growth and learning for all pupils (Tomková and Hejlová, 2018; Pivarč, 2020).

An attitudinal-value dimension with a strong influence is the understanding of the main task of the teacher's pedagogical work as achieving the educational maximum of each child.

Equally important, however, are the knowledge and skills related to the didactic transformation of the curriculum, teaching methods, and forms of organization, and more general obstacles that may arise in learning. Knowledge and understanding of the possible obstacles are the basis for the didactic transformation of the content of a different nature. Experience from the first years of implementation has also shown the importance as a factor in the successful implementation of inclusive education of the quality of cooperation with other actors – in particular teaching assistants, special educators, school psychologists, and parents (Štech, 2021).

Promoting quality inclusive education on a wider scale is an important task for the years to come. To manage teaching in a heterogeneous classroom teachers need a range of new professional competencies that they currently lack and in which they have not been trained. The wider context – the attitudes of politicians, parents, and the wider public to this fundamental change – is also important. Attitudes towards the concept of inclusion in education are still quite heated (Štech, 2021). The long tradition and high level of special education and the traditional high level of selectivity within the Czech education system have undoubtedly influenced the attitudes of both professionals and the public.

Internal, bottom-up reform

Since the beginning of the 1990s, it has also been possible to observe a significant current which has seen the focus of reform changes in what is known as internal reform, or bottom-up reform. Some teachers have shown a strong desire for change, enthusiasm, and a high degree of involvement in the changes. A significant source of inspiration in this spontaneous activity is the reform pedagogy movement (developing worldwide since the beginning of the 20th century) (Štech, 1992; Rýdl, 1992). In the Czech context, there has been a renaissance of ideas which were strongly suppressed for more than forty years in connection with the onset of Communist power and its ideology. These were, in particular, an anthropological orientation of primary education, understood as a "turn to the child", emphasis on support for the holistic development of the child's personality, consideration for individuals educational needs, an emphasis on respectful communication with pupils

and care for a safe climate in the classroom, and activity-based and experiential teaching methods.

In terms of internal reforms in education, the most significant changes are taking place in primary education. Many teachers at this level of education identified with the key principles of the transformation and tried to implement these in their teaching. These teachers were very active in various newly formed professional associations; they shared their experiences with innovative activities, published, and organised educational events in order to inspire and recruit more teachers for change.

One of the first areas in which innovative teachers gained strength was the content of the curriculum (Spilková, 1997). They launched their own attempts to alleviate the oversized nature of the curriculum, its complexity, the amount of theoretical knowledge, etc. They created methodological materials, wrote textbooks, and participated in the creation of educational programmes. Another area in which there have been important changes over time is that of teaching/learning processes. The strengthening of respect for the individuality of pupils, their needs, preconditions for learning and opportunities for development, etc., represents a significant change. The quality of communication between teachers and pupils is changing significantly, as is the effort to cultivate social communication between pupils. The care of teachers for a quality social and emotional climate in the classroom is also related to this. Research data (most of it concerning pupils in the fourth and fifth grades of primary school) has already proved the positive perception of the classroom climate by pupils at the turn of the century (Linková, 2001). It is also possible to observe the efforts made by teachers to restore the disturbed trust between schools and parents and to seek new forms of quality communication and cooperation (Rabušicová and Pol, 1996).

There have also been significant changes in methods and learning strategies. These involve concern a strengthening of the emphasis on activity, empirical, and experiential methods. The importance of play in teaching as a full-fledged method of learning in this age group is being rehabilitated. Many teachers are moving from the hitherto dominant frontal mode of teaching to a more significant use of individual work and cooperative learning.

Since the early 1990s, teachers have put a great deal of effort into changing pupil assessment. Many of them have abandoned classification and grading and replaced these with verbal assessment of pupils, initially in what is called the experimental

mode. Initially, teachers faced significant problems with the reserved attitude of the parental public (teachers had to obtain the written consent of parents to verbal assessment), with some pupils who missed marks as their motivation to learn, with their own inexperience and unpreparedness for the new way of assessment, etc. At present, the way in which pupils are assessed is the responsibility of schools; it is part of the School Educational Programme. In the field of primary education, it is common for schools to have several forms of assessment functioning side by side in one class – grading, verbal assessment, or a combination of both.

We conclude our presentation of key efforts in the area of the transformation of primary education by reflecting on the alternative concepts and innovative projects that have had the most significant inspirational potential and influence on teachers. From among the alternative pedagogical approaches based on original philosophical and psychological starting points, Steiner/Waldorf education and the pedagogy of Maria Montessori have prevailed most significantly in the Czech environment. In the first half of the 1990s, they had a significant influence on the cultivation of pedagogical thinking and practical reform efforts (Rýdl, 1992).

Some advocates of alternative approaches aspired to a broad scope in the process of public schools transformation and, later with the expansion of other innovative programmes, focused inward on improving existing schools and the creation of new schools mostly within private schools. Out of a total of 4238 primary schools in the Czech Republic, there are currently 20 Waldorf primary schools, and the principles of Montessori pedagogy are applied in more than thirty primary schools (these schools are mostly private; sometimes their founder is the city council).

Innovative projects and programmes of a complex nature, which do not have such a distinct pedagogical concept based on specific philosophical and psychological starting points, have had a much greater influence on the transformation of primary education within the public school system. The international programmes Step by Step, Reading and Writing to Critical Thinking, and Health Promoting School are among the most widespread. Other concepts that have provided inspiration for changes in primary education include Drama in Education and Integrated Thematic Instruction (Kovalik, 1993). In the last 15 years, the Feuerstein instrumental enrichment intervention programme, which focuses on targeted cognitive development and remediation of cognitive deficits, has also gained significant traction (Feuerstein, Rand, Hoffman, and Miller, 1980).

Conclusions, prospects for the further development of primary education

A look at the transformation of primary education in the Czech Republic over the past thirty years shows that there have been significant changes. A new concept of humanistic and anthropologically-oriented primary education has been introduced in terms of its basic features.

In some respects, this was such a fundamental reversal of the developments before 1989 that it is still at subject of discussion among experts and the general public as part of considerations about prospects for the further development of primary education. The focus of attention is on the question of the polarity between a school of performance (achievement orientation) versus one focusing on personal development. From the 1950s to the beginning of the 1990s, a performance-oriented concept of primary education prevailed in this country. Performance in terms of the norm and comparisons was absolutized and individual preconditions for performance were not sufficiently taken into account. However, in the last thirty years, there has been a significant shift towards a personal development approach. Currently, the turnover rate is again being discussed. At the national level, the success of primary education reform in the spirit of a humanistic, child-centred approach is not being systematically monitored. Data from international surveys – PISA, PIRLS, and TIMSS – provides relevant sources for such reflection. In these, Czech pupils perform slightly above the EU average. Their performance in all the PISA and PIRLS domains has remained relatively stable over the last 20 years, with a gradual increase. A detailed look at the evolution of the TIMSS results shows that between 2007 and 2019, there was a statistically significant improvement among Czech primary school pupils in mathematics and science (https://www.csicr.cz/html/2-020/Narodni_zprava_TIMSS_2019/resources/_pdfs_/TIMSS_2019_Narodni_zprava.pdf).

In many European countries, it has also been possible (since the 1970s) to observe a shift from a school of performance to a primary school oriented towards personal development. There have been differences of extent between countries (Hayes, 2010). For example, in the Nordic countries, comparing pupils performance is considered undesirable, and the emphasis is on stimulating individual pupil progress in relation to their individual preconditions. As early as the mid-1990s, research-based findings were published showing that the concept of performance is a minority issue at the primary school level in Europe (Scheerens and Brummelhuis,

1996). Examples of good educational practice were summarised in research on the functioning of primary schools in the countries of the European Union. The key characteristic is considered that of personal development, i.e., a focus on achieving the personal maximum in the development of each student.

It should be added to the stated polarity of performance versus personal development education that although it is commonly used in the professional literature, it is rare in school practice in the form of such sharply formulated contradictions. It is not a matter of incompatible opposites; it is more about finding a balance, finding the optimal level in the emphasis on various aspects of education (Alexander, 2001).

Following the argumentation based on educational-psychological concepts, let us now turn our attention to the influence of the socio-cultural context on the conception of the meaning and goals of (inter alia) primary education. Social and civilisational conditions, the circumstances of children's lives, and the expectations and demands placed on them are changing significantly. Changes are taking place in the structure of the family, its lifestyle, and methods of family upbringing. The characteristics of the child population are changing; for example, the ubiquitous digital technologies are blurring the distinction between the virtual and the real world in children's perception, and the overload of stimuli and information is promoting superficiality in their perception and, thinking and inattention. Increased sensitivity, less resistance to stress, and a certain psychological fragility can be observed in many children. This raises an increasing need for psychosocial support for pupils and an emphasis on nurturing mental (cognitive, emotional. and social), physical, and spiritual (meaning, values and ethical principles) wellbeing at school. Furthermore, the long period of distance education resulting from the COVID-19 pandemic clearly demonstrated the importance of mental healthcare and the importance of socialising children and cultivating social relationships, as well as meeting emotional needs (CSI, 2020).

The experience of the global coronavirus pandemic and, the emphasis on the optics of the future in targeting education to equip the young generation to meet the challenges of life in the 21st century have sharpened some traditional issues and highlighted new perspectives. In times of rapid and unexpected change, uncertainty, and new demands for acceptance and coping in the personal, social, and professional spheres, the importance of overall human resilience and mental health is increasing substantially. Regarding school education, this means an increased emphasis on soft

skills, essential skills, which include a range of key skills and competences such as understanding oneself, recognising and managing one's own emotions, resolving conflict situations, communicating with respect for others, negotiating, compromising, listening, collaborating, organising learning and work, managing time effectively, taking responsibility for oneself and one's own learning, motivating oneself to achieve goals, not giving up when things go wrong, and resisting manipulation through the development of critical thinking.

It is a challenge for primary education (inter alia) to respond apropriately to this changing socio-cultural context of children's lives. In addition, under the influence of social conditions and the circumstances of childhood, children understandably change significantly. In terms of the sociological concept of the sequence of generations, current primary school pupils belong to the alpha generation, which includes children born after 2010, i.e., in the world of digital technology (Thomson and Laing, 2003). They are termed 'digital natives' and spend much of their free time in virtual reality at the expense of real social contacts, are influenced by social networks and various influencers, regularly watch YouTube, etc. As a result, some of the traditional constants of childhood and personality characteristics of children – their perception, thinking, experiencing, social relationships, etc. – and how they learn (e.g., learning from virtual situations) are changing significantly. Research data shows that today's children lack primary experiences, are becoming alienated from nature, and are developing new phenomena such as a fear of animals (Jančaříková et al., 2020).

Considering the changing social context and the focus of education from a future perspective, Fullan (2021) emphasises a paradigm shift in education. He describes the new human paradigm as a comprehensive model based on four driving forces – wellbeing and learning, social intelligence, investment in equity, and systemicity (wholeness). He considers the development of six global competences – character, citizenship, cooperation, communication, creativity, and critical thinking – to be the new meaning and key goal of education. The development of academic knowledge and skills and socio-emotional qualities of personality are part of the set of these competences. The guiding principles of the new paradigm are to become the starting point for changing the education curriculum (Fullan, 2020; Fullan and Quinn, 2016). Conceptual work is currently under way in the Czech Republic on curriculum changes for primary and secondary schools, which are associated with sometimes heated discussions among the professional and broader public about the nature and

extent of curriculum changes. Issues relating to changing the overall paradigm of education are at the centre of attention. In the case of primary education, the possibilities and limits of the above-mentioned approaches – materiocentric versus anthropocentric, performance versus personality and personal developmental education – are being reconsidered in new contexts with a view to finding a balance in the degree of emphasis on different educational goals and areas of the development in children's personality.

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REVIJA ZA ELEMENTARNO IZOBRAŽEVANJE
JOURNAL OF ELEMENTARY EDUCATION
Vol. 17, No. 1, pp. 85–103, March 2024

PARTICIPACIJA V STROKOVNIH CENTRIH Z VIDIKA OTROKOVE/MLADOSTNIKOVE OSEBNE IN ŠOLSKE/POKLICNE BIOGRAFIJE

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Potrjeno/Accepted
15. 12. 2023

Objavljeno/Published
29. 3. 2024

Izvleček/Abstract

V prispevku obravnavamo polje participatornega delovanja posameznikov, nameščenih v strokovnih centrih, ki tako v doktrini kot praksi tovrstnega delovanja predstavlja poseben konceptualni izziv.

Predstavljen je del rezultatov kvantitativne raziskave, v katero je bilo vključenih 231 otrok/mladostnikov iz vseh strokovnih centrov (natančneje vzgojnih zavodov in stanovanjskih skupin), ki v Sloveniji izvajajo vzgojo in izobraževanje otrok/mladostnikov s čustvenimi in z vedenjskimi težavami in/ali motnjami.

Rezultati kažejo, da participatorno udejstvovanje otrok/mladostnikov v tovrstnih institucijah – predvsem v procesih pomoči, ki pomembno zaznamujejo njihove osebne in šolske/poklicne biografije – ni vzpodbudno in da je, v večji meri kot v klasičnih oblikah vzgojnih zavodov, v domeni posameznikov, nameščenih v stanovanjskih skupinah.

Participation in Professional Centres from the Perspective of Children's/Adolescent's Personal and School/Vocational Life Histories

The paper deals with the field of participatory action among individuals placed in professional centres, which represents a special conceptual challenge in both the theory and practice of such engagement. We present the results of a quantitative study involving 231 children/adolescents from all regional professional centres in Slovenia that provide education for children/adolescents with emotional and behavioural difficulties and/or disorders. The results show that the participatory involvement of children/adolescents in such institutions – especially in support processes that have a significant impact on their personal and school/professional life histories – is not encouraging and that, to a greater extent than in traditional forms of residential treatment institutions, this option falls in the domain of individuals placed in housing groups.

Ključne besede:
participacija otrok/mladostnikov, strokovni centri, zavodska vzgoja, osebna biografija, šolska/poklicna biografija

Keywords:
participation of children/adolescents, professional centres, institutional care, personal life history, school/vocational record

UDK/UDC:
37.091.12

DOI https://doi.org/10.18690/rei.4017

Uvod

Etabiliranje participatornih procesov v polju strokovnih centrov (dalje: SC) predstavlja zahteven, ambivalenten proces – razpet med vzgojno-izobraževalno nadzorovalno funkcijo institucionalne ustanove ter soodločanjem nameščene populacije – ki tako v teoriji kot v praksi socialnopedagoškega delovanja predstavlja poseben konceptualni izziv.

Koncept participacije namreč v polju populacije s čustvenimi in z vedenjskimi težavami in/ali motnjami (dalje: ČVT/M) – nameščene v SC, (ki jih v nadaljevanju zaradi lažjega razumevanja podrobneje delimo na vzgojne zavode (dalje: VZ) in stanovanjske skupine (dalje: SS)) – zaradi značilnosti tovrstne populacije zajema zelo široko in subtilno področje, prav tako se oblike participiranja otrok/mladostnikov med tovrstnimi institucijami – izhajajoč iz namembnosti posamezne ustanove – razlikujejo.

V nadaljevanju se osredinjamo le na tiste procese in postopke, ki pomembno zaznamujejo otrokove/mladostnikove osebne in šolske/poklicne biografije ter sovpadajo s temeljnim ciljem zavodske vzgoje, uspešno (re)integracijo v primarno okolje. Hkrati pa se ograjujemo od mnoštva možnosti participacije, ki so posameznikom v različnih SC na razpolago, kot in tudi od klasifikacij participacije, ki s participatorno doktrino sovpadajo.

Teoretična izhodišča

Izhodiščni cilj implementacije participacije na področju marginalizirane in vedenjsko izstopajoče populacije, ki se nanaša tako na posameznike, nameščene v »tradicionalni« obliki zavodske vzgoje – VZ – kot tiste, nameščene v SS:

- vključuje temeljna načela medsebojnega socialnoparticipatornega delovanja (ki izhajajo iz pravičnosti, etičnosti, pluralnosti, spoštovanja, tolerance ipd.);
- sovpada s konceptoma normalizacije, v življenjski svet posameznika usmerjene socialne pedagogike ter sodobnimi koncepti socialnega dela (npr. perspektivo moči, etiko udeleženosti idr.);
- stremi k opolnomočenju posameznikov, da bodo spet povsem ali vsaj delno sposobni avtonomnega razpolaganja oziroma vodenja svojega življenja;
- ima pozitivne dolgoročne učinke tako za posameznika kot širšo skupnost;
- pomembno korelira z učinkovitostjo vzgojno-izobraževalnega zavodskega procesa (Graßhoff, 2022; Marovič, 2020; 2022; Pluto, 2022).

Individualizirani vzgojni načrt (dalje: IVN) – načrt individualizacije vzgojno-izobraževalnega in razvojno-rehabilitacijskega dela (Ministrstvo za šolstvo in šport, 2011) – predstavlja ključno vodilo pri obravnavi določenega posameznika, nameščenega v SC, in pomembno sovpada z njegovo osebno in šolsko/poklicno biografijo. Kljub dejstvu, da je sodelovanje otroka/mladostnika pri IVN zakonsko opredeljeno v *Zakonu o obravnavi otrok in mladostnikov s čustvenimi in vedenjskimi težavami in motnjami v vzgoji in izobraževanju* (ZOOMTVI) (2020), se vključevanje posameznika v okviru SC v proces priprave in spremljanja tega v praksi različno interpretira in od institucije do institucije razlikuje. V nekaterih izmed njih (praviloma v SS) so posamezniki aktivno vključeni v kreiranje IVN, v drugih (VZ) omenjeno sodelovanje ni tako pogosto. Odgovor, zakaj je tako, bi (med drugim) lahko iskali v konceptualnih zasnovah tovrstnih institucij. In sicer so v VZ – kljub nedavni spremembi zakonodajnih izhodišč – po navadi nameščeni posamezniki z izrazitejšimi vedenjskimi odstopanji (zelo agresivnim vedenjem; kombiniranimi ter kompleksnimi težavami, ki v nekaterih primerih že vsebujejo predispozicije psihiatričnih motenj; samopoškodbenimi nagnjenji; kriminalno preteklostjo ipd.), medtem ko SS zajemajo populacijo, ki je v omenjene institucije nameščena predvsem na podlagi različnih težav v družini (npr. šibkega socialno-ekonomskega statusa; vzgojne in vedenjske zanemarjenosti/ogroženosti; slabše učne uspešnosti ali drugih podobnih razlogov) (Kobal Tomc, Centrih, Zalokar, Švab, Bužan, Klanjšček in Pavlič, 2011; Marovič, 2022). Že Skalar (1993) je zapisal – pred tremi desetletji, čeprav navedena trditev še vedno drži – prednost v teh ustanovah imajo tisti posamezniki, ki vedenjsko niso posebej problematični, ki do sedaj v šoli, soseski ipd., niso povzročali posebnih ekscesov, ter tisti, ki imajo v oblasti svoje notranje impulze in so se izkazali kot odgovorni za svoje ravnanje. Čeprav je vse na tem mestu izpostavljene »posebnosti« mogoče zaznati tudi pri posameznikih, nameščenih v VZ, pa se v slednje po navadi namešča posameznike, ki jim predhodno že nudena pomoč v SS ni bila zadostna. Obratno zaporedje v praksi (skorajda) ni izvedljivo.

Sodelovanje posameznika pri IVN – tako ugotovitve iz prakse – otroku/mladostniku, ki se aktivno vključi v zastavljanje ciljev ter sokreiranje svojega lastnega življenja v ustanovi (med izhodi za vikend tudi izven nje), daje občutek, da se ga »sliši«, upošteva, spoštuje in razume. Slednje so ključne lastnosti sodobne, agilne vzgojno-izobraževalne institucije in prav takih zaposlenih (Cencič, 2023), v kateri:

»Otrok sliši neposredno od ljudi, ki so delali z njim, kaj opažajo kot njegov napredek, sam lahko pove, kaj ga moti, česa si želi. Vključenost otroka ima lahko ob podpori in skrbnem vodenju pogovora zelo močan vpliv nanj: počuti se viden, slišan, pomemben in prepoznan. Začuti, da gre zanj, da nam ni vseeno in da lahko soodloča, da pove svoje mnenje in da je slišan.« (Kobolt, Cimermančič, Rapuš Pavel in Verbnik Dolinar, 2010, str. 321–322).

Kot pomembno determinanto v okviru življenjske biografije nadaljnjega razvoja posameznika, nameščenega v SC, velja izpostaviti tudi šolanje. Šola – poleg družine in širšega socialnega okolja – za otroka/mladostnika ves čas razvoja predstavlja pomemben »tretji sistem«, v katerega se vključuje. Pomembno vpliva na razvoj njegove identitete in kakovost njegovega življenja ter predstavlja most med družino in socialnim okoljem, ki posamezniku v optimalnih razmerah lajša udejanjanje motivov, zadostitev radovednostim in izpolnjevanje potreb po samopotrjevanju (Tomori, 2002). Zato predstavlja pri razvoju ČVT/M osnovna šola pomembno vlogo, saj implicira enega izmed ključnih zaščitnih ali ogrožajočih dejavnikov ter v nekaterih primerih tudi odločilni ježiček na tehtnici (Marovič, 2022), ki ima za posledico namestitev v izvendružinsko ustanovo. Pri učencu, pri katerem je zaznati težave na več področjih ter neugodne življenjske okoliščine, šola z odnosom do staršev kot enim največjih stresorjev (Tekavc in Vončina, 2023), težavami z udejanjanjem inkluzivnih praks (Jeznik, 2022), s svojim kurikulumom, z zahtevami ter s storilnostno naravnanostjo pogosto spodbuja ter utrjuje že obstoječe težave in/ali motnje v vedenju ter čustvovanju, to pa je v nasprotju z (inkluzivnimi) cilji sodobnega izobraževanja, kot navajajo tudi Birsa (2017) ter Šilc in Schmidt Krajnc (2022). Šolska neuspešnost torej »/…/ pomembno zmanjša posameznikove možnosti za nadaljnje splošno in poklicno usposabljanje, vpliva na njegove možnosti in vrsto zaposlitve, mu s tem določa možnost in raven samostojnega preživljanja ter poslabšuje kakovost kasnejšega življenja njega in njegovih bližnjih«. (Tomori, 2002, str. 17). Zato bi veljalo na tem mestu razmisliti tudi o dodatnih izobraževanjih vseh deležnikov, vpletenih v vzgojno-izobraževalni sistem (s poudarkom na tistih, ki delujejo v polju populacije s ČVT/M), ter jih opremiti z alternativnejšimi metodami in oblikami dela, ki bi spodbujale sodelovalno in aktivno učenje kot eksplicitni del učnega procesa in z ustreznimi socialnopedagoškimi in komunikacijskimi veščinami (Starman in Birsa, 2022; Kopačin in Birsa, 2022; Kopačin, 2020).

Kljub zgoraj navedenemu pa velja izpostaviti, da sodelovanje otrok/mladostnikov pri izdelavi IVN – kar posledično sovpada s sodelovanjem na timskih sestankih ter v različnih procesih v okviru lastnega nadaljnjega šolanja – pomembno korelira ne samo z uspešnostjo posameznikove obravnave v posameznem SC, temveč tudi s temeljnim ciljem zavodske vzgoje, uspešno (re)integracijo v primarno življenjsko sredino. Vemo namreč, da obravnava brez minimalne privolitve posameznika – ki izhaja tudi iz participatornih možnosti, ki so posameznikom v tovrstnih ustanovah na razpolago – ni in ne more biti uspešna, kar nadalje postavlja pod vprašaj tudi že izpostavljeno uspešno (re)integracijo v primarno okolje (Marovič, 2022).

Utemeljenost pomembnosti participatornega delovanja otrok/mladostnikov v SC v vseh zanje relevantnih procesih ter postopkih (skladno z njihovo zrelostjo in s kronološko starostjo) – ki pomembno zaznamujejo njihove nadaljnje življenjske biografije – nenazadnje potrjujejo tudi številne raziskave in avtorji, ki izhajajo iz participatornega udejstvovanja posameznika. In sicer, da:

- participacija predstavlja eno od osnovnih predpostavk uspešne intervencije ter integracije (Eberitzsch, Keller in Rohrbach, 2020; Pluto, 2022);
- participativni pristopi dajejo dobre rezultate za vse udeležence participatornega procesa; otroci/mladostniki pridobivajo na pomembnosti, moči, odgovornosti; strokovnjaki na odnosu, boljšem uvidu, razumevanju in deljenju odgovornosti z uporabnikom, družba pa na dobri podlagi za pričakovanje boljših rezultatov obravnave (Graßhoff, 2022; Marovič, 2022);
- so v izvendružinskih institucionalnih ustanovah, kjer so prizadevanja vzgoje in izobraževanja usmerjena (če se le da) v družinsko, partnersko, vključujočo ter v življenjski svet posameznika usmerjeno socialnopedagoško pomoč (ki temelji na pozitivni vzgojno-izobraževalni participatorni klimi), v participatorne možnosti nameščene populacije večje (Ackermann, 2022; Wolff in Hartig, 2013);
- večja kot je stopnja participacije nameščene populacije, večje so tudi možnosti uspešne (re)integracijo v primarno življenjsko sredino (Marovič, 2020; Schnurr, 2022).

Metodologija

Namen, cilji in raziskovalni hipotezi

Glavni namen raziskave je, izhajajoč iz zgoraj navedenega, usmerjen v razumevanje, definiranje ter udejanjanje participacije z vidika posameznika, nameščenega v SC – natančneje v VZ in SS. Izpostavili bomo: procese participacije, ki se v tovrstnih institucijah udejanjajo s sodelovanjem in soodločanjem otrok/mladostnikov pri procesih pomoči v okviru osebne in šolske/poklicne biografije.

Izhodiščni cilj je osredinjen na sintezo ter primerjavo obstoječih socialnopedagoških teorij in konceptov, ki se nanašajo na participatorno udejstvovanje otroka/mladostnika, nameščenega v VZ in SS. Iz njega izhaja naslednji cilj: preučiti, katere so prevladujoče participativne prakse, ki so otrokom/mladostnikom, nameščenim v različnih tovrstnih institucijah, pri procesih pomoči v okviru osebne in šolske/poklicne biografije, na razpolago.

Raziskovalni hipotezi

H 1: Otroci/mladostniki, ki bivajo v SS, imajo pozitivnejše izkušnje s participiranjem pri procesih pomoči v okviru lastne biografije kot tisti, ki bivajo v VZ.

H 2: Otroci/mladostniki, ki bivajo v SS, imajo več možnosti soodločanja pri sodelovanju v okviru šolske/poklicne biografije kot tisti, ki bivajo v VZ.

Raziskovalna metoda

Raziskavo smo izvedli v skladu s kvantitativno raziskovalno paradigmo. Uporabili smo deskriptivno in kavzalno neeksperimentalno metodo empiričnega pedagoškega raziskovanja (Cencič, 2009).

Udeleženci

V raziskavo je bilo vključenih 231 otrok/mladostnikov 7., 8. in 9. razredov osnovne šole (OŠ) ter 1., 2., 3. in 4. letnikov srednje šole (SŠ) iz vseh SC, ki v Sloveniji izvajajo vzgojo in izobraževanje otrok/mladostnikov s ČVT/M. Podatki so bili zbrani za vse enote, zato vzorčenje ni bilo potrebno.

Udeležence smo razdelili v dve skupini pod skupnim imenom »Vrsta institucije«. V prvi skupini, VZ (vzgojni zavodi) – to predstavlja 144 (62,34 %) anketiranih otrok/mladostnikov – smo združili šest ustanov.

Omenjene institucije so v večini organizirane v obliki »klasične« zavodske vzgoje (vse pod eno streho), prav tako pa vzgoja in izobraževanje v večini od teh potekata v obliki internega, notranjega izobraževanja. Drugo skupino, SS (stanovanjske skupine) – kar predstavlja 87 (37,66 %) anketiranih otrok/mladostnikov – sestavlja pet ustanov, ki so organizirane v obliki samostojnih, dislociranih bivalnih enot, kjer otroci/mladostniki obiskujejo predvsem zunanje SŠ (tudi OŠ).

Postopki zbiranja podatkov

Podatki so bili zbrani z anketnim vprašalnikom. V sedmih institucijah smo anketiranje izvedli sami, v treh je bilo anketiranje izvedeno ob pomoči tamkajšnjega strokovnega osebja. Sodelovanje v raziskavi je bilo prostovoljno. Anonimnost ter zaščita v skladu z etičnim kodeksom sta bili zagotovljeni.

Opis merskih instrumentov

Za namen raziskave smo uporabili del že obstoječega standardiziranega vprašalnika – ki smo ga z dovoljenjem ustanove Institut für Praxisforschung und Projektberatung & Sozialpädagogisches Institut im SOS-Kinderdorf priredili za slovenski prostor.

Vprašalnik za otroke/mladostnike vsebuje 11 vprašanj. Od tega se jih šest nanaša na neodvisne spremenljivke (ustanova oz. vrsta institucije, OŠ/SŠ izobraževanje, spol, starost, dolžina bivanja v trenutni ustanovi, starost ob prvi namestitvi v ustanovo), pet trditev pa odraža stopnjo participacije. Odgovore smo zbirali s pomočjo petstopenjske ocenjevalne lestvice (sploh nisem vključen/-a; sem seznanjen/-a, ne pa udeležen/-a; lahko povem svoje mnenje; lahko soodločam; te možnosti ne poznam oz. to za mene ne drži). Uporabljeni instrument se je že v okviru drugih raziskav izkazal kot instrument z ustreznimi merskimi karakteristikami, to pa nam je omogočalo veljavnost in zanesljivost.

Postopki obdelave podatkov

Podatki so obdelani in prikazani na ravni deskriptivne ter inferenčne statistike (Cencič, 2009). Uporabljene so metode deskriptivne statistike (frekvence, deleži, aritmetične sredine, standardni odkloni). Za preverjanje razlik med dvema neodvisnima skupinama (VZ, SS) v ordinalni spremenljivki smo uporabili Mann-Whitneyjev U-test. Za ugotavljanje normalnosti porazdelitve rezultatov je bil uporabljen test Kolmogorov-Smirnov test, ker pa smo ugotovili, da se podatki ne

distribuirajo normalno, smo uporabili neparametrični Mann-Whitneyjev U-test za preverjanje razlik v oceni stopnje participacije glede na vrsto institucije (VZ, SS). Za statistično obdelavo podatkov je bil uporabljen program SPSS. Rezultate smo prikazali v preglednicah – vse spremenljivke smo opisali s frekvenčnimi porazdelitvami, in sicer za vse anketirance, vključene v raziskavo, ter ločeno za skupino anketirancev, ki so bivali v VZ, ter skupino anketirancev, ki so bivali v SS.

Rezultati in interpretacija

Rezultate, pridobljene v raziskavi, predstavljamo v dveh vsebinskih sklopih (participacija v procesih pomoči v okviru osebne biografije in participacija v procesih pomoči v okviru šolske/poklicne biografije), v katerih smo analizirali oblike doživete participacije, s katerimi ugotavljamo, v kolikšni meri so otroci/mladostniki v okviru institucionalne obravnave vključeni v participatorne procese, ki se nanašajo na sodelovanje pri procesih pomoči v okviru osebne in šolske/poklicne biografije.

Participacija v procesih pomoči v okviru osebne biografije

Sodelovanje otrok/mladostnikov pri IVN

Preglednica 1: Participacija v okviru sodelovanja pri izdelavi IVN

		Vrsta institucije					
		VZ		SS		**Skupaj**	
		f	f %	f	f %	f	f %
Pri izdelavi svojega vzgojnega načrta pomoči (IVN):	Sploh nisem vključen/-a.	38	26,39	11	12,64	49	21,21
	Sem seznanjen/-a, ne pa udeležen/-a.	33	22,92	15	17,24	48	20,78
	Lahko povem svoje mnenje	28	19,44	21	24,14	49	21,21
	Lahko soodločam.	25	17,36	21	24,14	46	19,91
	Te možnosti ne poznam oz. to za mene ne drži.	15	10,42	18	20,69	33	14,29
	Brez odgovora.	5	3,47	1	1,15	6	2,60
	Skupaj	144	100,0	87	100,0	231	100,0
Mann-Whitneyjev test	Povprečni rang	88,94		110,28			
	U	–2,628					
	p	0,009					

f – število, f % – delež po stolpcu v %

Pri vprašanju, ki se je nanašalo na sodelovanje otrok/mladostnikov pri izdelavi IVN, smo pri stopnji participacije ugotovili statistično pomembne razlike med otroki/mladostniki v VZ in otroki/mladostniki v SS (U = –2,628, p = 0,009). In sicer lahko otroci/mladostniki v SS pri izdelavi IVN soodločajo bolj kot njihovi vrstniki v VZ. Da lahko pri izdelavi IVN soodločajo, v SS trdi 48,28 % anketirancev, v VZ je takih 36,80 %. Da so z izdelavo IVN seznanjeni, navaja 22,92 % otrok/mladostnikov v VZ, v SS je takih 17,24 %. Da v izdelavo IVN sploh niso vključeni, navaja prav tako več zavodskih (26,39 %) otrok/mladostnikov kot v SS (12,64 %). Da možnosti participiranja pri izdelavi IVN ne poznajo, navaja 20,69 % otrok/mladostnikov iz SS in le 10,42 % iz VZ (preglednica 1).

Sodelovanje otrok/mladostnikov na timskih sestankih

Preglednica 2: Participacija v okviru sodelovanja na timskih sestankih

		Vrsta institucije					
		VZ		SS		**Skupaj**	
		f	f %	f	f %	f	f %
Pri svojih timskih sestankih:	Sploh nisem vključen/-a.	15	10,42	2	2,30	17	7,36
	Sem seznanjen/-a, ne pa udeležen/-a.	18	12,50	7	8,05	25	10,82
	Lahko povem svoje mnenje.	68	47,22	42	48,28	110	47,62
	Lahko soodločam.	27	18,75	31	35,63	58	25,11
	Te možnosti ne poznam oz. to za mene ne drži.	10	6,94	2	2,30	12	5,19
	Brez odgovora.	6	4,17	3	3,45	9	3,90
	Skupaj	144	100,0	87	100,0	231	100,0
Mann-Whitneyjev test	Povprečni rang	95,36		121,34			
	U	–3,312					
	p	0,001					

f – število, f % – delež po stolpcu v %

Tudi pri vprašanju, ki se je nanašalo na sodelovanje otrok/mladostnikov pri timskih sestankih, smo pri stopnji participacije ugotovili statistično pomembne razlike med otroki/mladostniki v VZ, in tistimi v SS (U = –3,312, p = 0,001). Otroci/mladostniki v SS poročajo, da lahko v večji meri participirajo pri timskih sestankih kot otroci/mladostniki v VZ. Da lahko pri teh soodločajo, trdi 35,63 % anketirancev v SS, v VZ je takih le 18,75 %.

Da pri timskih sestankih sploh niso vključeni, navaja kar 10,42 % otrok/mladostnikov v VZ in le 2,30 % anketirancev v SS (preglednica 2).

Rezultati raziskave kažejo, da se oblike doživete participacije – s katerimi smo merili, v kolikšni meri so otroci/mladostniki v okviru institucionalne obravnave vključeni v participatorne procese, ki se nanašajo na sodelovanje pri procesih pomoči v okviru osebne biografije – med otroki/mladostniki, nameščenimi VZ, in otroki/mladostniki, nameščenimi v SS, statistično pomembno razlikujejo.

Pri soodločanju o osebni biografiji – ki se je v pričujočem delu raziskave nanašalo na vključenost otrok/mladostnikov pri pripravi IVN ter sodelovanja na timskih sestankih – smo ugotovili statistično pomembne razlike med otroki/mladostniki, ki bivajo v VZ, in njihovimi vrstniki v SS. In sicer so otroci/mladostniki v SS tisti, ki so v izdelavo IVN vključeni v dosti večji meri kot njihovi vrstniki v VZ, prav tako lahko posamezniki v SS v večji meri kot v VZ participirajo na svojih timskih sestankih, s čimer potrjujemo H 1: otroci/mladostniki, ki bivajo v SS, imajo pozitivnejše izkušnje s participiranjem pri procesih pomoči v okviru osebne biografije kot tisti, ki bivajo v VZ.

Podatka, da v VZ na svojih timskih sestankih sodeluje le slabih 19 % otrok/mladostnikov ter da lahko pri IVN soodloča slabih 37 % posameznikov, nikakor nista vzpodbudna. Sodelovanje otroka/mladostnika pri IVN je v Republiki Sloveniji, kot že izpostavljeno, zakonsko opredeljeno z ZOOMTVI (2020), prav tako navedeno izhaja tudi iz načela *Vzgojnega programa za vzgojo in izobraževanje otrok in mladostnikov s čustvenimi in vedenjskimi težavami in motnjami in izvedbenih priporočil za izvajanje vzgojnega programa* (2022) (načelo sodelovanja otroka/mladostnika). Hkrati – tako ugotovitve raziskav (Marovič in Bajželj, 2015; Pluto, 2022; Wolff in Hartig, 2013 idr.) – pa so možnosti za učinkovito obravnavo, brez vsaj minimalnega sodelovanja posameznika, v instituciji močno okrnjene. Tovrstna praksa (vključevanje posameznika v izdelavo IVN ter prisostvovanje na njegovih timskih sestankih) otroku/mladostniku – ki se aktivno vključuje v zastavljanje ciljev ter sokreiranje lastnega življenja – daje občutek, da se ga sliši, upošteva, spoštuje, razume, prav tako pa se do neke mere zmanjšuje tudi občutek nezaupanja v sistem pomoči oz. tiste akterje, ki so zakonsko pooblaščeni za odločanje o njegovi nadaljnji usodi.

Tako, denimo, v nekaterih drugih evropskih državah (npr. Nemčiji in Hrvaški) ureditev tovrstnega področja pokaže, da nemški zakon *Sozialgesetzbuch* (SGB VIII) (1990) eksplicitno zakonsko zavezuje sodelovanje otrok/mladostnikov v vseh procesih in postopkih, ki jih neposredno zadevajo.

Prav tako omenjeni zakon – z izjemo nekaterih jasno določenih kriznih intervencij – ne pozna ukrepov, ki bi jih bilo mogoče uresničevati proti volji prizadetega (otroka/mladostnika). Podobno prakso je zaznati tudi v hrvaškem *Zakonu o socijalnoj skrbi* (2014).

IVN predstavlja temeljni dokument otrokove/mladostnikove obravnave v SC, vključuje bistvene komponente organizacije, izvedbe in oblike dela na posameznih vzgojno-izobraževalnih področjih ter zajema cilje, ki v okviru obravnave v vseh izvendružinskih vzgojno-izobraževalnih ustanovah temeljijo na osrednjem cilju zavodske vzgoje – uspešni (re)integraciji v primarno okolje. Zato ne preseneča, kot ugotavljata tudi Straus in Sierwald (2008), da otroci/mladostniki postopek načrtovanja pomoči (ki zajema tako sodelovanje na timskih sestankih kot pri IVN) opredeljujejo kot eno izmed najpomembnejših možnosti vključenosti v sokreiranje procesa pomoči v okviru osebnih biografij. Na podlagi navedenega zaključujemo, da je konkretizacija participacije v polju soodločanja in sodelovanja otrok/mladostnikov pri načrtovanju procesa pomoči v okviru IVN in timskih sestankih v nekaterih SC komaj zadovoljiva oz. premalo upoštevana.

Participacija v procesih pomoči v okviru šolske/poklicne biografije

Načrtovanje nadaljnjega šolanja

Preglednica 3: Participacija v okviru načrtovanja šolanja

		Vrsta institucije					
		VZ		SS		**Skupaj**	
		f	f %	f	f %	f	f %
Pri vprašanju, na katero šolo bom šel/šla:	Sploh nisem vključen/-a.	13	9,03	5	5,75	18	7,79
	Sem seznanjen/-a, ne pa udeležen/-a.	15	10,42	3	3,45	18	7,79
	Lahko povem svoje mnenje.	43	29,86	20	22,99	63	27,27
	Lahko soodločam.	61	42,36	55	63,22	116	50,22
	Te možnosti ne poznam oz. to za mene ne drži.	5	3,47	2	2,30	7	3,03
	Brez odgovora.	7	4,86	2	2,30	9	3,90
	Skupaj	144	100,0	87	100,0	231	100,0
Mann-Whitneyjev test	Povprečni rang	99,00		122,32			
	U	–2,962					
	p	0,003					

f – število, f % – delež po stolpcu v %

Glede vključenosti pri odločanju nadaljnjega šolanja smo pri stopnji participacije ugotovili statistično pomembne razlike med otroki/mladostniki v VZ in tistimi v SS (U = –2,962, p = 0,003). In sicer lahko otroci/mladostniki iz SS v večji meri kot njihovi vrstniki v VZ soodločajo o izbiri nadaljnjega šolanja. V SS je takih 63,22 % anketirancev, v VZ le 42,36 %. Tistih, ki pri načrtovanju šolanja sploh niso vključeni, je v SS le 5,75 %, v VZ pa 9,03 % (preglednica 3).

Izbira poklica

Preglednica 4: Participacija v okviru izbire poklica

		Vrsta institucije					
		VZ		SS		**Skupaj**	
		f	f %	f	f %	f	f %
Pri vprašanju, kateri poklic bom izbral/-a:	Sploh nisem vključen/-a.	9	6,25	4	4,60	13	5,63
	Sem seznanjen/-a, ne pa udeležen/-a.	10	6,94	5	5,75	15	6,49
	Lahko povem svoje mnenje.	43	29,86	13	14,94	56	24,24
	Lahko soodločam.	70	48,61	60	68,97	130	56,28
	Te možnosti ne poznam oz. to za mene ne drži.	5	3,47	3	3,45	8	3,46
	Brez odgovora.	7	4,86	2	2,30	9	3,90
	Skupaj	144	100,0	87	100,0	231	100,0
Mann-Whitneyjev test	Povprečni rang	99,75		119,97			
	U	–2,668					
	p	0,008					

f – število, f % – delež po stolpcu v %

Tudi glede vključenosti pri izbiri poklica smo pri stopnji participacije ugotovili statistično pomembne razlike med otroki/mladostniki v VZ in tistimi v SS (U = –2,668, p = 0,008). Otroci/mladostniki v SS v večji meri kot njihovi vrstniki v VZ poročajo, da lahko soodločajo, kateri poklic bodo izbrali. V SS lahko o svojem poklicu soodloča skoraj 70 % (68,97 %) anketirancev, v VZ blizu 50 % (48,61 %) (preglednica 4).

Rezultati raziskave kažejo, da se tudi oblike doživete participacije – s katerimi smo ugotavljali, v kolikšni meri so otroci/mladostniki v okviru zavodske obravnave vključeni v participatorne procese, ki se nanašajo na sodelovanje pri šolski/poklicni biografiji – statistično pomembno razlikujejo med otroki/mladostniki VZ in v SS.

Pri načrtovanja šolske ter poklicne biografije, ki se je nanašala na izbiro nadaljnjega šolanja otrok/mladostnikov ter izbiro poklica, smo pri stopnji participacije prav tako ugotovili statistično pomembne razlike med otroki/mladostniki v VZ in v SS. Otroci/mladostniki iz SS, lahko tudi na teh dveh področjih v večji meri kot vrstniki v VZ soodločajo o izbiri nadaljnjega šolanja in poklica. S tem potrjujemo H 2: otroci/mladostniki, ki bivajo v SS, imajo več možnosti soodločanja pri sodelovanju v okviru šolske/poklicne biografije kot tisti, ki bivajo v VZ.

Kot kažejo raziskave Inštituta Republike Slovenije za socialno varstvo (2011), izbira nadaljnjega šolanja (posledično tudi poklica) pri posameznikih, nameščenih v VZ, pomembno korelira z odporom do šole, saj šola predstavlja enega izmed ključnih dejavnikov, ki botrujejo namestitvi otrok/mladostnikov v »tradicionalno« obliko zavodske vzgoje. Za mnoge od njih je šolanje predvsem muka in prisila, znanje jim ne predstavlja vrednote, primanjkuje jim podpore v domačem okolju, z učitelji se ne razumejo, so nemotivirani, dvomijo v svoje sposobnosti ipd., zaradi česar šolanje (velikokrat) postavijo na stranski tir (prim. Tomori, 2002). Vendar pa se na podlagi ugotovitev pričujoče raziskave – da lahko otroci/mladostniki, v SS, v večji meri kot vrstniki v VZ soodločajo o izbiri nadaljnjega šolanja in poklica – velja vprašati: Ali si (zaradi odpora do šole, ki ga pri posameznikih v VZ ne gre zanemariti) otroci/mladostniki v VZ sploh želijo večjega soodločanja pri izbiri nadaljnjega šolanja in poklica? Ali pa se ravno zaradi navedenih značilnosti oz. odpora do šolanja morebiti raje zavestno postavijo v pasivno vlogo v okviru poteka nadaljnjega izobraževanja z argumentom, da vzgojitelji v VZ (glede na poznavanje njihove dosedanje šolske poti) bolje kot oni sami vedo, kaj je za njih najbolje?

Vsekakor lahko predpostavljamo, da odpor do šole pomembno zaznamuje nadaljnji potek izobraževanja, s čimer se do neke mere lahko približamo tudi razlagi diskrepance, ki je pri izbiri nadaljnjega šolanja ter poklica evidentna med posamezniki v VZ in v SS. Vendar pa bi si – ne glede na navedeno (ali pa ravno zaradi tega) – vzgojitelji v VZ (tudi SS) morali še toliko bolj prizadevati k vključevanju otrok/mladostnikov v odločanje o lastni nadaljnji izobraževalni poti, jih pri tem vzpodbujati ter motivirati, predvsem ker so njihovi šolski rezultati – kot že izpostavljeno – velikokrat pod njihovimi dejanskimi sposobnostmi ter tako ne odražajo realnega stanja. Nenazadnje (lahko) višja izobrazba predstavlja hkrati tudi vstopnico iz deprivilegiranosti in marginaliziranosti, omogoča boljši socialni (tudi drugi) kapital ter boljšo, predvsem pa lažjo (re)integracijo v širše socialno in družbeno okolje.

Sklep

Rezultati raziskave, ki so primerljivi s sorodnimi raziskavami nemškega raziskovalnega področja (npr. Eberitzsch idr., 2020; Pluto, 2022; Schnurr, 2022; Wolff in Hartig, 2013 idr.) ter teoretičnimi ugotovitvami pričujočega prispevka, s katerimi smo potrdili obe zastavljeni hipotezi, kažejo, da je participatorno delovanje otrok/mladostnikov v izpostavljenih procesih institucionalne obravnave – ki se v SC (med drugim) udejanja v sodelovanju in soodločanju otrok/mladostnikov pri procesih pomoči v okviru osebne in šolske/poklicne biografije – zaznamovano z zelo obširno ter kompleksno dinamiko v razumevanju socialnopedagoškega, psihološkega, organizacijskega, osebnostnega in skupnostnega konteksta, ki ni in ne more biti enoznačna. Ta v polju SC zahteva: senzibilen pristop vseh akterjev, vključenih v participatorni proces; transparentnost; poznavanje temeljnih značilnosti tako institucije kot nameščene populacije; (nenehno) iskanje ravnotežja med številnimi dejavniki, ki zavodsko vzgojo (in nameščeno populacijo) pomembno zaznamujejo (prim. Marovič in Bajželj, 2015; Wolff in Hartig, 2013 idr.).

Čeprav je participatorno delovanje – kot je bilo izhajajoč iz konceptualnih zasnov posameznih tovrstnih institucij pričakovati – v dosti večji meri »rezervirano« za posameznike, nameščene v SS, kot njihove vrstnike v VZ, pa velja opomniti, da si tudi otroci/mladostniki v VZ, kot ugotavljata že Wolff in Hartig (2013), želijo aktivnejše individualne vloge pri določanju poteka lastnega življenja. Ne smemo namreč pozabiti, da so tudi zavodski otroci/mladostniki v prvi vrsti samo otroci/mladostniki, ki imajo podobne želje, potrebe, hrepenenja, pričakovanja ipd. kot njihovi nezavodski vrstniki, zaradi česar bi jim ravno institucija – v kateri so (zaradi spleta različnih neugodnih življenjskih okoliščin) nameščeni in ki mnogim predstavlja edini dom – v prvi vrsti morala (tako kot funkcionalna primarna družina) zagotavljati predvsem varen prostor, hkrati pa nuditi vse potrebne vire za njihov optimalen psihosociofizičen razvoj. Prav tako bi morala, upoštevajoč normalizacijske (in druge tovrstne) procese, v večji meri (ravno zaradi neugodnih življenjskih okoliščin, ki so jim ti posamezniki podvrženi) izhajati iz načela sodelovanja otroka/mladostnika v procesu lastnega razvoja, da se bo ta lahko lažje soočal z izzivi sodobne družbe, kar nenazadnje implicira tudi temeljni cilj zavodske vzgoje – uspešno vključitev posameznika v primarno življenjsko sredino.

Zato velja posebej poudariti – ne glede na težavnost ter temeljne značilnosti populacije, ki se v VZ namešča – da je tudi otrokom/mladostnikom v VZ (ravno na podlagi težavnosti, ki se tej populaciji pripisuje) treba omogočiti participatorno delovanje, ki pa mora biti pogojeno z njihovimi individualnimi sposobnostmi, zrelostjo in s kronološko starostjo ter z vsemi tovrstnimi procesi, ki participatorno delovanje v okviru zavodske vzgoje pomembno zaznamujejo.

Summary

The paper deals with the field of participatory action among individuals placed in professional centres (PCs), which represents a special conceptual challenge in both the theory and practice of such engagement.

The concept of participation by the population with emotional and behavioural difficulties and/or disorders (EBD/D) placed in PCs (which are further subdivided into residential treatment institutions (RTIs) and housing groups (HGs) for the sake of clarity) - covers a broad and subtle area, owing to the characteristics of this type of population. The forms of participation by children/adolescents vary between these types of institutions - depending on the purpose of the institution.

Notwithstanding the above, it is worth pointing out that the participation of children/adolescents in the formulation of an individualised education plan - which in turn, coincides with their participation in team meetings and in various processes in the context of their further education - correlates significantly not only with the success of the individual's treatment in the PC, but also with the fundamental goal of institutional education: successful (re)integration into the primary life environment. We know that without a minimum level of consent from the individual - which is also implied by the participatory possibilities available to individuals in such institutions - social pedagogical treatment is not and cannot be successful, which further calls into question the successful (re)integration into the primary environment (Marovič, 2022).

The importance of participation by children/adolescents at these institutions in all the processes and procedures relevant to them (in accordance with their maturity and chronological age) that have a significant impact on their future life trajectories

- has also been confirmed by multiple studies and authors who draw on the participatory involvement of the individual. They state the following:

- participation is one of the basic preconditions for successful intervention and integration (Eberitzsch, Keller and Rohrbach, 2020; Pluto, 2022);
- participatory approaches produce good results for all participants in the participatory process; children/adolescents gain in importance, power, and responsibility; professionals gain in attitude, better insight, understanding and shared responsibility with the user, and society gains a good basis for expecting better treatment outcomes (Graßhoff, 2022; Marovič, 2022);
- in non-family institutional settings, where educational efforts are focused on (as far as possible) family, partnership, inclusive and person-centred socio-pedagogical support (based on a positive participatory educational climate), the participatory potential of the accommodated population is greater (Ackermann, 2022; Wolff and Hartig, 2013);
- the higher the participation rate of the accommodated population, the higher the chances of successful (re)integration into the primary living environment (Marovič, 2020; Schnurr, 2022).

Starting from the above, this paper presents part of the results of a quantitative survey involving 231 children/adolescents from all regional PCs providing education and training for children/adolescents with EBD/D in Slovenia.

The results of the survey - comparable to related studies in the German research field (e.g., Eberitzsch et al., 2020; Pluto, 2022; Schnurr, 2022; Wolff and Hartig, 2013, etc.) and the theoretical findings of the present paper – show the following: 1. that the participatory involvement of children/adolescents in such institutions, especially in helping processes that significantly shape their personal and school/professional life outcomes, is not encouraging; 2. that the participatory option is, to a greater extent than in traditional forms of RTIs, the domain of those individuals placed in HGs; and 3. that it is characterised by extensive and complex dynamics in the understanding of the socio-pedagogical, psychological, organisational, personal and community contexts, which are not, and cannot be, homogeneous.

Although participatory action is - as might be expected from the conceptual design of individual institutions of this kind - to a much greater extent reserved for individuals placed in HGs than for their peers in RTIs, it is worth noting that, as M. Wolff and S. Hartig (2013) have noted, children/adolescents in RTIs also seek to

play a more active individual role in determining the course of their own lives. We must not forget that children/adolescents in institutions are first and foremost just children/adolescents who have wants, needs, desires, expectations, etc., similar to those of their non-institutional peers, which is why the institution (where they have been placed (owing to a combination of various adverse life circumstances) and which for many is their only home) should first and foremost (like a functional primary family) provide them with a safe space, while at the same time offering all the necessary resources for their optimal psycho-socio-physical development. Also, taking into account normalisation and other similar processes, it should be based to a greater extent (precisely because of the adverse life circumstances to which these individuals have been subjected) on the principle of the child/adolescent's participation in the process of his/her own development, so that he/she can better face the challenges of modern society, which, after all, also implies the fundamental goal of institutional education: the successful integration of the individual into the primary environment of his/her life.

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REVIJA ZA ELEMENTARNO IZOBRAŽEVANJE
JOURNAL OF ELEMENTARY EDUCATION
Vol. 17, No. 1, pp. 105–122, March 2024

IMPEDIMENTS TO KINDERGARTEN CHILDREN IDENTIFYING GEOMETRIC SHAPES

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Potrjeno/Accepted
6. 2. 2024

Objavljeno/Published
29. 3. 2024

Izvleček/Abstract

Research shows that children aged 3 to 6 years do not fully grasp the concept of geometric shapes. This paper aims to examine children's intuitive knowledge of triangles and squares. We analysed the effects of distractors on identification and the neglected properties of (non)examples. The purpose of the study was to establish the developmental path in the identification of shapes. It was operationalized by determining types of interfering distractors in shape recognition and properties neglected. The data obtained from individual interviews were processed by the method of statistical and descriptive qualitative analysis. A classification was made of distractors and properties of non-examples affecting identification.

Keywords:
a non-example, distractor, geometrical shape, properties of geometric shapes, kindergarten children.

Ovire pri prepoznavanju geometrijskih likov pri predšolskih otrocih

Raziskave kažejo, da imajo otroci, stari od 3 do 6 let, težave pri razumevanju koncepta geometrijskih likov. Osnovni cilj prispevka je preučiti intuitivno znanje otrok o trikotnikih in kvadratih. Analizirali smo vpliv distraktorjev (netipičnih lastnosti) na prepoznavanje likov in neupoštevane lastnosti protiprimerov. Namen raziskave je bil ugotoviti razvojne stopnje otrok pri prepoznavanju likov. Ugotavljali smo vrste distraktorjev in neupoštevane značilnosti pri prepoznavanju likov. Podatke, pridobljene z intervjuji, smo obdelali s statistično in deskriptivno kvalitativno analizo. Oblikovali smo klasifikacijo distraktorjev in značilnosti protiprimerov, ki vplivajo na prepoznavanje likov.

Ključne besede:
protiprimer, distraktorji, geometrijski lik, lastnosti geometrijskih likov, predšolski otroci

UDK/UDC:
373.2.091.3:514

DOI https://doi.org/10.18690/rei.2503

Introduction

The preschool age is a period when basic concepts of geometric figures are constituted (Clements et al., 1999). Those concepts are built on the perceptual similarities of objects in children's immediate surroundings and personal experience (Koleza and Gianissi, 2013). The development continues as children manage to single out and recognize the properties, and finally, to identify geometric shapes based on definition (Satlow and Newcombe, 1998). During this period, children can perceive the properties but still fail to understand which properties play a key role in identifying certain shapes (Clements et al., 2018; van Hiele, 1986). For example, if a triangle is not represented with a horizontal base, children do not identify it and do not perceive it as a triangle (Satlow and Newcombe, 1998). It is considered that recognition of properties and their connection with shapes are the key aspects in the development of geometric thinking (Clements et al., 1999).

Intuition has also been shown to play an essential role in mathematical processes of thinking (Fischbein, 1987). Children's cognitive processes are intuitive, primarily based on practical experience, and heavily influenced by emotions. Consequently, their understandings are frequently deeply ingrained and resistant to external adjustments (Žilkova et al., 2019). Through the process of developing concepts of geometric shapes, there is an interaction of intuitive and formal aspects (Fischbein, 1993). The visual representation of a form allows an instantaneous intuitive response, while geometric concepts are abstract ideas derived from formal definitions. "Very often the intuitive representation is stronger and tends to invalidate the formal conception" (Fischbein, 1987, p. 205). Preschool children recognize geometric shapes by their intuitive aspects, so we are curious about which examples and non-examples of geometric shapes children intuitively (immediately) recognize as such.

Literature Review

Theory of development of geometric concepts

There are several theories about the origin and development of geometric concepts (Đokić and Zeljić, 2017). We will consider van Hiele's theory because of its significant influence on the practice. According to van Hiele's theory, the development of geometric thinking is divided into five progressive levels that lead

to formal deductive reasoning (van Hiele, 1986). It develops from the initial, Gestalt visual level, through increasingly sophisticated levels: descriptive and analytical, abstract and relational, the level of formal deduction, and the rigid-mathematical level (Đokić and Zeljić, 2017). The first three levels are crucial for initiating the development of geometric thinking. They describe the processes that lead to an understanding of the relationship between geometric shapes (Bernabeu et al., 2019):

1. Level 1: *visual level*. Children recognize geometric shapes based on their perceptual appearance as a whole, without considering their components. To recognize shapes, they use known prototypes from the environment (e.g., doors for rectangles). Children at this level are able to name shapes and distinguish between shapes of similar appearance.
2. Level 2: *analytical/component level*. Children identify shapes based on properties and can characterize and describe them. At this level, children do not relate these properties to classes of figures.
3. Level 3: *Abstract/rational level* or *level of informal deduction*. Children determine the connections between shapes and can argue their classification. Also, they can detect the properties of a group of shapes based on informative deduction. At this level, hierarchical classification is thought to have been developed.

Clements and Batista (1992) consider that there is a level that precedes the visual level according to van Hiele that is crucial in the process of developing geometric thinking and which is called the *precognitive* or *pre-representative level* (Level 0). At this level, children can only follow a set of visual characteristics of shapes and are unable to identify many common shapes or distinguish figures that belong to the same group.

Other theories also emphasize the importance of early learning of geometry and the introduction of concepts in real-world settings through manipulation and exploration of geometric shapes and materials (Đokić and Zeljić, 2017; Clements and Battista, 1992).

The role of examples and non-examples in developing geometric concepts

Every representation of a geometric concept has certain properties, including some unimportant properties, which we call distractors (Hershkowitz, 1989). As one of the ways to faster and more complete development of geometric concepts, the application of examples and non-examples is often sought.

All examples of a concept must contain its characteristic properties, while distractors can be found only in some representations of the concept. For example, each square

has four congruent sides and four equal angles, while its orientation or size is a distractor (Đokić et al., 2020). Hannibal (1999) in his study reveals that many children rely on distractors when trying to distinguish examples from non-examples (see Walcott et al., 2009 for school-age). Burger and Shaughnessy (1986) argue that relying on distractors has elements of visual reasoning. Children on the first level of van Hiele's geometrical thinking (the visual level) tend to include irrelevant properties, such as orientation when classifying or describing geometric figures and tend to reference prototypes when determining figures.

Prototypes, specific types of examples, also play an important role in constituting geometric concepts. Prototypical examples are typical and frequent representations of a geometric concept (Tsamir et al., 2015) that possess the necessary, characteristic properties but also have excessive and unnecessary properties: distractors (Hershkowitz, 1989). For example, an isosceles triangle whose base is horizontally oriented is a prototype of the triangle. In this way, children may have limited understanding of triangles that include only such examples. Children can also include non-examples that visually look like a prototype. Reasoning based on critical properties increases with age (Hershkowitz, 1989).

Tsamir et al. (2008, 2015) argued that some prototypes can be quickly identified as an example of a concept (intuitive examples), while other examples may take longer to identify (non-intuitive examples). They also suggested the possibility that some inappropriate examples are similar, so these are quickly and intuitively recognized as non-examples. Contrarily, non-intuitive or counterintuitive non-examples are those which are not easy to recognize as non-examples of a geometric figure. Clements et al. (1999) suggest that different shapes may have different numbers of prototypes. They claim that a circle and a square have fewer prototypes than rectangles and triangles. Some studies suggest that overexposure to prototypes may hinder the construction of a concept. For example, Kellogg (1980) suggested that prototypes are formed when certain distractors occur frequently in examples, and children begin to associate these distractors with examples of shapes. Wilson (1986) advocated the use of non-examples to minimize the impact of prototypes. By being exposed to non-examples with the same distractors, children can begin to distinguish between basic properties and distractors (Tsamir et al., 2008).

Classification of geometric concepts at the preschool level

The categorization of shapes at the preschool level is done by naming. In this case, naming serves only as an indicator of category creation (Waxman, 1999). Markman (1988) believes that when children hear a new name for an object, they assume that it refers to the whole object, and not to its parts. This corresponds to the visual level (level 0) according to van Hiele in which children first consider the whole shape regardless of its components.

The results of research by Tsamir et al. (2008) showed that about 90% of preschool children were able to identify intuitive triangles, while less than half of children identified non-intuitive triangles. Their findings agree with the results of Clements' research (Clements, 1999). More children successfully identified "non-triangles" than triangles. The identification of non-examples is divided into four categories: 1. reliance on characteristic properties, 2. naming only, 3. consideration of shapes as a whole, and 4. reliance on unimportant properties/distractors. Children usually identified intuitive non-examples only by naming (as soon as they name a square, they know that it does not belong to the category of triangles). When identifying non-intuitive non-examples, children most often relied on the characteristic properties of triangles, although the identification was not always correct.

The construction of geometric concepts is a complex process that includes both visual and descriptive reasoning (Tsamir et al., 2008). "Naming, intuition, and prototypes play a major role in geometric conceptualization" (Ibid, p.85). Previous research has focused on distinguishing different types of examples, including intuitively accepted prototype examples.

Methods

Aim and tasks of the research

The main aim of the research is to determine the developmental path in the identification of geometric shapes among preschool children. For each geometrical shape, we considered its figural concept (Fischbein, 1993). Research shows that images from figural concepts become strong prototypes that dominate the definition process and problem-solving (Satlow and Newcombe, 1998; Wolcott et al., 2009). Based on the aim of the research, the following tasks were formulated:

1. To determine the types of distractors that effectively affect the identification of geometric shapes at a certain age;

2. To determine the properties of geometric shapes that children at a certain age neglect.

Sample

Participants in this study were 151 children of preschool age (3–6 years old) from three Belgrade kindergartens. The sample has the character of an appropriate sample in which children from all four age groups of kindergarten participated ("younger" with 3-year-old children, "middle" with 4-year-old children, "older" with 5-year-old children, and K with 6-year-old children).

Instruments

The survey as a method of data collection was performed by surveying children with a standardized questionnaire. Each child was offered a worksheet that included two complex tasks on both of which the children were asked to identify the two required geometric shapes among the 12 shapes offered (for each shape). At the same time, each geometric shape that they considered to represent a triangle (or square) was to be coloured in, using a different colour. The task that involved recognizing a triangle included the following: 1. one intuitive example, 2. two intuitive non-examples, 3. five non-intuitive examples (geometric shapes with distractors), and 4. four non-intuitive non-examples. The task of identifying squares included the following: 1. one intuitive example, 2. one intuitive non-example, 3. five non-intuitive examples (geometric shapes with distractors), and 4. five non-intuitive non-examples. Given the nature of the geometric shapes whose identification was being examined, there are differences in some distractors and properties that these shapes may possess; thus, the ratio of examples with these properties in tasks differs. The emphasis of the study was placed on the following distractors whose effectiveness in identification was examined: orientation (rotating a geometric shape by a certain number of degrees), size, configuration (shape perception in a complex figure), type of triangle (this distractor can be found only in the case of triangles), as well as on the following non-example properties: curved sides, shape without a single vertex, incomplete borders (only in the case of squares), pattern (with missing shape border), non-intuitive non-example with a different number of sides and non-intuitive non-example with the same number of sides (this property can be found only in the case of squares).

In designing the instrument, we relied on examples of existing research where distractors such as triangle type (Clements et al., 2018), orientation (Tsamir et al., 2008, 2015; Clements et al., 2018) and properties that can be seen in our instrument were used, such as curved side (Tsamir et al., 2015; Clements et al., 2018), shape without a single vertex (Tsamir et al., 2008), as well as intuitive non-examples with a different number of sides (Tsamir et al., 2008, 2015; Clements et al., 2018). In addition to these, we included new properties that we wanted to examine in children: configuration (perceiving shapes in a complex figure) as a distractor, incomplete borders, patterns (with missing shape borders), and non-intuitive non-examples with a different number of sides which have visual similarities with squares (Figure 1).

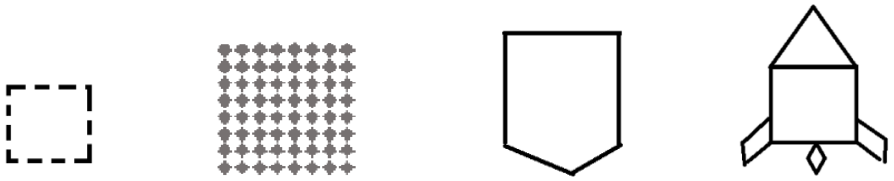

Figure 1: Examples of new properties included in the study: incomplete borders, pattern, non-intuitive non-example with a different number of sides, and configuration.

Data analysis

In order to assess children's ability to identify geometric shapes, a test (paper-pencil) was used. The task for the children was to colour in the specified geometric shape. Each displayed geometric shape received a score of 1 if the child coloured it in, or 0 if the child did not colour it in.

Results

First, we will look at children's ability to identify intuitive examples. The results show that most of the children managed to identify intuitive triangles (92.1%) and intuitive squares (85.5%).

The first research task was to examine the types of distractors that effectively affect the identification of triangles and squares. In Table 1 we present the results for correctly coloured shapes under the influence of a particular distractor. We include only the results from children who gave the correct answer on both tasks and every type of distractor.

Table 1. Children's success in identifying triangles and squares under the influence of distractors

Age	Younger	middle	older	K	In Total
Distractor	%	%	%	%	%
Orientation	48.6	63.9	56.4	73.2	60.9
Size	54.3	63.9	74.4	95.1	72.8
Configuration	0.0	8.3	59.0	73.2	37.1

It can be noticed that the effect of distractors on identification decreases with the increasing age of the children. The Kruskal-Wallis Test confirmed the difference in overall distractor ordinal data between different age groups (H= 46.24(3), p = .000, mean ranks are 47.67; 55.92; 88.56; and 105.87, respectively, for younger, middle, older and K group). Pairwise comparison showed that the younger and middle group of children differ from the older and K group. Test statistics and other statistical information are provided in Table 2.

Table 2. Pairwise comparisons for variable distractor

Comparisons	*Dann's Test*	*SE*	*p value*
younger-older	−40.89	10.00	.000*
younger-K	−58.19	9.89	.000*
Middle-older	−32.65	9.93	.006*
Middle-K	−49.95	9.81	.000*

a. Adjusted p values are provided. Original p values are multiplied by the number of comparisons (Bonferroni's correction)

* <.05

The effects of distractors on the identifications of individual geometric shapes are shown in Tables 3 and 4. Percentages of correct identifications are shown

According to the results from both tables, the same types of distractors have the same effect on both geometric shapes, and this holds true for size and configuration distractors. The Chi-square Test of homogeneity and post-hoc analysis showed that the younger and K group differ from the expected distribution in the case of a triangle and square size. And in the case of configuration as a distractor, each age group differs from the expected count.

Table 3. Children's success in identifying triangles under the influence of distractors

Age	Younger	middle	older	K	In total
Distractor	%	%	%	%	%
Orientation	62.9	88.9	79.5	92.7	81.5
Size	68.6	77.8	89.7	97.6	84.1
Configuration	11.4	16.7	66.7	80.5	45.7
Type of triangle	68.6	66.7	69.2	85.4	72.8

Table 4. Children's success in identifying squares under the influence of distractors

Age	"younger"	"middle"	"older"	K	In total
Distractor	%	%	%	%	%
Orientation	65.7	69.4	69.2	75.6	70.2
Size	60.0	75.0	79.5	95.1	78.1
Configuration	14.3	11.1	69.2	75.6	44.4

Tables 5 and 6 give insight into the statistical information. Although success in orientation distractor has same distribution across age groups considering overall results (both shapes together) ($\chi 2(3) = 5.293, p = .152$) when it comes to triangle orientation the younger group significantly differs from other groups (Table 6).

Table 5. Post-hoc for-Chi-square Test about the effect of a distractor on a triangle shape

Age	Orientation			size			configuration		
	ASR[a]	*χ2(1)*	*p value*	*ASR*[a]	*χ2(1)*[b]	*p value*	*ASR*	*χ2(1)*[b]	*p value*
younger	3.23	10.44	.001*	-2.87	8.22	.004*	-4.64	21.56	.000*
middle	1.31	1.73	.189	-1.19	1.42	.234	-4.01	16.05	.000*
older	-0.37	0.16	.713	1.12	1.25	.263	3.05	9.32	.002*
K	2.17	4.70	.030	2.76	7.62	.0057*	5.24	27.46	.000*

[a]Adjusted Standardized Residuals

* less than .006 which is the rigid probability level for chi-square post-hoc analysis

Table 6. Post-hoc for-Chi-square Test about the effect of a distractor on a square shape

Age	Size			Configuration		
	ASR[a]	*χ2(1)*	*p value*	*ASR*[a]	*χ2(1)*	*p value*
Younger	-2.96	8.78	.003*	-4.08	16.68	.000*
Middle	-0.52	0.27	.601	-4.60	21.19	.000*
Older	0.24	0.06	.814	3.63	13.17	.000*
K	3.08	9.50	.002*	4.72	22.25	.000*

[a]Adjusted Standardized Residuals
* less than .006 which is the rigid probability level for chi-square post-hoc analysis

Older children were more successful than younger ones, except in the case of triangle orientation. When it comes to identifying triangles affected by orientation distractor, 4-year-old children (the middle group) were 88.9% successful, and 5-year-olds (the older group) were 79.5% successful, but as we see in Table 5, this is not a significant difference from the expected count ($p > .006$). In the case of squares, an orientation distractor had almost the same effect on identification in 4-year-olds (the middle group, 69.4%) and 5-year-old children (the older group, 69.2%), and overall cross tabulation data do not show a statistical difference between age groups related to the square orientation distractor ($\chi2(3) = 0.938$, $p = .816$).

To conclude, the configuration in which a particular geometric shape is represented together with the same or some other geometric shapes is the distractor with the greatest influence on the identification of geometric shapes. Children in the middle and K age groups were better at discerning triangles than squares, while the younger and older age groups performed better when distinguishing squares (Tables 3 and 4). We assume that at this age, a child is acquainted with the properties of squares, so their attention was focused on these shapes. Also, in the transition from year 5 to 6, a jump in the success of shape identification under the influence of this distractor is noticeable for both geometric shapes.

The distractor that is characteristic only for triangles is its type, whereby only a right triangle was included in our research. The results of the research show that 3, 4, and 5-year-old children (the younger, middle, and older groups) react approximately the same to this distractor (Table 3). The difference is noticeable only with the oldest 6-year-old children (K group), where only 14.6% of children failed to identify a right triangle as a type of triangle, but this is not significant ($\chi 2(3) = 4.525$, $p = .210$). This result is not surprising since research shows that children get to know the concept of angle through different phases of angle abstraction (Mitchelmore and White, 2000).

The second research task was to analyse the properties that children neglect when identifying triangles and squares. We examined the ability of children to recognize a certain property as a property that does not belong to geometric shapes or to recognize a non-example as a non-example of a figure. The results are shown in Table 7.

Table 7. Children's success in identifying the properties of non-examples of triangles and squares

	Younger	middle	older	K	Total
Properties	%	%	%	%	%
Number of sides	45.7	50.0	79.5	73.2	62.9
"Curved" side	37.1	47.2	66.7	65.9	55.0
Shape without a single vertex	20.0	16.7	23.1	17.1	19.2
Pattern	65.7	80.6	53.8	26.8	55.6

The majority of children unsuccessfully identify the properties of geometric shapes. Actually, only 7.9% percent of children identified every property of both geometric shapes. The Kruskal-Wallis Test for overall ordinal data shows that the distribution of non-example recognition is the same across age groups ($H(3) = 5.31$, $p = .151$, mean ranks are 76.76, 72.79, 88.24, and 66.52, respectively, for the younger, middle, older and K age groups).

According to mean ranks, it is noticeable that the most successful was the 5-year-old children (older group), and the least successful were the 6-year-olds (K group). The children best recognized the property of geometric shapes that refers to the number of their sides (Table 7). During the identification, the children mostly neglected the property of these two geometric shapes as a closed broken line. Most children coloured in a geometric shape without a vertex (open broken line), considering it to be a triangle or a square (Table 7). Non-examples that are recognized as non-examples in individual geometric shapes are shown in Tables 8 and 9.

Table 8. Triangle non-example recognition

Properties of a figure	younger	middle	Older	K	In total
	%	%	%	%	%
Different number of sides	54.3	52.8	82.1	75.6	66.9
"Curved" sides	60.0	55.6	79.5	75.6	68.2
Triangle without a single vertex	40.0	33.3	41.0	34.1	37.1
Pattern	88.6	88.9	59.0	46.3	69.5

Table 9. Square non-example recognition

Properties of a figure	younger	middle	older	K	Total
	%	%	%	%	%
Different number of sides	62.9	58.3	94.9	82.9	75.5
Same number of sides	62.9	55.6	89.7	73.2	70.9
"Curved" sides	51.4	55.6	84.6	73.2	66.9
Square without a single vertex	28.6	19.4	30.8	19.5	24.5
Incomplete borders	48.6	30.6	28.2	14.6	29.8
Pattern	68.6	83.3	59.0	26.8	58.3

Properties neglected during identification have about the same effect on both geometric shapes. The difference refers to the properties that are least neglected: for triangles, it is the pattern (Table 8), while for squares it is the different number of sides (Table 9).

As we noted before, the results indicate that the property most ignored by children was the property of a geometric shape as a closed geometric figure in a plane; children neglected a side without a single vertex or incomplete borders in the case of squares (Table 9). The number of sides that characterize the geometric shape was best recognized in the case of squares. Five-year-old children noticed this property best. When it comes to triangles, the pattern without a boundary line is the best-observed property (Table 8).

We sought to explore the developmental path in the identification of geometric shapes, so we ran the Kruskal-Wallis Test to determine whether the distribution for recognition of non-examples of a triangle and non-examples of a square remains the same across age groups. In the case of a triangle, all age groups were equally successful ($H(3) = 1.64$, $p = .650$, mean ranks are 77.31, 72.68, 82.85, and 71.56, respectively, for younger, middle, older and K age groups), whereas in the case of a square, significant differences in mean ranks were found ($H(3) = 7.91$, $p = .048$, mean ranks are 74.89, 71.88, 91.59, and 65.74, respectively, for younger, middle, older and K age groups). The Pairwise comparison indicates only that the K group significantly differs from the older group (Dann's Test = 25.85, $SE = 9.56$, adjusted *p value* is .041). This difference suggests that 5-year olds (the older group) outperformed 6-year-olds (the K group) or to be precise, the oldest group of children were mostly unsuccessful in square non-example recognition.

Finally, we sought to determine whether there was a statistical significance in differences between children's recognition of examples of geometric shapes under the influence of distractors and the recognition of non-examples under the influence of characteristic properties of geometric shapes. The Wilcokson Signed Rank Test ($z = -3.29$, $p = .001$) revealed that children were significantly more successful in recognition of examples under the influence of a distractor ($Md = .71$) than in recognition of non-examples under the influence of characteristic properties ($Md = .60$); however, this difference is considered small ($d = 0.2$) (Štemberger, 2021).

Discussion

The results show that a majority of children managed to identify intuitive triangles; thus, our results coincide with those of Clements (1999) and Tsamir (2008). They were less successful in the identification of intuitive squares in comparison to the results of Clements (1999).

When it comes to identifying intuitive non-examples, in comparison to the results of Tsamir (2008), the success rate of recognition of this type of non-example is lower. In the above study, children recognized the pentagon as one of the non-intuitive non-examples of a triangle at a higher rate than children in our study, who recognized a quadrangle as a non-intuitive non-example of a triangle, and a rectangle as a non-intuitive non-example of a square. Considering the Wilcoxon Signed Ranks Test, we see that children showed slightly better knowledge of the distractors and properties of triangles compared to those for squares. This information was not unexpected, since children are usually first introduced to the properties of the triangle. The configuration was the distractor that most often influenced the successful identification of geometric shapes. The most successful in identifying geometric shapes from a complex figure were 6-year-old children, where as many as 73.2% successfully singled out both a triangle and a square. In two examples, the children were asked to detach a certain geometric shape from a complex configuration - one related to the configuration of the same geometric shapes (two triangles or two squares brought together) and the configuration of different geometric shapes, where one of the mentioned geometric shapes was part of a familiar configuration (a triangle presented as a house roof and a square as part of a rocket). The results show that the configuration of the same shapes had a greater effect. Some children from the sample, coloured the examples in different colours, thus clearly distinguishing the geometric shapes (Figure 2). We believe that this activity of the children was influenced by the formulation of the tasks, and we considered their answers to be correct. In addition, a certain number of children coloured in the entire configuration, both the same and different shapes with the same colour. We did not consider these answers, because this children's activity did not indicate that they could single out the required geometric shape.

Figure 2. Coloured configuration in which geometric shapes are separated

When it comes to the properties of geometric shapes, it is noticeable that certain properties of geometric figures do not follow the ascending development path. The properties of squares and triangles in some cases are better noticed and identified by 3 and 4-year-old children than by 5 and 6-year-old children. For example, incomplete square boundaries were ignored by 51.4% of 3-year-olds, as opposed to 85.4% of 6-year-old children. All 6-year-old children who noticed that incomplete borders were not a property of the square "supplemented" the border, and only then coloured in the shape. Some 5-year-old and 6-year-old children "drew" or "filled in" what was missing for a triangle or square to be "complete" (Figure 3). By supplementing the boundaries so that they represent a closed broken line, we believe the children showed that they understood this property of geometric shapes.

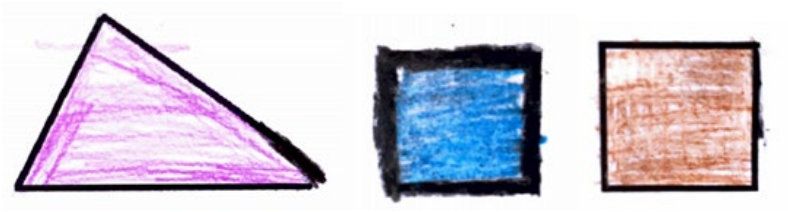

Figure 3. Completed boundary line for geometric shapes

The pattern with a missing boundary line, as one of the properties that do not characterize geometric shapes, was recognized and coloured in by more 5-year- and 6-year-olds than 3-year- and 4-year-old children. Children aged 5-6-coloured in those examples in different colours (Figure 4).

Figure 4. Geometric shapes with patterns marked multi-coloured

Conclusion

Our research focused on distractors that affect identification and properties that preschool children ignore when identifying geometric shapes of triangles and squares.

When it comes to distractors in identification, we conclude that the biggest distractor is the configuration (perceiving shapes in a complex geometric figure). The size of shapes has the least effect on identification as a distractor. Based on these results, we can conclude that with increasing age, the effect of the distractor on the identification of geometric shapes decreases.

According to the results, the properties of geometric shapes are more difficult for children to notice than a distractor. The property of geometric shapes that children first adopt is the number of sides. Children notice this property better in the case of a triangle than with a square. The property that is most often ignored when identifying a plane geometric figure is the closed broken line. In both cases, children were shown a geometric shape without a single vertex, with as many as 80.8% of children neglecting this property. Results also show that children across ages 3 to 6 are equally successful in identifying non-examples of geometric shapes. However, 6-year olds are significantly less successful in the case of square identification under the influence of properties. This should be further investigated. We conclude that there is no progress in the process of shape identification under the effect of non-example properties during age development. Clements and Battista (1992) said that the visual level (Level 1) of thinking is important and could last for years; we add that it also applies to the pre-representative level (Level 0). It is crucial for children to manipulate objects in a real environment and to be geometrically engaged in the early years. This is a critical point for curriculum developers and should be taken into account.

We conclude that children can more accurately identify geometric shapes under the influence of distractors than when some characteristic properties are changed. To sum up, they exhibited better recognition of examples than of non-examples. We presume this to be a consequence of educational practice. The teacher probably provides more examples than non-examples, and such practice needs to be changed. One limitation of the study is that it focused on only two types of geometric shapes – the ones that children first encounter in the preschool period. The issue should be explored further for other shapes in the future.

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NAVODILA AVTORJEM

Osnovni namen revije je povezati širok spekter teoretičnih izhodišč in praktičnih rešitev v izobraževanju ter tako spodbujati različne metodološke in vsebinske razprave. Uredniški odbor združuje strokovnjake in raziskovalce iz več evropskih držav in s tem želi ustvariti možnosti za živahen dialog med raznovrstnimi disciplinami in različnimi evropskimi praksami, povezanimi z izobraževanjem.

Revija za elementarno izobraževanje torej objavlja prispevke, ki obravnavajo pomembna, sodobna vprašanja na področju vzgoje in izobraževanja, uporabljajo primerno znanstveno metodologijo ter so slogovno in jezikovno ustrezni. Odražati morajo pomemben prispevek k znanosti oziroma spodbudo za raziskovanje na področju vzgoje in izobraževanja z vidika drugih povezanih ved, kot so kognitivna psihologija, razvoj otroka, uporabno jezikoslovje in druge discipline. Revija sprejema še neobjavljene članke, ki niso bili istočasno poslani v objavo drugim revijam. Prispevki so lahko v slovenskem, angleškem ali nemškem jeziku.

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Prejete prispevke najprej pregleda urednik/založniški odbor in ugotovi, ali vsebinsko ustrezajo konceptu in kriterijem revije.

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3. Končno odločitev o objavi članka sprejme urednik na temelju priporočil recenzentov. Pri tem utemeljitve za svojo odločitev ni dolžan navesti.
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Pri pripravi besedila prispevka upoštevajte naslednja navodila:

1. Tipkopis oddajte kot dokument v programu Microsoft Windows. Nabor pisave je Times New Roman, velikost črk 12 za osnovno besedilo in 10 za povzetka v slovenskem in angleškem jeziku, literaturo in citate, če so daljši od treh vrstic, razmik med vrsticami pa je 1,5. Velikost pisave v tabelah in naslovih tabel ter grafov je 10; razmik med vrsticami pa enojni. Širina tabele naj ne presega 12,5 cm. Besedilo naj bo obojestransko poravnano. Vodilni naslovi naj bodo zapisani krepko, prvi podnaslovi ležeče, drugi podnaslovi pa navadno. Naslovov in strani ne številčite in ne uporabljajte velikih tiskanih črk.
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Primeri:
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Duh, M. (2004). *Vrednotenje kot didaktični problem pri likovni vzgoji.* Maribor*:* Pedagoška fakulteta.

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Planinšec, J. (2002). Športna vzgoja in medpredmetne povezave v osnovni šoli. *Šport*, *50*(1), 11–15.

Prispevki v zbornikih: priimek, začetnica imena avtorja, leto izida, naslov prispevka, podatki o knjigi ali zborniku, strani, kraj, založba.
Fošnarič, S. (2002). Obremenitve šolskega delovnega okolja in otrokova uspešnost. V M. Juričič (ur.), *Šolska higiena: zbornik prispevkov* (str. 27–34). Ljubljana: Sekcija za šolsko in visokošolsko medicino SZD.

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