University of Maribor Press

EDITORS
MARTA LICARDO ISABEL SIMÕES DIAS

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION AND INTERNATIONAL EDUCATIONAL MODULES

Pedagoška fakulteta

Contemporary Themes in Early Childhood Education and International Educational Modules

Editors
Marta Licardo
Isabel Simões Dias

May 2019

Title Contemporary themes in early childhood education and international educational modules

Editors assist. prof. Marta Licardo, PhD
(University of Maribor, Faculty of Education)

assoc. prof. Isabel Simões Dias, PhD
(Polytechnic Institute of Leiria, School of Education and Social Sciences)

Authors of scientific papers Isabel Simões Dias, Urška Žugelj, Maja Hmelak, Marta Licardo, Metka Purgaj, Alenka Lipovec, Marina Rodrigues, Dragica Haramija, Mateja Vrečič, Aleksandra Šindić, Tamara Pribišev Beleslin and Marcela Batistič Zorec.

Authors of professional reports Pablo Ruiz Estévez, Jos Linneman, Lisa Taggart, Grainne McCaffrey, Isabel Simões Dias, Marta Licardo, Janja Batič, Primož Krašna and Ana Tina Jurgec.

Review assoc. prof. dr. Tina Vršnik Perše, PhD
(University of Maribor, Faculty of Education)

assist. prof. Katarina Habe, PhD
(University of Ljubljana, Academy of Music)

Language editing Lisa Taggart
(North West Regional College)

Grainne McCaffrey
(North West Regional College)

Technical editor Jan Perša, MEng
(University of Maribor Press)

Cover designers Jan Perša, MEng
(University of Maribor Press)

Lilia Pedro
(Ludotempo)

Cover art work Ana Batič Krašna

Graphics material Authors

Published by
University of Maribor Press
Slomškov trg 15, 2000 Maribor, Slovenia
http://press.um.si, zalozba@um.si

Co-published by
University of Maribor, Faculty of Education
Koroška cesta 160, 2000 Maribor
http://pef.um.si, dekanat.pef@um.si

Edition 1st

Publication type E-Book

Available at http://press.um.si/index.php/ump/catalog/book/413

Published Maribor, May 2019

Project Erasmus+: International Learning Module in Early Years Education (EYE)

CIP - Kataložni zapis o publikaciji
Univerzitetna knjižnica Maribor

373.21(082)(0.034.2)

CONTEMPORARY themes in early childhood education and international educational modules [Elektronski vir] / editors Marta Licardo, Isabel Simões Dias ; [authors of scientific papers Isabel Simões Dias ... [et al.] ; authors of professional reports Pablo Ruiz Estévez ... et al.]. - 1st ed. - Maribor : University of Maribor Press, 2019

Način dostopa (URL):
http://press.um.si/index.php/ump/catalog/book/413

ISBN 978-961-286-269-5 (pdf)

doi: 10.18690/978-961-286-269-5
1. Dias, Isabel Simões 2. Estévez, Pablo Ruiz 3. Licardo, Marta
COBISS.SI-ID 96691457

ISBN 978-961-286-269-5 (PDF)
978-961-286-270-1 (Broš.)

DOI https://doi.org/10.18690/978-961-286-269-5

Price Free copie

For publisher full prof. Zdravko Kačič, PhD
Rector, University of Maribor

University of Maribor Press

Contemporary Themes in Early Childhood Education and International Educational Modules

MARTA LICARDO & ISABEL SIMÕES DIAS

Abstract The purpose of the book is to present contemporary themes in early childhood education that are important for preschool education in practice and as topics in the education of students who will work in preschool education settings. The presented scientific research includes various themes in the field of pedagogy, didactics, special didactics and psychology. The results of the research reveal important conclusions regarding relationships between children and preschool teachers, children's relationships with peers, important practices for social-emotional learning, problems that occur in students' mathematics knowledge and the possibilities of promoting family literacy. Professional reports present international good practices in various educational settings for preschool education students. The presented good practices are innovative and are all based on socio-constructivist pedagogies. Authors report on how to activate learning in early childhood education with service learning, programming with children, science technology and maths, daily training in kindergartens, multimodal literacy, dance and didactic materials. In the last chapter international educational modules are presented that were prepared and tested within the project Erasmus+: International Learning Module in Early Years Education (EYE), between the years 2017 and 2019. These modules are examples of innovative education and how to integrate important topics in international early childhood education.

Keywords: • early childhood education • international modules • pedagogy • didactics • special didactics •

CORRESPONDENCE ADDRESS: Marta Licardo, PhD, Assistant Professor, University of Maribor, Faculty of Education, Maribor, Slovenia, e-mail: marta.licardo@um.si. Isabel Simões Dias, PhD, Associate Professor, Polytechnic Institute of Leiria, School of Education and Social Sciences, Leiria, Portugal, e-mail: isabel.dias@ipleiria.pt.

DOI https://doi.org/10.18690/978-961-286-269-5 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

We would like to thank all the authors who have contributed to the achievement of this book with their dedicated work and enthusiasm. Special thanks goes to Lisa Taggart and Grainne McCaffrey from Friesland College, Northern Ireland UK; to the University of Maribor Press technical editor, Jan Perša; to the Faculty of Education at the University of Maribor, who supported the publication of the book; and to Dr Tina Vršnik Perše and Dr Katarina Habe. We would also like to thank Lilia Pedro from Ludotempo, Portugal, and our youngest author for the artwork on the cover, Ana Batič Krašna.

University of Maribor Press

Table of Contents

University of Maribor Press

PREFACE

MARTA LICARDO & ISABEL SIMÕES DIAS

This mongraph is the result of a collaboration between researchers and practising teachers who work in early childhood education on various levels of education in seven different countries across the EU and beyond (Germany, the Netherlands, the United Kingdom (Northern Ireland), Portugal, Slovenia, Spain, and Bosnia and Herzegovina). The idea of the book started within the project Erasmus+: International Learning Module in Early Years Education (EYE). Although the book was not one of the project objectives, and is not funded by the project, the authors were highly motivated to publish the results of research and good practices in early childhood education. We all think it is important to write about contemporary themes and to share innovative and good practices that occur in our countries, through which we can all learn and improve the level of professionalism in early childhood education. The focus of the themes is twofold, as the articles focus on what is important for preschool education in practice and what is important in educating students who will work in preschool education settings.

The book is organized into three main chapters. The first chapter presents the scientific theoretical and empirical articles, which focus on important themes like socio-constructivist pedagogies, relationships and interactions on the level adult, children and peers, the practices of preschool teachers for social-emotional learning, special didactic themes related to the mathematical knowledge of preschool education students, the development of mathematical concepts in children, family literacy and the development of specific cognitive concepts in children. The second chapter includes professional reports from the projects on early childhood education and important good practices that were implemented in the education of students, e.g. service learning in Spain, programming with children in the Netherlands, STEM in Northern Ireland, continuous teacher training in Portugal, and the development of didactical materials for migrant children, multimodal literacy and dance education, all three from Slovenia. The third chapter is dedicated to international EYE modules, which were planned, tested and evaluated within the project Erasmus+: International Learning Module in Early Years Education (EYE), between 2017 and 2019. International educational modules are structurally similar but thematically different training modules for preschool students, which are implemented simultaneously in the participating institutions and can be freely chosen by learners from the partner organizations. All modules are recognized by all educational institutions and evaluated according to the same criteria. The learner acquires key qualifications as well as thematic and professional qualifications. To accompany this professional mobility, the partners developed a language and accompanying programme that provide all the necessary support to the participants. More information about the project can be found at: https://www.project-eye.eu/

We hope that this book can contribute to the dissemination of childhood education. Based on research and practice in different contexts of teaching and learning, it shares experiences in some European countries.

SCIENTIFIC ARTICLES

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION
AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Socio-constructivist Pedagogies: The Interaction as the Foundation of the Child´s Development and Learning

ISABEL SIMÕES DIAS

Abstract This essay aims to discuss the role of interaction in child´s development and learning in early years. With reference to the Portuguese educational system and Portuguese research on childhood pedagogy, it reinforces the value of early experiences in brain development. As sustained in neurosciences, it highlights the relationship between emotion, cognition and learning. The role of interaction in child´s development and learning is supported in three socio-constructivist pedagogical approaches: Reggio Emilia (Italia), HighScope (EUA) and Pedagogy-in-Participation (Portugal). These participatory approaches are child-centred and believe that children learn through experiences of touching, moving, listening and observing. In a relationship-driven environments where children have opportunities to choose materials, ideas and people to interact with, teachers are seen as facilitators or partners in children learning. Focused on the relationship as an educational tool, these approaches recognize social interaction as a guarantee of the active role of the child in their developmental and learning processes.

Keywords: • child • interaction • pedagogy • socio-constructivism • teacher •

CORRESPONDENCE ADDRESS: Simões Dias, PhD, Assistant Professor, Polytechnic Institute of Leiria, School of Education and Social Sciences, Leiria, Portugal, e-mail: isabel.dias@ipleiria.pt.

DOI https://doi.org/10.18690/978-961-286-269-5.1 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

Neuroscience research has emphasized the role of early interaction experiences as a source of development, revealing that whenever the child reacts to stimuli from the environment several signals travel and activate their neural circuits. Early experiences are determinants of brain development and neuroscience studies have reinforced the idea that child/environment interaction is a key prerequisite for the development of the subject's abilities and emotions (Conselho Nacional de Educação, 2008).

The child's current pedagogies argue that children are competent and active agents and are actively involved in the construction of their own knowledge (Bressani, Bosa, & Lopes; 2007; Cardoso, 2010; Conselho Nacional de Educação, 2008; Edwards & Rinaldi, 2009; Formosinho & Oliveira-Formosinho, 2008; Oliveira-Formosinho, Kishimoto, & Pinazza, 2007; Portugal, 2012; Post & Hohmann, 2007). These socio-constructivist pedagogies argue that a warm, respectful, responsive, affective child/teacher relationship is the basis for children development and learning processes. Grounded on these evidences, this essay aims to discuss the role of the interactions in child´s development and learning in Early Childhood Education settings. Focused on the relationship as an educational tool, argumentation is based on three pedagogical approaches of socio-constructivist nature well-documented in Portuguese research (Reggio Emilia, High Scope and Pedagogy- in-Participation).

Early Childhood Education: a relationship-driven environment

The major preschool settings in Portugal are day care centers (social response for children between 3 months to 3 years that is under the guardianship of the Ministry of Social Security) and kindergartens (educational response for children between 3 and 6 years old that is under the tutelage of the Ministry of Education). Day care centers can be private or institutions of social solidarity and kindergartens can be private, social or public institutions. There are a *Curriculum Guidelines for Preschool Education* (a set of principles which offer a common reference point for teachers regarding their practice of leading and developing the educational process with the children) that work 3 content areas: personal and social training, expression/communication and knowledge of the world (Silva, Marques, Mata & Rosa, 2016).

Collaborating with the family in sharing educational and care responsibilities, preschool centers seek to ensure that the child's needs (physical, affective, social, needs) are met. In preschools contexts, teachers encourage educational experiences that inspire a sense of security and self-esteem, curiosity and exploratory impetus or communication and self-control (Portugal, 2012). These teachers care for and educate each child, valuing the daily routines and times of free activities. Teachers also understand the child's competences and build learning environments that foster partnership with the child and their families/community in a logic of democratic and inclusive education (Formosinho & Oliveira-Formosinho, 2008). In this sense, the preschool center is i) an educational environment of interactions (a place where children and adults dialogue, listen and discuss to share meanings), ii) a context for interactive experiences, iii) a setting of infinite possibilities (linguistic, cultural, social, ethical, ...), of research and creativity, of pleasure, of reflection, of coexistence (Cardoso, 2010).

Young children need individualised attention from someone who knows them, who meets their physical and psychological needs and who creates opportunities for multiple discoveries. Relying on the teacher, in a safe and healthy environment, the child and teacher create strong affective bonds by co-building an ethical relationship that will sustain the educational relationship. In the first years of life, the body constitutes the first circuit of communication with others, representing a relational space of symbolic and cultural construction. The child uses the body to react to the others, to vocalize, to move, to communicate and to connect with others (Post & Hohmann, 2007). Gradually, the child learns the emotional behaviours of other´s and gives them a meaning - the child´s actions emerge in relation to the adult´s actions. This reciprocal observation marks the mutual presence and invites to an emotional involvement. In this *ethic of care* (sensitivity towards the needs of the others and respect for child´s individuality and autonomy), the teacher analyzes and interprets child´s experiences on the environment, supporting it closely in a zone of proximal development that guarantees learning (Vygotsky, 1991).

According to Bressani, Bosa and Lopes (2007, p.22), this affective relationship

> "(…) *involves the willingness to care for and educate to the same extent and is directly reflected in the content of the attention that is offered to young children (...). This relationship involves affection and sensitivity to perceive what the child needs (…)*"[1].

In an ecological approach, it is argued that development and learning take place through the child's participation in activities in the environment, in interactions with family members, teachers, friends and neighbors (Bronfenbrenner, 1994). In this perspective, development is based on cultural practices and traditions of different communities. In each culture, smiles, tears, looks, movements are interpreted by adults who want to connect with the child. Interacting with the adult, the child seeks love, security, recognition or fulfills curiosities. This positive interaction will generate feelings of belonging and trust, helping the child to build a fortunate self-image of oneself and of the world (Araújo, 2017, 2018; Bressani, Bosa & Lopes, 2007).

The hidden regulators

Preschool settings provide positive daily interactions that support important affective experiences for child´s well-being and development. This idea has been reinforced by studies in the field of neurosciences that advocate, for example, the existence of connections between emotion, social functioning and decision-making processes. Immordino-Yang and Damasio (2011, p. 125),

> "*(…) the aspects of cognition that are recruited most heavily in education, including learning, attention, memory, decision making, motivation, and social functioning, are both profoundly affected by emotion and in fact subsumed within the processes of emotion."*

[1] Translation from Portuguese text.

For Immordino-Yang (2011, p. 99), the human being cannot be separated from the biological origin nor ignore the sociocultural and cognitive forces that makes him unique:

> "*(…) emotions, such as anger, fear, happiness and sadness, are cognitive and physiological processes that involve both the body and mind (…) affective neuroscience is revealing is that the mind is influenced by an interdependency of the body and brain; both body and brain are involved, therefore, in learning."*

The first years of life are a period of rapid development of the cortical structure and adults play here an important role. Adults will be the "hidden regulators" of cardiovascular, immunological, endocrinological, metabolic and behavioral parameters (DiPietro, 2000). Without adults, the child's muscular system tends to atrophy and the circulatory, respiratory and endocrine systems may have functional and physiological insufficiencies (Zabalza & Zabalza-Cerdeiriña, 2018)

According to Schonkoff and Phillips (2000), early relationships have a decisive and lasting impact on the way people develop. For Bowlby (1965) the child's need to bond with an adult is as fundamental as the need to be fed. This primary impulse of social orientation fulfills the biological function of providing proximity to the reference figure, increasing the probabilities of protection and survival. According to Costa (2018), parental care and external stimuli influence the pattern of synaptic formation, the formation of dendritic spines, regional synaptic density and the emergence of psychomotor, cognitive, and social skills - the brain is sensitive to the environment and the children neuronal plasticity allows an adjustment to the environment.

These neuroscience data support the idea that child´s biological organization is modeled by affective, sensitive, stimulating and encouraging teachers. These bonds support the learning processes and give a prominent role to affectivity, a process determined biologically by complex sets of chemical and neuronal reactions (Immordino-Yang & Damasio, 2011). As the child´s brain is structured through the consistency of the social and emotional environment, any interaction is determinant for child's development and learning. For Zabalza and Zabalza-Cerdeiriña (2018) the child needs movement (leads to the excitation of the brain)

and routine (creates neural pathways) to learn. In these two paths satisfactory experiences occur and lead to the release of dopamine, a neurotransmitter that activates the brain's reward system, helping it to remember facts with agility.

The responsive teacher and socio-constructivist pedagogies

Young children need trustful adults, who provide peer interaction and with whom they have the freedom to explore a safe and healthy environment (Portugal, 2012). Close and positive interaction will allow children to feel understood and understand the surrounding environment as a predictable and interesting place. It is this significant transaction that allows the early childhood teacher to apprehend children´s rhythms, tastes, positions and preferences (Dias, 2014) and to nurture and stimulates children to go forward (Zabalza & Zabalza-Cerdeiriña, 2018). The role of interaction in child´s development and learning is supported in three socio-constructivist pedagogical approaches: Reggio Emilia (Italia), HighScope (EUA) and Pedagogy-in-Participation (Portugal). These approaches, widely studied in Portugal, advocate that the co-construction of meaningful emotional interactions with a *unique emotional grammar* promote child´s knowledge (Araújo, 2018). Briefly, we present the main ideas from each of these approaches.

A) For **Reggio Emilia approach** (Italia), education is a right of all children and a responsibility of the community: i) the child is an active protagonist in his/her developmental process; ii) the child has 100 languages, 100 ways of thinking, expressing, understanding and engaging with others; iii) the child participates in the construction of learning; iv) the child listens to others; v) the child learns in a process that is understood as being individual and constructed with others; vi) the child investigates to know and vii) the child documents his/her own learning (Rinaldi, 2006). The child is curious, competent and culture producer (Araújo, 2017).

The educational environment is seen as a pedagogical tool because it investigates children's thinking and learning and encourage child/adult interaction – environment as a *forum* for autonomy and social affiliation. The adult encourages the use of the child's 100 languages, promotes the child's expression through music, movement, painting or drawing, expanding the child's potential. The adult values the real experience, acts in the proximal zone of development and

contributes to the child's deepening of the reasoning. Reggio emphasise team work (children, parents, teacher, cook and *atelierista*)[2] and argues that it is this continuous communication between child/adult(s) that facilitates the natural architecture of relational spaces and fosters adventures of knowledge. As claimed by Edwards and Rinaldi (2009) and Rinaldi (2006), learning is a group work carried out through common projects that facilitate child´s knowledge and that occurs spontaneously and naturally when imbued with affectivity. In this sense, the child builds knowledge in a network of interactions (relations of reciprocity and mutual respect) with others - children and adults - at school, family and community. In Reggio, dialogue and exchanges are fundamental to build a school based on relationships, collaboration and communication.

B) **HighScope** is a quality approach to early childhood care and education. It identifies and builds on children's strengths, interests and abilities. The central belief of the HighScope approach is that children construct their own learning by doing and being involved in working with materials, people and ideas. Interaction with people and materials allow children to found out how to move, how to hold and act on objects, how to communicate and interact with family, peers, and teachers - active learning, complete with hands-on experiences is the driving force behind the HighScope method (Post & Hohmann, 2007).

Children are encouraged by their teachers to take the next step in learning, through a curriculum with eight main focuses: i) approaches to learning; ii) social and emotional development; iii) physical development and health; iv) language, literacy, and communication; v) mathematics; vi) creative arts; vii) science and technology and viii) social studies (Oliveira-Formosinho, Lino & Niza, 2007). These areas are broken down into *key experiences* and worked out in a *learning wheel* logical (child's observation, adult-child interaction, physical environment, schedules and routines).

The teacher i) organises the child's areas of interest, ii) preserves children's routine, iii) encourages children to engage in *key experiences* (helps them how to make choices, how to solve problems, how to get involved in situations that promote their development), iv) establishes guidelines to promote continuity of

[2] Children can observe the cooks at work and frequently help with meal preparation and cleanup – all staff encourage children to communicate in their hundred languages.

care, to build trust with children and to establish a cooperative relationship to support children's intentions, v) treats children with affection and lives with them pleasant experiences. This responsible teacher is a reliable person (an anchor) and children feel they can be reassured and mentored by him/her – relationship of trust characterized by positivity, consistency and continuity, respect and reciprocity (Araújo, 2017).

To assess child's development, the teacher uses the Preschool Child Observation Record (COR) as well as the Preschool Program Quality Assessment (PPQA) (Post & Hohmann, 2007). In a daily routine, the teacher records behaviours related to the *key experiences*, shows interest in the child's play, appreciates child´s actions, communicates respect and warmth, recognises child's feelings and responds promptly to the signs and approaches of the child, …. These teacher´s behaviours induce children to trust, to be curious, to be flexible, to be exploitative, to be strong and courageous, to establish relationships with peers and other adults - the teacher is (also) active: observes child´s action, support his/her findings, analyses its owns observations and makes decisions for the next planning (Oliveira-Formosinho et al, 2007; Post & Hohmann, 2007).

C) **Pedagogy-in-Participation** (Portugal) is a learning approach that sees children as competent subjects with the right to be listened to and to be valued. Children have skills of exploration, of discovery, of communication, of creation. Their agency and competence enable them to be heard and to participate of their culture (Araújo, 2017; Oliveira-Formosinho et al., 2007).

In an educational environment of diversity and of democracy, the interaction between child/teacher promotes the negotiation, the listening, the observation, the questioning, the planning, the research, the experimentation, the collaboration and the problem solving. The teacher i) seeks child´s development, ii) organises the educational environment and the learning experiences, iii) listens and observes the child, iv) assesses child´s development and learning, v) planning, vi) questioning, vii) extends children interests and knowledge to culture, viii) acts with confidence and get involved in the learning process of each child. The participation, the listening, the dialogue and the negotiation become pillars to help children to deal with ambiguity and emergent situations (Cardoso, 2010). Learning is seen in its context and is assumed that child´s acquisition of knowledge requires a social and pedagogical setting that sustains, promotes,

facilitates, and celebrates participation. A context that is a partner in the construction of participation, is based on 4 axes of educational intentionality: i) axis of being (to develop personal, social and cultural identities); ii) axis of participating and belonging (to develop participatory identities); iii) axis of exploring and communicating (to develop communicative identities) and iv) axis of narrating and meaning (to develop narrative identities). These axes foster child´s rights and competence and are materialized in the teacher´s interactive intervention (Oliveira-Formosinho & Formosinho, 2017).

Conclusion

We can conclude these three participatory approaches:

i) recognize the child / teacher interaction as a guarantee of children´s active role in their development and learning processes;
ii) value environments where children feel welcomed and confident;
iii) value children´s experience, culture and knowledge in dialogue with teacher's experience, culture and knowledge;
iv) argue that the teacher supports children, conveys confidence in their abilities and celebrates their achievements;
v) sustain an ethics of relations.

Focused on this social-constructivist path, these child-centred approaches reveal interaction as the nucleus of the education of young children. Teachers provide contextually meaningful and concrete experiences that offer learners the opportunity to ask questions, seek understanding and communicate their ideas. Teachers are guides and facilitators whose own knowledge may also change during interactions (*educators learn along with the children*). To guide appropriately, the teacher must observe children's individual approaches to learning, reflect on effective ways of enhancing learning and promote development, organize appropriate materials to stimulate learning. This specific and intentional practice has implications for teaching and drive towards child care quality.

References

Araújo, S. (2018). Aprendizagem profissional no estágio em creche: representatividade e significado atribuído a dimensões da pedagogia. *Rev. FAEEBA*, 27 (51), 29-44. [Araújo, S. (2018). Professional apprenticeship in the day care center: representativeness and meaning attributed to dimensions of pedagogy. *Rev. FAEEBA*, 27 (51), 29-44.]

Araújo, S. (2017). Perspetivas pedagógicas para a educação em creche: princípios convergentes e implicações para a prática. *Cadernos de Educação de Infância,* 12, 104-112. [Araújo, S. (2017). Pedagogical perspectives for day care education: convergent principles and implications for practice. *Notebooks of Childhood Education*, 12, 104- 112.]

Bowlby, J. (1965). The growth of independence in young child. *Royal Society of Health Journal,* 76, 587-591.

Bressani, M. C., Bosa, C., & Lopes, R. (2007). A responsividade educadora-bebé em um berçário: um estudo exploratório. *Revista Brasileira Crescimento e Desenvolvimento Humano,* 17 (3), 21-36, 2007. [Bressani, M.C., Bosa, C., & Lopes, R. (2007). The teacher-baby responsiveness in a nursery: an exploratory study. *Brazilian Journal of Human Growth and Development*, 17 (3), 21-36, 2007.]

Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T.N. Postlethwaise (Eds.). *International Encyclopedia of Education***,** Vol. 3, 2nd. Ed. Oxford: Elsevier, pp. 1643-1647.

Cardoso, G. (2010). Pedagogias participativas em creche. *Cadernos de Educação de Infância,* 91, 4-7. [Cardoso, G. (2010). Participative pedagogies in day care center, *Notebooks of Childhood Education,* 91, 4-7.]

Conselho Nacional de Educação (Ed**.**) (2008). *A Educação das crianças dos 0 aos 12 anos.* Lisboa: Conselho Nacional de Educação. [National Council of Education (Ed.) (2008). *The Education of children from 0 to 12 years*. Lisbon: National Council of Education.]

Costa, J.C. (2018). Neurodesenvolvimento e os primeiros anos de vida: genética vs. ambiente. *RELAdEI - Revista Latinoamericana de Educación Infantil*, 7(1), 52-60. [Costa, J.C. (2018). Neurodevelopment in the first years of life: genetics vs. ambient. *RELAdEI - Revista Latinoamericana de Educación Infantil*, 7 (1), 52-60.]

Dias, I. (2014). De bebé a criança: caraterísticas e interações. *Revista Eletrónica Pesquiseduca*, 6 (11), 158-172. [Dias, E. (2014). From baby to child: characteristics and interactions. *Journal Electronic Research and Educate*, 6 (11), 158-172.]

DiPietro, JA. (2000). Baby and the brain: advances in child development. *Annu. Rev. Publ. Health,* 21, 455-471.

Edwards, C., & Rinaldi, C. (2009). *The diary of Laura. Perspetives on a Reggio Emilia Diary.* USA: Redleaf Press.

Formosinho, J., & Oliveira-Formosinho, J. (2008). *Pedagogy-in-Participation: Childhood Association.* Lisbon: Aga Khan Foundation.

Immordino-Yang, M. H. (2011). Implications of affective and social neuroscience for educational theory. *Educational Philosophy and Theory*, 43 (1), 98-103, 2011.

Immordino-Yang, M. H., & Damásio, A. (2011). We feel, therefore we learn: the relevance of affective and social neuroscience to education**.** *LEARNing Landscapes*, 5 (1), 115- 130.

Oliveira-Formosinho, J., & Formosinho, J. (2017). Pedagogia-em-Participação: a documentação pedagógica no âmago da instituição dos direitos da criança no cotidiano. *Em Aberto*, 30(100), 115- 130. [Oliveira-Formosinho, J., & Formosinho, J. (2017). Pedagogy-in-Participation: the pedagogical documentation at the heart of the institution of children's rights in everyday life. *In Open Journal*, 30 (100), 115-130.]

Oliveira-Formosinho, J., Kishimoto, T., & Pinazza, M. (Orgs.) (2007). *Pedagogia(s) da Infância. Dialogando com o passado. Construindo o futuro.* Porto Alegre: Artemed Editora. [Oliveira-Formosinho, J., Kishimoto, T., & Pinazza, M. (Orgs.) (2007). *Pedagogy (s) of Childhood. Dialoging with the past. Building the future.* Porto Alegre: Artemed Editora.]

Oliveira-Formosinho, J. (Org.), Lino, D., & Niza, S. (2007). *Modelos curriculares para a Educação de Infância. Construindo uma práxis de participaçã*o. Porto: Porto Editora. [Oliveira-Formosinho, J. (Org.), Lino, D., Niza, S. (2007). *Curricular models for the Education of Childhood. Building a participation praxis*. Porto: Porto Editora.]

Portugal, G. (2012). *Finalidades e práticas educativas em creche: das relações, atividades e organização dos espaços ao currículo na creche.* Porto: Confederação Nacional das Instituições de Solidariedade. [Portugal, G. (2012). *Purposes and educational practices in day care center: from* the relationships, activities and organization of the spaces to the curriculum in day care center. Porto: National Confederation of Solidarity Institutions.]

Post, J., & Hohmann, M. (2007). *Educação de bebés em infantários – cuidados e primeiras aprendizagens.* Lisboa: Fundação Calouste Gulbenkian. [Post, J., & Hohmann, M. (2007). *Infant education in kindergartens - care and early learning.* Lisbon: Calouste Gulbenkian Foundation]

Rinaldi, C. (2006). *In dialogue with Reggio Emilia. Listening, researching and learning.* London and New York: Routledge.

Shonkoff, J., & Phillips, D. (Eds.) (2000). *From neurons to neighborhoods: The science of early childhood development.* Washington, DC: National Academy Press.

Silva, I. (Coord), Marques, L., Mata, L., & Rosa, M. (2016). *Orientações Curriculares para a Educação Pré-Escolar.* Lisboa: Ministério da Educação/Direção Geral de Educação. [Silva, I. (Coord), Marques, L., Mata, L., & Rosa, M. (2016). *Curricular Guidelines for Pre-School Education.* Lisbon: Ministry of Education / General Directorate of Education.]

Vygotsky, L. (1991). *A formação social da mente***.** São Paulo: Martins Fontes. [Vygotsky, L. (1991). *The social formation of mind.* São Paulo: Martins Fontes.]

Zabalza, M.A. y Zabalza-Cerdeiriña, M.A. (2018). Neurociencias y formación de profesores para la Educación Infantil. *RELAdEI - Revista Latinoamericana de Educación Infantil*, 7(1), 78-85. [Zabalza, M.A. and Zabalza-Cerdeiriña, M.A. (2018). Neurosciences and teacher training for Early Childhood Education. *RELAdEI - Revista Latinoamericana de Educación Infantil,* 7 (1), 78-85.]

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION
AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Building Child-teacher Relationships in Preschool: Introducing Neufeld Model of Attachment Development with Possible Implications for Practice

URŠKA ŽUGELJ

Abstract This article attempts to introduce the Neufeld model of attachment development as a means of empowering preschool teachers to deepen the quality of their relationships with children in their care. The importance of nurturing child-teacher relationships in preschool is presented through the lens of current research. It is argued that despite institutional recognition of importance of these relationships, teachers in practice may not be fully aware of the implications of the attachment dynamics. Due to their immaturity, children cannot operate out of social roles assigned in a way adults do. Instead, deep and nurturing relationships need to be established for children to be able to develop capability to act in mature and socially desired ways. Furthermore, supportive and safe relationships in preschool can serve as protective factors in case of adversity at home or in the community. Teachers need to understand the process of the development of attachment to support development in young children. The model presented explains the developmental trajectory of attachment capacity. Possible implications for preschool setting are presented.

Keywords: • child teacher relationships • preschool children • attachment • childhood development • Neufeld model of attachment •

CORRESPONDENCE ADDRESS: Urška Žugelj, PhD, Assistant, University of Ljubljana, Faculty of Arts, Department of psychology, Ljubljana, Slovenia, e-mail: urska.zugelj@gmail.com.

DOI https://doi.org/10.18690/978-961-286-269-5.2 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

At its best, preschool education is invested in developing the whole child, supporting maturation and development in all areas. In today's culture we are often tempted to emphasise the immediate results and to pursue goals that most directly support learning even at very early stages. However, it is becoming clearer that tending to emotions is highly relevant for healthy development in all areas, learning being no exception (Whitebread, 2012). Emotional lives of young children are to be nurtured in safe relationships with adults (Page & Elfer, 2013; MacNamara, 2016). Today, preschools host young children for most of their waking hours during the workdays, so the question of quality of relationship between children and their teachers becomes relevant.

It is almost counterintuitive to ask such a question. However, there are different interpretations of how this relationship is supposed to look like among institutions and also among teachers (even in the same institution; Page & Elfer, 2013).

In line with developmental paradigm based, which is based on contemporary research in developmental psychology, evolutionary psychology and neuroscience we see children as coming to this world prewired with a motivational system made of impulses, instincts and emotions (McNamara, 2016). They belong to the so called primitive parts of the brain and are not amenable to volition. Modern parts of the brain that have presumably evolved later in evolution are responsible for learning, memory and thinking. These parts also need longer to fully develop in a course of an individual lifetime. The goal of raising children is bringing emotions, instincts and impulses (primitive, non-volitional aspects) under a system of intention (volitional aspects) (Jun, 2018; MacNamara, 2016). However, to truly understand behaviour we need to realise that some experiences, such as emotions, arise from very ancient brain regions (Panksepp & Biven, 2012). This means that until mature enough, children will tend to act in accordance with their inbuilt drives and not necessarily in the way we expect or wish them to. This is due to the fact that their brain development is not yet complete. Maturation takes time and needs to be nurtured in the context of strong adult-child relationships. These relationships will provide the foundation on which full human potential can be realised (Gopnik, 2016; MacNamara, 2016; Roehlkepartain et al., 2017; Schuengel, 2012).

The importance of child teacher relationship is accepted in the official curricula or regulative legislation for preschools across Europe and United States (Page & Elfer, 2013), and is recognised by many professional associations involved in creating and developing policies for early years education. For example, National Association for the Education of Young Children (NAEYC; 2009) in the United States published a paper named "12 Principles of Child Development and Learning", where the seventh principle states, *"Children develop best when they have secure relationships"*. Similarly, in one of the principles from the document *Top 20 Principles for Pre-K to 12 Education*, American Psychological Association states, *"Interpersonal relationships and communication are critical to both the teaching-learning process and the social-emotional development of students"* (American Psychological Association, 2015, p. 22).

Research indicates that the quality of the relationship between a caregiver and a child in the first years of life is central to a child's later functioning. This evidence mainly comes from research within the framework of attachment theory (Hoffman, Marvin, Cooper, & Powell, 2006; Page, & Elfer, 2018) which is based on the classic work of J. Bowlby (Bowlby, 1953) and his followers, M. Ainshworth and R. Schaffer (Whitebread, 2012). Advancing this work, many researchers have shown that children are capable of forming more than one attachment and can be attached to caregivers who are not constantly present (Cugmas, 2009, 2011; Whitebread, 2012). Furthermore, quality and consistency of relationships are now listed as crucial factors for forming early attachments and establishing children's well-being (Whitebread, 2012). Although it is preferable to form strong attachments as early as possible (Bowlby, 2007), forming attachments later in development is also possible and beneficial (MacNamara, 2016; Neufeld, 2012). The latter having implications for the work with children who are adopted, have experienced trauma or other kind of negative early experiences.

Bowlby's student M. Ainsworth further developed the model and identified patterns of behaviour for "securely" attached child and three further patterns for children who were recognized as "insecurely" attached (for work related to kindergarten context, see Cugmas, 2009). Hoffman and colleagues (2006) list vast research that recognises the attachment quality as an important influence on the success of a child's developmental pathway toward self-reliant adulthood. They also note that although secure patterns of attachment are desirable, insecure

attachment patterns are not in themselves typically considered indicators of psychopathology. However, these insecure patterns can be heightening the risk of psychopathology when occurring in the context of additional risk factors. Given this, attempts to reduce the risk of insecure attachment are emerging in forms of various interventions (see Hoffman et al., 2006).

Aplying the neufeld model of attachment development

The Neufeld model of attachment development

Developmentally oriented model of attachment that might prove valuable in developing and maintaining reliant and lasting bonds between children and preschool teachers is Neufeld model. The model was developed by Canadian clinical psychologist and developmentalist Gordon Neufeld. Neufeld's model (Neufeld, 2012; Neufeld & Maté, 2006) is a result of a synthesis of the existing literature on child development and development of attachment, is built upon an extensive body of research findings, and is informed by the clinical work of the author. The result is a unique model of attachment presented below. However, the fact that model is very complex, encompasses many aspects of development and follows the development over a long span of years, might be the reason for the lack of studies examining its validity. However, the insights Neufeld offers seem to have important and unique implications and can offer alternative explanations to some of the current research and theory. Although, the author hopes that future research will provide empirical data on the subject.

This model explains attachment as a basic human need for proximity, as a capacity for relationships. According to Neufeld (Neufeld, 2012; Neufeld & Maté, 2006), this capacity will unfold naturally during the first six years of life if the conditions are right. However, the development can be arrested at some point if conditions worsen (lack of a reliant attachment figure or too much stress in the environment). Nevertheless, the process of development of attachment can be restored at any later stage in life, given the impediments are removed or conditions become more beneficial. Below the stages of attachment development as presented in the works of G. Neufeld (Neufeld, 2012; Neufeld & Maté, 2006) is introduced.

Neufeld identifies six stages. At each stage, a new, deeper way of attaching is possible. More specifically, while progressing through stages children should be able to achieve more profound ways of pursuing proximity with their attachments (note that for the purpose of this article the term *attachments* refers to persons a child is attached to).

In the first year of life, proximity with attachments will be pursued through the sense of "being with". An infant will need to be with, to smell, to touch, to hear, or otherwise sense the caregiver. Neufeld refers to this first stage as **attaching through the senses.**

However, by the second year "being with" is becoming more challenging. Children are now starting to walk and explore on their own. Furthermore, in western societies most children will begin nursery by their second year of life. Neufeld argues that sense of connection can be preserved by **being like** the caregiver. The child is intrinsically motivated to imitate. Therefore, language acquisition in this period comes naturally. This second stage is named **attaching through sameness**.

In the third year of life, children's developing cognitive abilities make them realize they are different; can think and act differently as their attachments. Ideally, they will now be able to **attach through belonging and loyalty** (third stage). Children will start to take the side of the ones attached to and will be more inclined to obey. Moreover, children will also more increasingly seek to possess (my mommy, my toy…) and to belong (e.g. at this age they love games where a caregiver claims them hers…).

By the fourth year of life, a stage **attaching through significance** should emerge. Now children will seek to be significant to the ones attached to. Children realise, they cannot possess mummy or teacher and realise that their attachments hold close what is important or dear to them. This kind of attaching becomes more vulnerable in the emotional sense. Feeling that they do not matter is very vulnerable. Any signs of not mattering will keep children from attaching more deeply and children will rely on less vulnerable (less mature) ways of attaching.

However, if the need to matter is fulfilled, a new way of attaching is possible from the fifth year. The fifth stage that emerges is referred to as **attaching through love**. Neufeld refers to this as emotional intimacy or giving one's heart to the other person. However, if the territory is not safe enough, this kind of attaching cannot take place. A child's capacity for emotional intimacy will not evolve, and can sadly stay arrested for many years or even entire life. At this age, many children will want to marry their parents, sisters, aunts, or sometimes teachers.

When attached at the heart level, children in the sixth year will seek to be understood and accepted by the ones they love. Thus, this final stage is labelled **attaching through being known.** The child's cognitive and personal development will by now result in a separate sense of self which is private, cannot be seen from outside unless shared by the child. In order to achieve this, the adults will have to convey to children that it is safe to open up. As soon as adults become judgemental of children's inner states or when adults condition their love or presence on children's accordance with adult expectations (goals, beliefs…), they risk loosing children's trust. To illustrate, even in adulthood a relationship with a person for whom one cares very much, but is not able to be understood or known by this person, feels empty and unsatisfying.

What to keep in mind when creating and maintaining the connection

How can we make use of understanding the development of capacity for attachment in helping young children develop and learn? The Neufeld model has many implications. However, while understanding the developmental stages of attachment, we need to keep in mind some other characteristics of attachment outlined by Neufeld (2012):

(a) Attachment is a **basic human need** for proximity with others

As already mentioned, to fully appreciate the unfolding of the capacity to attach, we need to understand that attachment is a basic need of a young child (Neufeld, 2012; Neufeld & Maté, 2006). In other words, attachment theory predicts that young children feel an increased level of danger when they cannot access the person they are attached to. This sense of danger triggers alarm reaction that

activates various emotions, among them attachment seeking response usually being the most immediate (Bowlby, 2007).

(b) For attachment to work properly the relationships have to be arranged hierarchically

This is consistent with the notion mentioned above that children come to us immature and consequently dependent upon our care. In line with this, it must be the adult, who takes the responsibility for providing nurturance and the right conditions for maturation. This will not only mean that adult arranges for food and shelter, but also conveying that adult is available for the child to depend upon and can handle whatever challenge a child is posing. Conveying to children, that they are too much to handle or that adult's wellbeing, happiness or mood depend on child's actions, is actually putting the child in charge. This will impede the natural hierarchy and in turn lessen adult's ability to care for and guide the child (Neufeld & Maté, 2006).

(c) Attachment is bipolar.

This bipolarity refers to establishing new relationships and nurturing the existing ones. It is crucial to take this into consideration when relating to young children. Firstly, in young children, we will be able to notice seeking proximity with their attachments and resisting the same with persons they are not attached to. This is why we cannot relate to small children out of our social roles. For example, being a teacher will not by itself make a three-year-old willing to follow. Only when a relationship is established and sufficient level of trust is present, can a teacher lead this child. Secondly, understanding polarity of attachment can inform our nurturing of existing relationships, too. In the context of existing relationships, a child needs a constant re-establishing of connection. If we look at feeding, we need to provide regular and nurturing meals at many points in a day. It seems children need providing of nurturance in terms of connection in a similar way. For example, if an adult neglects the need for reconnecting with children on regular basis he/she risks provoking resistance and other kinds of uncompliant behaviour in children (Neufeld, 2012; Neufeld & Maté, 2006).

Possible implications of the Neufeld model of attachment in a preschool setting

Understanding the natural course of development of attachment, shows the direction in which to aim when relating to children. Below are some of the possible implications that might prove valuable in working with young children.

First, when dealing with very young children, the model informs us about their capacity for relating which is limited and will grow with time. For example, one cannot expect from a child to intrinsically want to obey until capable of loyalty (ideally around age three).

Furthermore, no matter the age of a child, if the relationship is new, there will be stages the relationship needs to go through in order to form a deep enough connection. After the initial sense of safety is achieved – the child can be comforted by teacher's presence (tone of voice or touch for example), the teacher might try to deepen the connection by pointing to the things she and a child have in common. For example, she might comment, *Ohh, look we are wearing the same colours today*. At the next stage, the teacher will work on belonging and loyalty (e.g. *Here comes my girl).* This kind of relating will deepen the child's sense of safety and connection as she feels she is welcome and belongs in the teacher's presence. The connection will be further deepened by conveying to the child that she matters, that what she does is important to us. This is not to be confused with praise. The teacher's invitation should not depend on child's achievements or behaviour. If significance is achieved, a child will start to attach emotionally and eventually also seek to be known by her teacher. It is important to note here, that progressing onto new stages means adding a new way of relating to the already established ones not replacing them.

Next, understanding child's level of capacity for relating will inform the teacher about what makes a child vulnerable (at which level the child encounters separation). For the child who is attaching at the level of senses, the separation will be experienced when the child cannot maintain contact (not being with). On the level of sameness, it is not being like one's attachment that causes attachment seeking response. Further, at the level of belonging and loyalty feelings of separation are caused by perceiving not belonging to or not being able to possess. At the stage of significance, the child's feelings will get hurt if he/she does not

feel significant, special or important to the teacher. For the child at the fifth stage not being loved and at the sixth stage not being known are the key stressors in the relationships. Common to all this different faces of experienced separation is the activation of attachment seeking response, which can be very different for individual children and might be expressed in a ways not obviously related to the underlying problem (for more on this see Neufeld, 2012).

Next, understanding the nature of attachment and child's way of attaching can prove helpful in shielding a child from stress experienced in preschool (whatever the reason). The research shows that visiting preschool results in experiencing some degree of stress in children (Bowlby, 2007). This is not exclusive to children entering preschool for the first time. Namely, research shows that preschool children, even after five months or longer into enrolment, exhibit higher cortisol levels in day-care than at home (Drugli et al., 2018; Vermeer, & van Ijzendoorn, 2006). Cortisol, also referred to as a stress hormone, marks stress or emotional response. Higher levels indicate that demands on the person exceed its capacity for coping. Prolonged stress in the early years may have many adverse consequences for development (Drugli et al., 2018; Whitebread, 2012). However, there is some evidence that levels of stress can be depleted in preschool, where safe attachments are established between teachers and children (Bowlby, 2007).

Lastly, in terms of learning, Neufeld (2007) claims that the more ways to attach a teacher has opened with a child the more channels to transfer the knowledge there are present. For example, in very young children, even attaching at the level of sameness should have profound impacts on their learning. They will tend to imitate the teacher: the behaviour and the language.

In conclusion, it is important to address another feature of the model. The model assumes that even children, who did not form deep enough attachments at home, can do so with their preschool teachers if conditions are right. This supports the preventive and reparative role of preschools for disadvantaged children.

Conclusion

Although it is reassuring to notice the increased understanding of the quality of child-teacher relationship in a preschool setting (APA, 2015; Bowlby, 2007; Hoffman et al., 2006; NEYAC, 2009), Page and Elfer (2013) have argued that attachment work, as a key part of early years pedagogy, will most probably not occur easily in an intuitively obvious and natural way. Therefore, the authors point to the importance of developing much more attention to supporting preschool teachers in their development and understanding of all the emotional aspects as they try to facilitate attachment-based pedagogy with young children. The Neufeld model of attachment presented in this paper offers a theoretically sound basis for understanding the attachment development in young children. In addition, possible implications for preschool setting are outlined. The author is of the belief that empowering teachers in terms of understanding the importance and the nature of attachment process outlined by Neufeld can offer some of the solutions to the dilemma Page and Elfer have pointed out. Even though the implications of the model are many and thus helpful in the work of early years' practitioners, further empirical support of the model is needed.

References

American Psychological Association, Coalition for Psychology in Schools and Education. (2015). *Top 20 principles from psychology for preK–12 teaching and learning.* Retrieved from http:// www.apa.org/ed/schools/cpse/top-twenty-principles.pdf

Bowlby, J. (1953). *Child care and the growth of love.* London, United Kingdom: Penguin.

Bowlby, R. (2007). Babies and toddlers in non-parental daycare can avoid stress and anxiety if they develop a lasting secondary attachment bond with one carer who is consistently accessible to them. *Attachment & Human Development*, 9(4), 307-319. doi: 10.1080/14616730701711516

Cugmas, Z. (2009). Children's attachment to their kindergarten teachers. *Horizons of Psychology [Psihološka Obzorja], 18*(1), 8–24.

Cugmas, Z. (2011). Relation between children's attachment to kindergarten teachers, personality characteristics and play activities. *Early Child Development and Care*, *181*(9), 1271–1289. doi: 10.1080/03004430.2010.523993

Gopnik, A. (2016). *The Gardener and the Carpenter: What the new science of child development tells us about the relationship between parents and children*. New York, NY, USA: Farrar, Straus and Giroux.

Hoffman, K. T., Marvin, R. S., Cooper, G., & Powell, B. (2006). Changing toddlers' and preschoolers' attachment classifications: The Circle of Security Intervention. *Journal of Consulting and Clinical Psychology*, 74(6), 1017–1026.

Jun, P. (2018). The importance of play: An interview with Dr. Jaak Panksepp. Retrieved from https://brainworldmagazine.com/the-importance-of-play-an-interview-with-dr-jaak-panksepp/

MacNamara, D. (2016). *Rest, play, grow: Making sense of preschoolers (Or anyone who acts like one)*. Vancouver, Canada: Aona Books.

Drugli, M. B., Solheim, E., Lydersen, S., Moe, V., Smith, L., & Berg-Nielsen, T. S. (2018). Elevated cortisol levels in Norwegian toddlers in childcare. *Early Child Development and Care, 188*(12), 1684–1695. doi: 10.1080/03004430.2016.1278368

National Association for the Education of Young Children. (2009). *Developmentally Appropriate Practice in early childhood programs serving children from birth through age 8: A Position Statement of the National Association for the Education of Young Children*. Retrieved from https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/position-statements/PSDAP.pdf

Neufeld, G. (2007). The teachability factor. Retrieved from https://campus.neufeldinstitute.org/file.php/37/Recording_handouts/TF_PG_handout.pdf

Neufeld, G. (2014). Keys to well-being in children and youth. *Improving the Quality of Childhood in Europe, 5,* 36–57.

Neufeld, G., & Maté, G. (2006). *Hold on to your kids: Why parents need to matter more than peers*. New York, NY, USA: Ballantine Books.

Panksepp, J. & Biven, L. (2012). *The archaeology of mind: Neuroevolutionary origins of human emotions*. New York, NY, USA: W. W. Norton & Company.

Page, J., & Elfer, P. (2013). The emotional complexity of attachment interactions in nursery. *European Early Childhood Education Research Journal, 21*(4), 553–567. doi: 10.1080/1350293X.2013.766032

Roehlkepartain, E. C., Pekel, K., Syvertsen, A. K., Sethi, J., Sullivan, T. K., & Scales, P. C. (2017). *Relationships First: Creating connections that help young people thrive*. Minneapolis, MN, USA: Search Institute. Retrieved from: https://www.search-institute.org/wp-content/uploads/2017/12/2017-Relationships-First-final.pdf

Schuengel, C. (2012). Teacher–child relationships as a developmental issue. *Attachment & Human Development, 14*(3), 329–336. doi: 10.1080/14616734.2012.675639

Vermeer, H. J., & van Ijzendoorn, M. H. (2006). Children's elevated cortisol levels at daycare: A review and meta-analysis. *Early Childhood Research Quarterly, 21*, 390–401.

Whitebread, D. (2012). *Developmental psychology and early childhood education: A guide for students and practitioners*. London, United Kingdom: Sage.

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Establishment of Friendly Relationships with Peers Among Preschool Children

MAJA HMELAK & MATEJA VREČIČ

Abstract Friendship is for all, of the utmost importance and even preschool children are not an exception. Thus, in the theoretical part, the authors define the meaning of friendship for preschool children and the emotional adjustment to the social environment, with particular emphasis on establishing a relationship with peers in social interactions and the role of the educator as an example in this. Attention is also paid to the importance of toys and cartoons in the establishment of peer friendly relationship. In the following, the authors present the results of the research in preschool children. The purpose of the research is to analyse why children choose a particular person as their friend and what they do with their friends. In doing so, the authors monitored the differences in answers depending on the age of preschool children (3, 4, 5 and 6 years). They found that their friendships are mostly based on games, kindness and understanding and that the company of peers also provides them with new insights and challenges.

Keywords: • interactions • preschool child • friendship • social environment • peers •

CORRESPONDENCE ADDRESS: Maja Hmelak, PhD, Associate Professor, University of Maribor, Faculty of Education, Maribor, Slovenia, e-mail: maja.hmelak@gmail.com. Mateja Vrečič, Master of Arts in Pedagogy, PhD Student, University of Maribor, Faculty of Education, Maribor, Slovenia, e-mail: mateja.vrecic91@gmail.com.

DOI https://doi.org/10.18690/978-961-286-269-5.3 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

Preschool children are very perceptive and influenced by many things. First and foremost, these are teachers and peers, with whom they spend much of their time. Just like parents, educators also, raise children and transfer their knowledge and experience to younger ones by their example. With their work, they enable children to learn as much as possible, to raise interest in different things and enable them to learn as many things as possible through the game. Since the game is such an important factor in the kindergarten, the younger children conclude their friendships just on this basis. Older children aged 5 and 6 already consider kindness and socialising outside the kindergarten.

The meaning of friendship for preschool children and emotional adjustment to the social environment

It is hard to say that babies and toddlers know what friendship is, but they use some interactions that are seen as friendship. For example, they take objects from another, show emotions during interaction, and engage in mutual activities. Such friendships are primarily evident in the first two years of a child's life. Children at the age of three or four use the word "friend" which is more representative of the particular and specific behaviour. A friend is a person who helps or they play with (Marjanovič Umek et al., 2001). Friendship is of particular importance for all people. Though, it plays a key role in children, since preschool children already establish contact with others, thus forming friendships. In the preschool period, friends are those they play with and because of whom they go to the kindergarten and later to school with greater joy. The meaning of friendship changes over the years.

For example, toddlers and preschoolers view friendship as 'understanding and sharing the other person's interests and ideas, as well as mutual affection and support' and as children mature the friendship focus shifts to having greater emphasis upon intimacy and loyalty, including having someone to confide in (Carter in Nutbrown, 2016). Some researchers, who have explored this area to the fullest, have divided friendships among children into three developmental stages, where there is no age limit for each level, nor is it necessarily that all children go through all stages of friendship (Marjanovič Umek and Zupančič, 2009).

Table 1: Developmental stages of friendship among children
(Marjanovič Umek and Zupančič, 2009, p. 366)

Developmental stage	Characteristics	Example
1st stage	Friendship is concluded on the basis of material actions, and ends with negative material or physical actions.	He is my friend because he plays with me.
2nd stage	Friendship is created on the basis of mutual help. This creates a relationship that is in reciprocal interest between the two. Also, someone has someone as a friend on the basis of personal characteristics. Friendship ends when someone refuses to help.	A friend is one for whom I would do everything, and he for me.
3rd stage	Friends are those who understand each other, share secrets, and also feel some kind of empathy towards each other. Friendship is a lasting relationship, because they understand one another and have similar interests.	A friend is someone you can talk to and trust him with all.

The authors are not unanimous about these developmental stages of friendship. The article mentions, for example, Flavell (1977), who found that the first stage is typical for children aged three to six years, however children can already outgrow their egocentric thinking before the third year. Gottman (1983) found in his research that the cause of the establishment of a good friendship among children were; communication, sharing information, mutual interests, expressing emotions, conflict solving and positive reciprocity. Gottman (1983) found that there are also more conflicts among children who are friends, but they usually solve them successfully. In friendships and relationships within groups, we can quickly notice which children are more socially competent, as they are more popular and able to control their self and emotions well (Marjanovič Umek and Zupančič, 2009).

High quality friendships have positive effects on children as they promote their self-esteem and improve social adaptations. Those who have a friend with a more positive opinion and more positivequalities, have a higher self-assessment of social acceptability and also have a higher self-esteem. Quality friendship affects changes in the adaption of children. Those children who often get into conflicts with their friends and try to enforce their own right have negative social behaviour which is generalised to other peers (Berndt, 2002).

Relationship with peers in social interactions

Children establish their contact with others very early, but after the age of one and a half, it increases more and more. Children learn from their peers by imitation, but at the same time, they also learn how to attract their attention. Similarly, children between five and six years talk more with their peers, thus easier creating their own social way (Marjanovič Umek and Zupančič, 2009). Children feel the need to connect with others since birth. First, of course, they connect with the mother and the rest of the family members and later with others in their environment. When the child enters the kindergarten, the relationship with his peers begins to develop intensively. Most of the studies, according to M. Marjanovič Umek and M. Zupančič (2009), which took place in the field of children's relationships with peers, were based on games, since it was easier to obtain results. With age, preschool children connect not only in individual or group games, but also in cooperative and associative games. Symbolic games are also important since it indicates the connection and activity in the group, where we can observe what kind of relationships are among children.

Children between the ages of two and three connect in groups with their kindergarten peers in three ways. The first is inclusion – loneliness, which shows the extent to which children behave as part of a group. Those who feel included are more popular and socially active, while children who feel lonely prefer to play away from their kindergarten peers. The other way of connecting is calmness - aggressiveness, where calm children have better relationships with their kindergarten peers than aggressive. The third way is prosociality - egoism, where prosociality indicates the way a child accepts the wishes and needs of other children (Zupančič, 2009).

Peers are important for the social development of children, especially in the preschool period, when the child establishes even more contact with those who are similar to him in terms of his social development. In interacting and playing with them, the child learns how to cede, how to take roles and to adapt (Benkovič, 2011). For groups in kindergartens, it is typical that there is a permanent mutual relationship among them which provides children with security, play and entertainment, trust and care. These relationships are very important, as only this can result in a positive group connection. »A strong group connection is a condition for a better trust among its members and feeling well of an individual in a group« (Valenčić Štembergar and Čotar Konrad, 2015, p. 60). When it comes to group connection, it is very important that every child has at least one friend with whom he likes to play because it enables all of the above mentioned features of interpersonal relationships (Valenčić Štembergar and Čotar Konrad, 2015).

From a year and a half up to three years, children show interest in what others do. This is mainly shown by the way they share toys or play together. Toddlers learn the most if they imitate each other, therefore one of the "criteria" is also what they do with their friends. Through games, older children learn new things, gain experience and learn to solve conflicts, but, of course, they are more often involved in a game with those with whom they go better along and regard them as friends (Papalia et al. 2003; p. 198-199).

Otherwise, when a child does not find friends, a problem arises. The child feels neglected, lonely and above all sad. Such things quickly push the child into frustration because the child has no motivation to go to kindergarten with pleasure, to play with somebody and to explore something. Children are forced to play alone. However, it is important to emphasise that every child playing alone does not mean that he does not have friends or that he is lonely.

Interaction with educators as an example of establishing relationships with peers

In the preschool age, interactions are important for children. These are learned or observed in adults. Children need as many positive interactions as possible, which can be a smile, a greeting, a hug, and talking at the eye level. It is also important to respond to a child's questions, encourage children to share their

experiences and ideas, and listen carefully to them. By doing so, children learn how to behave towards their friends (Curriculum for kindergartens, 2016). Social interactions have a significant impact on the child, as well as his interaction with educators. There are frontal interactions, where the central factor is the educator who determines what will be the topic of the conversation. In the informal form of interaction, the educator does not have a role as this happens among children (Valenčić Štembergar and Čotar Konrad, 2015).

In combined groups, composed of children of different ages, they can learn a lot from each other. The benefits of combined groups are reflected in the fact that older children learn tolerance and caring for younger children, while younger children have an older role model and with their help, they gain different experiences more quickly. There are significantly fewer conflicts and more mutual assistance in such groups, so younger children depend less on educators. Some authors state that combined groups may have therapeutic effects, since different ages affect the socialisation of the younger ones, it is easier to make friends and those who have lower self-confidence or are at a lower stage of development, feel less exposed and feel better in combined groups than in homogeneous ones, where any deviation from others can be immediately noticed (Valenčić Štembergar in Čotar Konrad, 2015).

The role and importance of cartoons for the development of friendships among preschool children

The onset or development of friendship in preschool children is often influenced by the choice or possession of toys about which children very often learn by watching cartoons or even commercials during cartoons. » The interest in television starts at the age of 4 or 5 months. They respond to movement and colour on the screen and to certain sounds. When they start to crawl, they crawl towards the television « (Peštaj, 2010, p. 70). Because it is almost impossible to avoid the media, there is a new trend that includes more and more programs for babies and toddlers. These programs are designed so that the child does not notice only sounds, games and colours, but also various toys (Peštaj, 2010). In their mutual interactions, children most often talk just about these toys and cartoon heroes which they later find in stores in the form of toys. This is a common theme which attracts them equally and, on the basis of this, they start

and maintain their socialising, which consequently develop into a friendly relationship.

Many parents, especially employed ones, feel comfortable if they can let their children watch cartoons for at least a short time, as they can end their tasks and relax themselves a bit. Because of this, children become addicted to cartoons, without which they can no longer do any work. That is why parents often start bribing children so that they dedicate themselves to something else than cartoons. Most people think that cartoons are fun and harmless, but children eventually begin to act like the main characters. This leads to disobedience and bothering. Many parents believe that a two-year-old does not imitate adults, but children start practicing rather quickly what they see. Both psychologists and doctors blame cartoons for children's psychological depressions and other psychological problems (Sultana, 2014). Namely, the media have a particular power over children, who are very active users of television. Programmes for toddlers have a significant impact on their perception of social categories in interconnection with others. However, the child's exposure to these media is more important than the content of programs (Peštaj, 2010).

Cartoons have assumed a major role in both children and their parents. Due to the gentleness, fun and attraction of the cartoon characters, the cartoons are getting closer to all viewers. Most people consider cartoons appropriate, educational and suitable for the context of children of all ages. Many do not understand that cartoons contain inappropriate content, and precisely because of these hidden effects that cartoon contain, they may pose a danger to life. In his article, the author noted that almost all adults love cartoons and consider them harmless to their children because they are instructive and do not leave any injuries on children. Since cartoons play a major role in the mental health of children, it is important that parents check what kind of cartoons their children watch (Sultana, 2014).

Cartoons do not only affect the choice of toys, but they largely affect social behaviour and emotion in preschool children, which is then reflected primarily in mutual relations, even in relations with peers. It is the social behaviour of a child that, as interpreted by Oyero and Oyesomi (2014), describes the general behaviour of individuals in society. Toddlers and preschool children systematically learn from television and human interactions. Everything that

children watch affects their way of communicating with peers and general knowledge.

Since on-screen technology and cartoons have consequences for the development of the brain, this is also reflected in the emotional field. Only a few minutes of television daily affects the intellectual functions of the frontal part of the brain. The child's abilities to act include both the attention of social and cognitive functioning as well as subsequent success at school (Sigman, 2013).

Purpose

In this study, we wanted to research:

- how preschool children define friendship,
- what friendship means to them,
- what/who influences the choice of friends.

Methodology

In the study we used a descriptive and causal-non-experimental method of pedagogical research.

The research sample included preschool children aged 3 to 5. The research was conducted in four kindergartens in north-eastern Slovenia (kindergarten A with branch unit and kindergarten B with branch unit). The sample was not random since we set the age limit in advance and sought the population according to this condition.

Table 2: Percentage of number of children by gender and by age group

	Age							
Gender	3 years		4 years		5 years		6 years	
	f	f %	f	f %	f	f %	f	f %
Girls	27	9,9	39	14,3	36	13,2	37	13,6
Boys	24	8,8	26	9,5	35	12,8	48	17,5
Total	51	18,7	65	23,8	71	26,1	85	31,1

From the table we can see how many boys and girls participated and of what age. Since the largest number of participants was in the group of six-year-olds, the percentage of all participants was 31.1%. Among all the groups, the boys in this group stand out and their percentage is 17,5 %. The least boys were in the youngest group, which is 8,8 %. Most girls were in the group of four-year-olds which is 14,3 % and the least in the group of three-year-olds 9,9 %. The total number of children participating in the research was 272.

Data was collected using the qualitative technique, where we used a guided interview. In this context, we asked questions about who the child's friend is, what they do with them, and who influences their choice of friends. In doing so, we determined what they give priority to or what is key to choosing friends.

Qualitative techniques were used to process the data, using transcription.

Results and interpretation

Below, we present the findings of the study.

Reasons for choosing a friend

Table 4: Reasons for choosing a friend

Age	Why is he/she your friend?
3 years	– if someone treats us well, we have a new friend, – because we play and draw together,
4 years	– because we spend time with him, – since he is kind to us, he is our friend, – because he is from the same parts, – because we sit together, – because we were friends before, – because we help each other, – because they play together,
5 years	– he is my best friend because we always play together in the kindergarten and at home, – because he is the best, – because I love him, – because he is nice, – because we play together,
6 years	– I am her boyfriend and therefore her best friend, – because he does not bother me or speak ugly, – because we play together, – because we share things, – because we spend time with him, talk and play, – because they understand each other.

The table shows the grounds on which children choose their friends. 3-year-old children choose friends on the basis of how they treat them or if they play and draw together. 4-year-old children choose their friends based on friendliness, place they live, or whether they are friends from before and based on games. 5-year-olds, as well as all the older children, choose their friends based on games, kindness and because they love each other.6 year old children already look at friendship differently, and choose their friends on the basis of attraction (if a boy and a girl are "in love"), if that person does not bother him or her, they play together and because they understand each other or they are friends from before based on family connections.

Common activities with friends

Table 3: What children do with their friends

Age	What do you do with your friends?
3 years	– we play, – we draw, dance, – we sit together at breakfast and lunch, – we hold hands when we go for a walk, – we swing together, – we browse books, – we cook together in the kitchen (a play), – we eat together,
4 years	– we play together, – we sleep at friends', – we draw and dance, – we sit together, hold hands when we go for a walk, – we swing, – we colour and browse books together, – we talk together with friends, – we stay close,
5 years	– we hug, – we colour and play like in cartoons, – we are good together, we do not argue, – us girls like to draw together, – we go out together, we are nice to them, – we assemble bricks, – we have breakfast and lunch together, – we swing, go for a walk, – we talk to friends, – watch cartoons,
6 years	– we do not fight, – we help each other, – us girls draw with our girlfriends, – we sit together, – we are in a pair when dancing, – we hold our hands and go out for a walk, – we are nice to each other, – we share things and comfort each other, – we take care of them and keep them safe, – we lend toys to each other, – we do not argue, – we love each other, – we visit each other.

The table shows what children do with their friends. 3 and 4 years old children point out that they play with their friends, dance, draw, sit together during meals, and browse books. 4-year- olds also point out that they sleep over at their friends' and that they stay close. Furthermore, 5 and 6 year olds already look at friends a little differently. To the above mentioned things, they add that they do not beat their friends, they are friendly to each other and they talk to one another. 6 year olds also add that they love one another and they visit each other and care for and comfort their friends.

We can conclude that it is important to children how someone behaves towards them. In all groups, they stated that they play with their friends, draw, go for walks, sit together during meals, and swing. Each group has different reasons for choosing the best friend. To the youngest, it is important that someone treats them nicely and the older, besides kindness, find very important if someone is willing to help them. To the oldest, to a large extent, a friend is someone with whom they understand each other, with whom they talk and share things.

Here we can see how the first impressions differ in children even with regard to their age. We have found that three-year-olds consider only the person's character or that they are kind to them, while the older ones take also the personality and the temperament of others into account.

A similar survey was conducted as part of the thesis, where Šuler, J. (2017) came to similar conclusions. In her work, she found that friendship is best shown in the game and free game. Friendship is also often shown in during walks and grouping. A smaller expression of friendship is manifested during eating, resting and tiding up.

Conclusion

In general, we can conclude that the children choose friends according to various factors, but in any case, the consistency of our research with the existing theoretical assumptions is shown, where we found that one of the main reasons for making a friendship is primarily, as emphasised by k L. Marjanovič Umek et al. (2001), receiving and playing with objects or toys of others, showing emotions during interaction, and often engaging in reciprocal activities.

For children, peers provide new insights, challenges and friendships. They mostly make friendships based on games, kindness and understanding. In all this, the role of the educator and the assistant educator is also important, who are important persons in a child's life as they are not only an example, but they also teach children and help them to develop and strengthen their competences in the field of socio-emotional development. Since objects and toys also have an impact on making friendships, the issue of the importance of the influence of the media opens up. Media from children's lives cannot be erased, but adults need to be careful and limit the time they spend in front of TV and the content they watch. Finally, we also need to show the children that when they spend too much time watching television, they lose the time for establishing and maintaining genuine peer relationships. But having a peers or peers is important for social and emotional development of a preschool child.

References

Benkovič, B. (2011). Socialni in čustveni razvoj predšolskega otroka (Social and emotional development of pre-school children), V M. I. Željeznov Seničar (ed.), *Socialni in čustveni razvoj predšolskega otroka* (p. 7–13). Ljubljana: MiB.

Berndt, T.J. (2002). Friendship Quality and Social Development. *American Psychological Societa, 11* (1), 7–10.

Carter, C. in Nutbrown, C. (2016) A Pedagogy of Friendship: young children's friendships and how schools can support them. *International Journal of Early Years Education*. pp. 1-19.

Kurikulum za vrtce (Preschool curriculum) (2016). Ljubljana: Ministrstvo za izobraževanje, znanost in šport: Zavod Republike Slovenije za šolstvo.

Marjanovič Umek in Zupančič (2009), Socialni in moralni razvoj v zgodnjem otroštvu (Social and moral development in early childhood), L. Marjanovič Umek (ed.), *Razvojna psihologija* (p. 363-381). Ljubljana: Znanstvenoraziskovalni inštitut Filozofske fakultete.

Marjanovič Umek L. idr. (2001). *Otrok v vrtcu: priročnik h kurikulumu za vrtce* (Child in kindergarten: a manual for the kindergarten curriculum). Maribor: Obzorja.

Oyero O.S in Oyesomi K. O. (2014). Perceived influence of Television cartoons on Nigerian children's social behaviour. *EHN Community Jounal, 1 (1)*, 93–116.

Papalia, D. E.; Olds W. S.; Feldman, D. R. (2003). *Otrokov svet: Otrokov razvoj od spočetja do konca mladostništva* (Children's World: Children's development from conception to the end of adolescence). Ljubljana: Obzorja

Peštaj, M. (2010), Otrokovo razumevanje televizijskih oddaj (A child's understanding of television shows). *Psihološka obzorja 19* (4), 67-80.

Sigman, A. (2013). *Vpliv zaslonske tehnologije na otroke* (The impact of online technology on children). Retreived 16. 6. 2016 from www.svitanje.si/2013/01/vpliv-zaslonske-tehnologije-na-otroke

Sultana, S. (2014). Role of cartoon: a brief discussion on how cartoons put an impact on children. *EHN Community Journal, 1* (1). Retreived 10. 11. 2015 from http://www.academia.edu/9005971/ROLE_OF_CARTOON_A_BRIEF_DISCUSSION_ON_HOW_CARTOON_PUT_AN_IMPACT_ON_CHILDREN

Šuler, J. (2017). *Pomen in razvoj prijateljstva pri predšolskih otrocih* (The importance and development of friendship in pre-school children). Diplomsko delo: Univerza v Mariboru, Pedagoška fakulteta.

Valenčić Štembergar, A. in Čotar Konrad, S. (2015). Medsebojna povezanost otrok v starostno homogeni in starostno kombiniranih skupinah (Interconnectedness of children in age homogeneous and age-combined groups). *Revija za elementarno izobraževanje 8* (3), 59–72.

Zupančič, M. (2009). Socialni razvoj dojenčka in malčka (Social development of infants and toddlers). V L. Marjanovič Umek (ed.), *Razvojna psihologija* (p. 255–277). Ljubljana: Znanstvenoraziskovalni inštitut Filozofske fakultete.

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION
AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Differences in Practices for Social-Emotional Learning Among Preschool Teachers Who Work in Age Groups 3 to 6 Years

MARTA LICARDO & METKA PURGAJ

Abstract Social-emotional learning is recognised as important domain of learning because it includes processes by which children understand and manage emotions, learn skills to communicate with others and develop positive relationships. Benefits of social-emotional learning are immediate as well as long term. The purpose of the study was to determine which good practices of social-emotional learning are implemented most often by preschool teachers who work in groups 3 to 6 years old children and what are the differences among preschool teachers' practices regarding age and education level. Results indicate that practices which needs to be prepared in advance and carefully planned are not used so often as practices which are part of daily routine and interactions. Senior preschool teachers (above age 45) use certain practices more often than other age groups. Teachers with higher professional education use practices for social-emotional learning more often that teachers with upper-secondary education or master degree. Results are interesting for planning and implementing social-emotional learning and for professional development of preschool teachers.

Keywords: • Social-emotional learning • preschool teachers • practices • preschool education • methods •

CORRESPONDENCE ADDRESS: Marta Licardo, PhD, Assistant Professor, University of Maribor, Faculty of Education, Maribor, Slovenia, e-mail: marta.licardo@um.si. Metka Purgaj, Jakobski dol, Slovenia, e-mail: metka.purgaj@gmail.com.

DOI https://doi.org/10.18690/978-961-286-269-5.4 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

Social-emotional learning (SEL) includes processes by which children learn and apply knowledge, attitudes, skills to perceive, understand and manage emotions, skills to effectively communicate with others, to develop and maintain positive relationships, to feel and show empathy for others and to make responsible decisions (Schonert-Reichl, 2017).

The benefits of SEL are immediate, as children get along well with peers, more actively engage in learning, are more likely to have higher level of wellbeing, more positive life outcomes etc. in comparison with children with poor social-emotional skills (Goodman et al., 2015). Research results also indicate strong links between the development level of social-emotional competences in early years and long term effect as school readiness, educational achievement and development of cognitive skills (Durlak et al., 2011; Elias et al., 1997). On the other hand, children with insufficient social-emotional skills often present with school readiness issues, including lower achievement and problems with peer relations and behaviour, resiliency and mental health (Eaton et al., 2008).

Practices of SEL in early childhood are based on relationships with important adults (parents, preschool teachers, other relatives) and peers. Preschool teachers are defined as persons who influence children in their life the most after their parents and relatives, so teachers' educational practices and relationships are very important (Pianta, 1999). Research shows that the teacher-child relationships and practices influence social-emotional development, relationships with peers, academic success and the status within the classes in school (Baker, 2006; Curby et al., 2009). The interactions and teachers' practices set the stage for successful learning in kindergarten and later in school as preschool teachers can contribute to social-emotional learning by providing emotionally and socially supportive classrooms with awareness of children needs and appropriate learning objectives in particular developmental period (Pianta, 1999; Zins, Elias & Greenberg, 2007; Hamre and Pianta, 2007). It is also important that preschool teachers are consistent in relationships with children and in use of practices for SEL (Curby et al., 2010; Curby et al., 2013)

In this study we've analysed differences in use of particular practices and methods for SEL which are based on curriculum (Kurikulum, 1999) and developmental milestones for social-emotional development in period of 3 to 6 years (IELP, 2015; Ivić et al., 2002; Petty, 2016; Scott, 2004), as perceived by preschool teachers. Our research questions are: a) Which practices and methods for SEL are used most often in period of 3 to 6 years old children? b) Are there any differences in use of practices by age and education level of preschool children? With the analysis we wanted to examine differences and consistency in use of practices of SEL by these independent variables and to propose possible interventions in professional development of preschool teachers regarding competences in SEL.

Method

Participants

The participants in the study are preschool teachers and preschool assistants (n = 121) from various regions from Slovenia. Regarding job position, 65.3% are preschool teachers, 34.7% are preschool assistants. Regarding age, 14.9% are 24 – 29 years old, 14.0% are 30 – 35; 17.4% are 36 – 40, 18.2% are 41 – 50, 13.2% are 46 – 50 and 19.8% are 51 or more years old. Education level of participants: 1.7% of preschool teachers have elementary education, 28.1% have upper secondary school, 52.1% have higher professional education, 15.7% have master degree in education and 2.4% have scientific master degree or more. Regarding years of work experience, 16.5% have 0 to 5 years of work experience, 22.3% have 6 to 10 years, 15.7% have 11 to 15 years, 15.7% have 16 to 20 years, 8.3% have 21 to 25 years and 21.5 have 26 or more years of work experience.

Instrument

The instrument was developed for the purpose of the study, which includes different variables (e.g. support of the environment, teachers' practices for SEL in groups 1 to 3 and 3 to 6 years old children, developmental milestones etc.) Data presented in this paper are just one part of the study and only one segment of analysis is presented. The questionnaire was pilot-tested on a smaller sample of preschool teachers in two kindergartens. After pilot testing some suggestions for improvements in terms of the clarity and length of the instrument were

included and the final version of the instrument was prepared as an e-version and paper version.

Data collection and anallysis

Data collection was completed using the e-version of the instrument with the collaboration of the research team and in collaboration with kindergartens that participated in the study. The data collection was anonymous. The whole data collection process was carried out during March and April 2017. In the analysis we present descriptive statistics related to use of good practices for SEL and differences in use of SEL regarding age and education level. To analyse the differences by age Kruskal-Wallis test was used, because criteria for ANOVA were not met. To analyse differences by education level one-way ANOVA was used.

Results

In the results we present differences among preschool teachers' practices for SEL regarding independent variables: age and education level. In the tables are presented only the results for differences by age, results for differences by education level are presented in description because of space limitation of the paper. Detailed results are available also in the study of Purgaj (Purgaj, 2018).

Most often used practices for SEL by preschool teachers

Table 1: Descriptive statistics for use of practices and methods for SEL

P**ractices for SEL**	**M**	**SD**
I include children in group responsibilities, rules, routines and procedures.	4,62	0,61
I encourage and nurture friendly relationships among peers.	4,62	0,63
I support children in resolving conflicts and teach them various methods (e.g. assertive communication).	4,36	0,68
I teach children how to recognise situations, feelings and emotions in conflicts and enable appropriate expression of emotions and opinions.	4,28	0,68
I discuss with children about values, which are important for development of social and emotional skills (e.g. care for others, cooperation, courage, justice, honesty, respect, responsibility).	4,25	0,74
In group activities I include children in planning, reflection, mutual support and problem solving.	4,20	0,76
I talk with children about their names, families, place and time of birth.	4,16	0,72
I create opportunities for children to choose peers which they usually don't choose for play.	4,15	0,72
I encourage and support expected behaviour, emotional and behavioural self-regulation.	4,15	0,76
I show children various social situations and encourage them to interact in those situations on their own.	4,10	0,88
I discuss with children about their identity, individuality and various roles at home and in kindergarten.	3,92	0,63
I enable drama play, role play and symbolic play where children can invigorate in gender roles and emotions of others.	3,78	0,93
I discuss with children about differences among people, cultures, ethnical groups and other kind of differences among people.	3,72	0,75
I read stories to children about characters which model strategies of self-regulation.	3,62	0,83
In group we observe differences among people with use of literature and visual material.	3,60	0,80
With children we measure their height, weight and talk about other individual characteristics (colour of eyes, skin, hair).	3,49	0,90
I discuss with children about gender roles, sex, I use appropriate names for sex organs and I explain differences among girls and boys.	3,15	1,00

Results indicate that preschool teachers most often include children in group routines, rules, responsibilities and procedures (M = 4,62; SD = 0,61), they encourage and nurture friendly relationships among peers (M = 4,62; SD = 0,63) and they support children in resolving conflicts and teach them various methods how to resolve conflicts (M = 4,36; SD = 0,68). Less often they enable drama play, role play and symbolic play where children can invigorate in gender roles and emotions of others (M = 3,78; SD = 0,93) and less often they discuss with children about differences among people, cultures, ethnical groups and other kind of differences among people (M = 3,72; SD = 0,75). Least often preschool teachers use methods which support development of healthy self-esteem and acceptance of self and others like discussions with children about differences among people, cultures, ethnical groups (M = 3.72; SD = 0.75), observations of differences among people with use of literature and visual material (M = 3,60; SD = 0,80), discussions about children's height, weight, colour of eyes, skin or hair (M = 3,49; SD = 0,90) and discussions with children about gender roles, differences among girls and boys and sexual education (M = 3,15; SD = 1,00).

Although assessed good practices for SEL in this study are limited, we may conclude that preschool teachers in groups of 3 to 6 years old children more often use practices which are part of everyday routine and interactions, e.g. including children in routines, rules, procedures and responsibilities or encourage and nurture friendly relationships among peers. Practices which needs to be prepared in advance and carefully planned are not used so often, however they are important for development of self-esteem and acceptance of self and others (e.g. discussions and observations with children about differences among people, cultures, ethnical groups and other kind of differences among people, discussions with children about gender roles, differences among girls and boys and sexual education).

Differences among preschool teachers' practices for SEL regarding age

Table 2: Analysis of differences among preschool teachers practices for SEL by age

Practices for SEL	Teachers' age	N	$\overline{R}$	X^2	P
I include children in group responsibilities, rules, routines and procedures.	24–29	17	59,91	4,53	0,48
	30–35	23	63,30		
	36–40	21	54,86		
	41–45	22	70,68		
	46–50	16	71,16		
	51 years and more	28	64,57		
I encourage and nurture friendly relationships among peers.	24–29	17	60,53	5,68	0,34
	30–35	23	58,72		
	36–40	21	59,26		
	41–45	22	62,23		
	46–50	16	64,25		
	51 years and more	28	75,25		
I support children in resolving conflicts and teach them various methods (e.g. assertive communication).	24–29	17	52,91	4,96	0,42
	30–35	23	60,24		
	36–40	21	60,10		
	41–45	22	65,34		
	46–50	16	68,66		
	51 years and more	28	73,04		
I teach children how to recognize situations, feelings and emotions in conflicts and enable appropriate expression of emotions and opinions.	24–29	17	66,47	5,92	0,31
	30–35	23	51,76		
	36–40	21	62,24		
	41–45	22	67,52		
	46–50	16	76,59		
	51 years and more	28	63,91		

I discuss with children about values, which are important for development of social and emotional skills (e.g. care for others, cooperation, courage, justice, honesty, respect, responsibility).	24–29	17	60,41	3,04	0,69
	30–35	23	59,37		
	36–40	21	66,36		
	41–45	22	61,32		
	46–50	16	76,34		
	51 years and more	28	63,27		
In group activities I include children in planning, reflection, mutual support and problem solving.	24–29	17	72,00	11,68	0,04
	30–35	23	43,48		
	36–40	21	66,29		
	41–45	22	70,18		
	46–50	16	75,50		
	51 years and more	28	62,86		
I talk with children about their names, families, place and time of birth.	24–29	17	67,47	3,66	0,60
	30–35	23	57,07		
	36–40	21	60,38		
	41–45	22	62,18		
	46–50	16	75,53		
	51 years and more	28	65,14		
I create opportunities for children to choose peers which they usually don't choose for play.	24–29	17	66,26	6,85	0,23
	30–35	23	48,96		
	36–40	21	69,21		
	41–45	22	70,59		
	46–50	16	70,75		
	51 years and more	28	62,04		
I encourage and support expected behaviour, emotional and behavioural self-regulation.	24–29	17	53,82	6,31	0,28
	30–35	23	57,85		
	36–40	21	69,79		
	41–45	22	59,09		
	46–50	16	77,69		

	51 years and more	28	66,93		
I show children various social situations and encourage them to interact in those situations on their own.	24–29	17	64,47	13,46	0,02
	30–35	23	44,17		
	36–40	21	74,81		
	41–45	22	60,05		
	46–50	16	80,44		
	51 years and more	28	65,61		
I discuss with children about their identity, individuality and various roles at home and in kindergarten.	24–29	17	65,24	15,78	0,01
	30–35	23	50,57		
	36–40	21	68,76		
	41–45	22	61,23		
	46–50	16	89,63		
	51 years and more	28	58,25		
I enable drama play, role play and symbolic play where children can invigorate in gender roles and emotions of others.	24–29	17	79,41	10,11	0,07
	30–35	23	68,13		
	36–40	21	47,86		
	41–45	22	56,64		
	46–50	16	62,75		
	51 years and more	28	69,86		
I discuss with children about differences among people, cultures, ethnical groups and other kind of differences among people.	24–29	17	61,68	13,32	0,02
	30–35	23	47,00		
	36–40	21	69,67		
	41–45	22	60,66		
	46–50	16	85,88		
	51 years and more	28	65,25		
I read stories to children about characters which model strategies of self-regulation.	24–29	17	65,18	6,02	0,30
	30–35	23	52,02		
	36–40	21	61,33		
	41–45	22	60,82		

	46–50	16	70,91		
	51 years and more	28	73,68		
In group we observe differences among people with use of literature and visual material.	24–29	17	70,18	9,25	0,01
	30–35	23	46,52		
	36–40	21	59,57		
	41–45	22	71,36		
	46–50	16	66,31		
	51 years and more	28	70,82		
With children we measure their height, weight and talk about other individual characteristics (colour of eyes, skin, hair).	24–29	17	4,61	0,46	4,61
	30–35	23	51,96		
	36–40	21	65,52		
	41–45	22	71,18		
	46–50	16	71,13		
	51 years and more	28	65,50		
I discuss with children about gender roles, sex, I use appropriate names for sex organs and I explain differences among girls and boys.	24–29	17	59,79	3,19	0,67
	30–35	23	54,11		
	36–40	21	69,45		
	41–45	22	63,93		
	46–50	16	68,13		
	51 years and more	28	68,29		

Regarding differences in use of practices for SEL by age of preschool teachers, results show that some practices increases by age in a linear way. Older preschool teachers use three practices more often than younger preschool teachers, e.g. including children in group routines, rules, responsibilities, nurturing of friendly relationships and supporting children in resolving conflicts, although differences are not statistically significant.

For all other variables results show that practices do not increase by age linearly. Statistically significant differences are five practices/methods. First is including children in planning, reflection, mutual support and problem solving in groups activities (x^2 *(5) = 11.68; p = 0.04*), most often these practices are used in

teachers' age group 46 to 50 years and least often in age group 30 to 35 years. Second is showing children various social situations and encourage them to interact in those situations on their own (x^2 *(5) = 13.45; p = 0.02*). These practices are most often used in the age group 46 to 50 and again least often in age group 30 to 35. Third are discussions with children about their identity, individuality and various roles at home and in kindergarten (x^2 *(5) = 15.78; p = 0.01*), again these practices are most often used in age group 46 to 50 and again least often in age group 30 to 35, quite less these practices are also used in age group 51 and more years. Fourth are discussions with children about differences among people, cultures, ethnical groups and other kind of differences among people (x^2 *(5) = 13.31; p = 0.02*). These practices are most often used in age group 46 to 50 and least often in age group 30 to 35. Fifth are group observations about differences among people with use of literature and visual material (x^2 *(5) = 9.25; p = 0.01*), most often this method is used by teachers in age group 41 to 45 and least often in age group 30 to 35 years.

Regarding differences in use of practices we can conclude that in age group 46 to 50 years, which are usually senior preschool teachers, most often teachers use appropriate practices for SEL, including those where they need to carefully plan activities, discussions and educational process. However, results in general are quite dispersed and we cannot conclude, that this age group shows better results in all practices for SEL.

Differences among preschool teachers' practices regarding education level

In Slovenia professionals who work in preschool education settings can work as preschool teachers' assistants with professional upper secondary education, those who work as preschool teachers mostly have professional higher education degree and some of them have master degree. Participants in this study have all mentioned degrees, one third (n = 34) have upper secondary education, more than two thirds (n = 63) have professional higher education and one fifth (n = 21) have master degree, which is usually not master degree of early childhood education, but some other pedagogical master degree.

Results of ANOVA indicate some differences among preschool teachers in use of practices for SEL regarding education level. Differences occur in discussions with children about their names, families, place and time of birth ($F = 3.26$; $p = 0.04$; $\eta 2 = 0.22$). Preschool teachers with upper secondary education use this method more often (M = 4.28; SD = 0.58) than teachers with other education levels. Least often it is used by teachers with master degree (M = 3.80; SD = 0.77). Statistically significant differences are also in support of expected behaviour, emotional and behavioural self-regulation ($F = 3.91$; $p = 0.02$; $\eta 2 = 0.25$). Most often this practices are used by preschool teachers with professional higher education degree (M = 4.32; SD = 0.65) and least often by those with master degree (M = 3.85; SD = 0.93). Similarly, differences occur in encouraging and nurturing friendly relationships among peers ($F = 3.10$; $p = 0.05$; $\eta 2 = 0.22$), most often this practice is used by preschool teachers with upper secondary education (M = 4.69; SD = 0.47) and with professional higher education (M = 4.67; SD = 0.56) and least often by those with master degree (M = 3.50; SD = 0.76). Another practice where differences are significant is how often teachers create opportunities for children to choose peers which they usually don't choose for play ($F = 5.67$; $p = 0.00$; $\eta 2 = 0.30$). Most often this practice is used by teachers with professional higher education (M = 4.28; SD = 0.66) and least often by teacher with master degree (M = 3.70; SD = 0.73). In all statistically significant results we can see that size effect is very high.

The results of ANOVA also indicate some tendencies and great effect sizes in differences regarding education level. Tendencies of differences are in how often preschool teachers include children in group responsibilities, rules, routines and procedures (this is the most often used method on the list) ($F = 2.67$; $p = 0.07$; $\eta 2 = 0.20$). Preschool teachers with professional higher education use this practice most often (M = 4.74; SD = 0.47). Tendency toward differences is also in discussions with children about values, which are important for development of social and emotional skills (e.g. care for others, cooperation, courage, justice, honesty, respect, responsibility) ($F= 2.67$; $p = 0.07$; $\eta 2 = 0.20$), again most often this method is used by preschool teachers with professional higher education (M = 4.32; SD = 0.72) and least often by those with upper secondary education (M = 3.97; SD = 0.74). Similarly, differences occur also in how often preschool teachers enable drama play, role play and symbolic play where children can invigorate in gender roles and emotions of others ($F= 2.41$; $p = 0.09$; $\eta 2 = 0.20$). Most often this method is used by teachers with professional higher education

(M = 4.32; SD = 0.72) and least often by teachers with upper secondary education (M = 3.53; SD = 0.98).

In general, we can conclude that preschool teachers with professional higher education level most often report that they use good practices and methods of SEL and teachers with master level education least often report the use of these practices. What could be the underlying reasons for this seemingly surprising result is explained in discussion chapter.

Discussion

Although results for assessed good practices for SEL in this study are limited, we may conclude that preschool teachers in groups of 3 to 6 years old children in our sample more often use practices which are part of everyday routine and interactions, e.g. including children in routines, rules, procedures and responsibilities or encourage and nurture friendly relationships among peers. Practices which need to be prepared in advance and carefully planned are not used so often, despite they are very important for development of self-esteem and acceptance of self and others. Therefore, preschool teachers should focus more on planning practices or use of methods which would encourage discussions with children about other people, self, relationships between self and others, various roles and differences in social environment. Such activities also imply preschool teachers should have good background in knowledge of social sciences, child psychology, how to communicate abstract themes with children in appropriate way, how to present themes which are hard to understand and how well they developed their own social-emotional skills. For example, McClelland et al. (2017) suggests that; most successful strategies include training of preschool teachers in professional development, building teachers' own social-emotional skills, direct instruction and practice of targeted skills into daily activities which should grow more complex over time and also engage children's families, so that children have a chance to work on their SEL both at kindergarten and at home.

Regarding age of preschool teachers, results in general are quite dispersed and we cannot conclude, that some specific age group shows better results in all practices for SEL. However, preschool teachers in age group 46 to 50 years report they use some practices and methods more often than other groups including those

where they need to carefully plan activities, discussions and educational process, (e.g. including children in planning, reflection, mutual support and problem solving in groups activities, showing children various social situations and encourage them to interact in those situations on their own, discussions with children about their identity, individuality and various roles at home and in kindergarten, discussions with children about differences among people, cultures, ethnical groups and other kind of differences among people). Results indicate that senior preschool teachers above age 45, with usually more than 20 years of work experience, use SEL more often, but we cannot conclude that age group is indicator for good SEL in the group. It is more likely that individual personality differences, skills, individual knowledge and awareness regarding SEL among preschool teachers are the ones which could be correlated to use of SEL (Schonert-Reichl, 2017). However, more research should be done to analyse these correlations.

In results regarding differences by education level in use of practices and methods for SEL we can conclude that preschool teachers with higher professional education report use of practices for SEL more often than other two groups (preschool teachers with upper secondary education and with master degree). Interestingly is that in eleven of seventeen assessed practices and methods the lowest mean values have preschool teachers with master degree. Unfortunately, we don't have the data which pedagogical master degrees they have, but we presume that they mostly didn't study preschool education but some other pedagogical courses. The results indicate that preschool teachers with professional higher education degree could be the best in use of SEL in our sample, therefore, results indicate the importance of education of preschool teachers and that we should promote appropriate education of preschool teachers on the level of study programmes and legislation related to employment.

References

Baker, J. A. (2006). Contributions of teacher-child relationships to positive school adjustment during elementary school. *Journal of School Psychology, 44*(3), 211-229.

Curby, T. W., Brock, L. and Hamre, B. (2013). Teachers emotional support consistency predicts children's achievement gains and social skills. *Early Education and Development, 24*, 292-309.

Curby, T. W., Grimm, K. J. and Pianta, R. C. (2010). Stability and change in early childhood classroom interactions during the first two hours of a day. *Early childhood research quarterly, 25*, 373-384.

Curby, T. W., Rimm-Kaufamn, S. E. and Ponitz, C. C. (2009). Teacher-child interactions and children achievement trajectories across kindergarten and first grade. *Journal of Educational Psychology, 101*(4), 912-925.

Durlak, J. A., Weiessber, R. P., Schellinger, K. B., Dymnicki, A. B. and Taylor, R. D. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school based universal interventions. *Child development, 81* (1), 405-432.

Eaton; D. K., Kann, L., Kinchen, S., Shanklin, S., Ross, J., Hawkins, J. (2008). Youth risk behaviour surveillance US. Retrieved from https://www.cdc.gov/healthyyouth/data/yrbs/index.htm

Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T. and Haynes, N. M. (1997). *Promoting social and emotional learning: Guidelines for educators*. Alexandria, Vancouver: Association for supervision and curriculum development.

Goodman, A., Joshi, H., Nasim, B. and Tyler, C (2015). *Social and emotional skills in childhood and their long-term effects on adult life.* Retrieved from https://www.eif.org.uk/download.php?file=files/pdf/social-and-emotional-skills-in-childhood-and-their-long-term-effects-on-adult-life.pdf

Hamre, B. K. and Pianta, R. C. (2007). Learning opportunities in preschool and early elementary classrooms. In R. C. Pianta, M. J. Cox and K. Snow (Eds.), *School readiness and the transition to kindergarten* (pp. 49-84). Baltimore: Brookes.

IELP – Illinois Early Learning Project (2015). *Illinois early learning guidelines for children birth to age three. Standards, age descriptors, indicators for children, and strategies for interaction,* 2015. Illinois: University of Illinois at Urbana-Champaign.

Ivić, I., Novak, J., Atanacković, N., Ašković, M. (2002). *Razvojni koraki: pregled osnovnih značilnosti otrokovega razvoja od rojstva do sedmega leta*. Ljubljana: Inštitut za psihologijo osebnosti.

McClelland, M. G., Tominey, S. L., Schmitt, S. A. and Duncan, R. (2017). SEL interventions in early childhood. *The future of children, 27* (1), 33-48.

Petty, K. (2016). *Developmental milestones of young children*. St. Paul, MN: Redleaf Press.

Pianta, R. C. (1999). *Enhancing relationships between children and teachers*. Washington DC: APA.

Schonert-Reischl, K. A. (2017). Social and emotional learning and teachers. *The future of children, 27* (1), 137-156.

Scott, J. (2004). *Early developmental milestones: a tool for observing and measuring a child's development ages 2 ½ to 6 ½ years.* Illinois: Super duper publications.

Zins, J. E., Elias, M. J. and Greenberg, M. T. (2007). School practices to build social-emotional competence as the foundation of academic and life success. In R. Bar-On, J. G. Maree and M. J. Elias (eds.). *Educating people to be emotionally intelligent.* (pp. 79-94). Westport: Praeger Publishers.

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION
AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Future Preschool Teacher's Mathematics Knowledge for Teaching – A Case of Fractions

ALENKA LIPOVEC

Abstract Mathematics knowledge for teaching (MKT) is a characteristic predictor of the quality of later teaching. The presented study fills out the gap in the literature, referring to the pre-school period. The findings relate to the "equal parts of a given whole" concept, which precedes the concept of fractions. Fractions are sparsely presented in pre-primary mathematics, even though they often occur in real life. Children with underdeveloped concepts of fractions build up incorrect schemes, which are later difficult to eliminate. Nevertheless, the ways of presenting those concepts to children are of crucial importance for future children's mathematical achievements. We have analysed the examples that future educators proposed as real-life cases for simple fractions useful in preschool settings. Data show that MKT of the future preschool educators (N = 163) is weak. MKT was analysed with for mathematics conceptualized Shulman's model. The results have shown that weak areas of preschool future educators can be found in specialised content knowledge, horizon content knowledge, and knowledge of content and curricula. Participants when providing real-life examples of fractions did not follow the general didactic principle of example diversity and thus reduced the number of child's experiences from which the concept could be abstracted.

Keywords: • mathematics • fractions • preschool • future teachers • pedagogical content knowledge •

CORRESPONDENCE ADDRESS: Alenka Lipovec, PhD, Assiociate Professor, University of Maribor, Faculty of Education, Maribor, Slovenia, e-mail: alenka.lipovec@um.si.

DOI https://doi.org/10.18690/978-961-286-269-5.5 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

When we speak about "fractions" in early mathematics, we actually speak about parts of a given whole where the whole could be a set of objects (e.g. box of candies) or a single object (e.g. cake) that can be divided into equal parts. It is known that children have ideas about fractions prior to instruction. Hodnik Čadež and Vida Manfreda (2018) argue that such intuitive knowledge can be developed through appropriate instructional situations.

Mathematical Knowledge for Teaching

Mathematical Knowledge for Teaching (MKT) is the knowledge that mathematics teachers need to be able to teach. The concept was developed from Pedagogical Content Knowledge (PCK) for mathematical content. Shulman (1986) proposed PCK and described it as a crucial teachers' knowledge, which is created by the synthesis of knowledge of the subject, knowledge of didactics and knowledge of the school context. PCK is unique to teachers and differs, for example, a mathematics teacher from mathematician (scientist). Shulmans' definition of PCK added topics to general didactic knowledge and content knowledge, which the teacher should take into account in teaching, for example, how to connect content to pupils' experiences, which representations are more useful for learning certain content, which contents are more interesting to students, which ones are more demanding etc. Shulman stated that PCK also includes knowledge about students' characteristics, knowledge of pedagogical contexts, knowledge of educational values, their philosophical and historical backgrounds. In addition, PCK refers to the teacher's ability to convert content into a form that is pedagogically strong and adaptable to differences in students' abilities and background. As stated in the systematic review of this field, "PCK is a very influential in research on teaching and teacher education, mainly within the natural sciences" (Depaepe, Verschaffel, & Keltchtermans, 2013, p. 12).

Probably the most influential reconceptualisation of teachers' PCK was done through the overarching constructs of Mathematical Knowledge for Teaching (MKT). Leading researchers in that field Loewenberg Ball, Hill, and Bass (2005) point out that teaching of understanding requires special mathematical knowledge for teaching. In the past two decades, researchers in the field of

education of future mathematics teachers have broadened the concept of PCK by developing a more in-depth conceptualisation.

Based on the Shulman concept, Loewenberg Ball, Thames and Phelps (2008) described the MKT components (see Figure 1):

- the general mathematical knowledge acquired by the majority of educated people (Common Content Knowledge, CCK),
- awareness of how distinct mathematical topics are related to each other (Horizon Content Knowledge, HCK),
- specialized mathematical knowledge, which is unique and necessary for teaching mathematics (Specialized Content Knowledge, SCK),
- the knowledge that combines knowledge of content and students, (*Knowledge of Content and Students,* KCS),
- the knowledge that combines knowledge of mathematics and didactic of mathematics (*Knowledge of Content and teaching*, KCT) and
- knowledge of mathematics and curriculum (KCC).

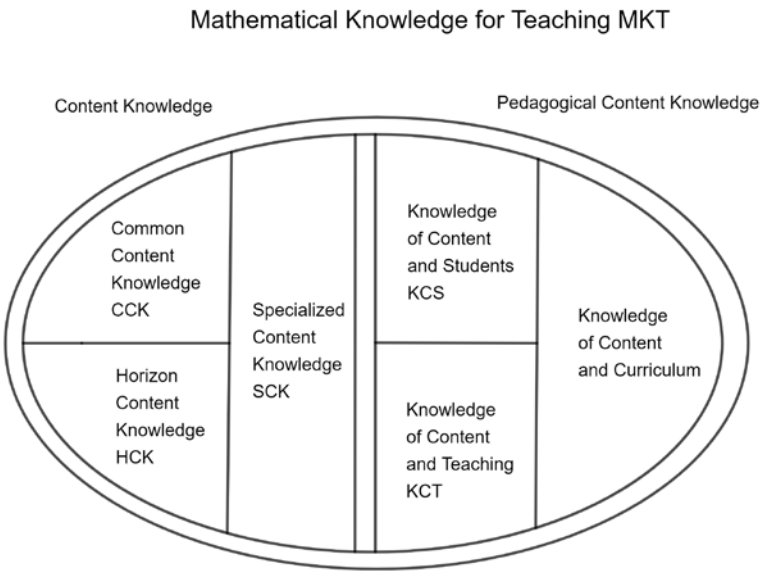


Figure 1: MKT
(Adapted from Loewenberg Ball, Thames, & Phelps, 2008, pp. 403)

MKT is still in the process of conceptualisation (Scheiner, Montes, Godino, Carrillo, & Pino-Fan, 2019), which is derived primarily from empirical data on a sample of future mathematics teachers in elementary and secondary school. MKT was found to be a characteristic predictor of the success of teaching mathematics at all levels, from preschool to secondary school level. The research of MKT pre-school teachers' is according to systematic literature review (Dunekacke, Jenßen, & Blömeke, 2015) very sparse. There are, however, hints that this area can be very important, for example, Ginsburg and Golbeck (2004) report that many preschool teachers choose to teach this age because they believed that did not require teaching mathematics. Preschool teachers are also often assumed to be uncomfortable with mathematics (Baroody, Lai, & Mix, 2006). Among the limited investigations, McCray and Chen (2012) applied a scenario-based interview to explore preschool teachers' MKT and found substantial relationships between MKT and good preschool math teaching practices and improved child's' learning outcomes. Preschool teachers whose MKT was higher, were statistically significantly more likely to use the mathematical language both during and outside the circle time. Similarly, the children of these preschool teachers achieved higher achievements on Ginsburg and Baroody (2003, in Mc Cray and Chen, 2012) TEME-3 Test of Early Mathematical Ability.

MKT applies to all taught mathematics contents. One of the most important contents in mathematics are fractions.

Fractions in preschool mathematics

Fractions are equal parts of a whole. The child's understanding of parts of a whole was studied by Piaget, Inhelder, and Szeminska (1960). They distributed a cake between a variety of dolls with children aged between four and seven and discovered that part-to-whole relationship can be understood by the child perceptually. In the past, quite a number of studies have been designed around the early development of the fraction concept. In the 1990s, a group of researchers found that when learning fractions, children are often disturbed by the idea of integers (Behr, Wachsmuth, Post, & Lesh, 1984). The person thinking that the fractions are summed by summing the counter and the denominator of the fractions indicates interference with integers also. Hunting (1986) assumed that the integer idea was so heavily anchored in cognitive schemes since the

development of fractions is delayed for too long. He proposed earlier acquaintance with these concepts, of course in the child's appropriate way. Mental representations of mathematical concepts are in preschool developed using concrete models. Models that we can specifically handle provide more opportunities for testing, errors, and inquiry. Models also allow children to understand the quantitative value of the fraction as a number. Singer-Freeman and Goswami (2001) state in their research two ways of informing children with fractions: through a continuous amount (pizza, bread, etc.), or through a discrete quantity (box of candies). Educators should use several different models for the same activity. Providing different experiences for children enables the child to extract common features and thereby build an abstract mathematical concept. For fractions, at least three types of models have suggested: areas or geometric models, strips or measurable models and sets or arithmetic models (Van de Walle & Lovin, 2004). Singer-Freeman and Goswami (2001) refer to the first, geometric model as continuous amount; the arithmetic model is the same as discrete quantities. A measurable model represents an intermediate stage between continuous and discrete models. For measurable models, both geometric strategies (e.g, folding) as well as computational strategy (e.g. measure the string or divide the measure by two, count the pieces of chocolate in order to calculate half of them) can be used.

Kieren (1976, in Hodnik Čadež, 2018) describes five different subconstructs of fractions commonly used in mathematics education: a) fractions as dividing a given whole (area, length, set of objects) into equal parts or subsets—the part-whole subconstruct; b) fractions as positions on a number line—measure subconstruct; c) fractions as a result of division—quotient subconstruct; d) fractions as operators—operator subconstruct and e) fractions as ratio—ratio subconstruct. In this paper, only the first subcunstruct will be analysed because of the preschool age target group.

Research problem

Mathematical knowledge for teaching fractional understanding is highly researched in various age groups (e.g. Hodnik Čadež, 2018), however not enough emphasis is given to the preschool period. In Slovenian preschool settings Lipovec, Antolin Drešar, and Vaupotič (2012) confirmed the results of a survey conducted by Singer-Freeman and Goswami (2001): a) pre-school child should

experience activities involving simple fractions; specifically the concepts of half and a quarter and b) preschool children can understand fractions derived from halving activities. Unfortunately, fractions are not included in mathematical activities of Slovenian pre-schools at all (Nudl A. , Brezočnik, Lipovec, & Antolin Drešar, 2012). In Slovenian curriculum for preschool education mathematics is one of the six main areas (language, nature, society, movement, arts). Main preschool mathematics contents are arithmetic (number and simple operations), algebra (patterns), geometry (3D and 2D shapes), measurement (length, mass, time) and data. By "numbers" only development of whole numbers is introduced.

Singer-Freeman and Goswami (2001) suggest that teacher training schools should pay special attention to the MKT of future educators in the field of fractions. At the University of Maribor, some fraction related activities are included in the preschool teacher training course. Future preschool teachers are given examples of real-life objects representing half, third, quarter and eighth. They are also familiarized with some research results in that area. In the assessment, future preschool teachers are expected to design so-called Booklet of numbers (comp. Figure 2), including also simple fraction examples. A detailed description of Booklets can be found in Lipovec and Antolin Drešar (2019). For each fraction, they are supposed to provide four examples in form of graphic representation (drawing, photography).

In this paper, we are interested in the evaluation results of these booklets. In other words, we will analyse future preschool teachers' MKT for fractions. Additionally, differences among future teachers according to type of the study (full-time or part time) will be analysed. In the following questions, abbreviations from the model described by Figure 1 are used. Following research questions have been stated:

1. How can we describe future preschool teachers' content mathematical knowledge (CCK, HCK, and SCK) regarding fractions?
2. How can we describe future preschool teachers' didactical mathematical knowledge (KCS, KCT, KCC) regarding fractions?
3. Are there any differences among future preschool teachers according to type of study (full-time or part-time)?

Method

The quantitative methodology was used to analyse the so-called Booklets of numbers. Booklet of numbers consists of at least four graphic representations for each of the following numbers: one to ten, twenty, half, quarter, eighth and third. An instance for number two could for example be designed around four photos (two ears, two cherries, two legs of a chicken, twins) with added symbolical and/or iconic dot representation. Booklets can be designed in guided instruction with children from pictorial materials prepared by a teacher or can be used only as pictorial supplement to preschool settings. Participant were 163 future preschool teachers, 111 were included in full-time training, 52 were included as part-time students. Part-time students are in Slovenia students that are working and studying at the same time, they are obliged to do the same program as full-time students, but the contact hours are reduced to one third. There were 158 females and 5 male participants.

Common content knowledge (CCK) was coded through the knowledge of the fundamental principle of equal sharing: the fraction is obtained, when the whole is divided into equal parts. Specialized content knowledge (SCK) was encoded using different models for fractions (geometric, measurement, arithmetic). Horizon content knowledge (HCK) was coded through the use of a discrete model that connects parts of the whole with number concepts. Knowledge of content and students (KCS) was coded with examining whether the examples were derived from the child's life experiences. Codes indicating knowledge of content and teaching (KCT) have been created through reviewing the order of fractions as appearing in a Booklet: first, halving (half, quarter, and eighth) and then examples of thirds. Knowledge of content and curriculum (KCC) was checked through the awareness of the future educator that at the pre-school period we do not develop concepts at the symbolic level. All codes were binary, adequate (1), or inadequate (2). Some illustrative examples could be seen on Figure 2. If one of the pictures in one of the instances represented division into unequal parts, CCK was coded as 0, otherwise it was coded as 1 (see Figure 2, case C). If all three models of fractions were present in joint set of instances for half, quarter and third, SCK was coded as 1, otherwise it was coded as 0. If discrete model of fractions was present in at least one picture HCK was coded as 1, otherwise it was coded as 0. KCS was coded as 1, if a majority of pictures related to experiences of preschool child. KCT was coded as 1 if the order of

presented fractions followed suggested order for preschool age (half, quarter, third). KCC was coded as 0 if symbolic representation occurred, otherwise it was coded as 1.

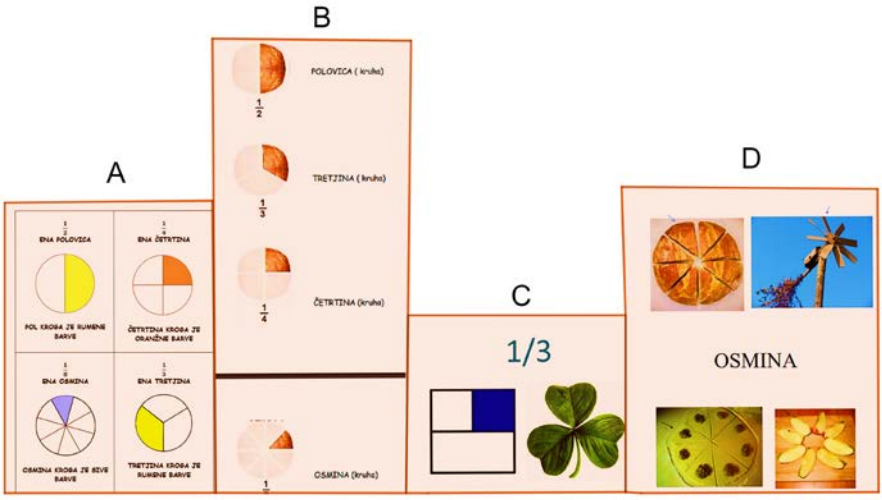


Figure 2: Adequate MKT (case D); inadequate: CCK (case C), SCK(case B), HCK (case B), KCS (case A), KCT (case B) and KCC (cases A, B, C).

For inferential statistics, Mann Whitney's' U and Chi-square (or Kullback test, if necessary) were used on 5 % significance level.

Research results

Table 1 and Table 2 show the results of descriptive data analysis. Table 1 shows the results for preschool future teachers' content mathematical knowledge in area of fractions. Content knowledge is divided into common content knowledge (CCK), specialised content knowledge (SCK) and horizon content knowledge (HCK) as explained in Figure 1.

Table 1: Preschool future teachers' content mathematical knowledge for teaching.

	Common content knowledge CCK		Specialised content knowledge SCK		Horizon content knowledge HCK	
	f	f %	f	f %	f	f %
Adequate	154	94,5	49	30,1	49	30,1
Inadequate	9	5,5	114	69,9	114	69,9
Total	163	100	163	100	163	100

Table 1 shows that the weak area in the field of content knowledge is, as expected, SCK. More than two-thirds (69,9 %) of the future teachers provided only one model (geometric one), which means that children would become acquainted with parts of the whole only through continuous amount. The discrete model appeared in significantly fewer cases (23 %). Since no example showed a measurable model, the measurement of SCK was covered by the measurement of HCK. It can also be noted that future educators do not follow the principle of diversity in examples that are important in the abstraction process.

Table 2: Preschool future teachers' didactical mathematical knowledge for teaching

	Knowledge of content and students KCS		Knowledge of content and teaching KCT		Knowledge of content and curriculum KCC	
	f	f %	f	f %	f	f %
Adequate	105	64,4	55	33,7	57	64,8
Inadequate	58	35,6	108	66,3	105	35,2
Total	163	100	163	100	163	100

For didactic knowledge of the content, more than half of future educators took into account the principle of evolving from the child's life experiences and provided relevant real-life examples. This indicates an appropriate level of KCS (comp. Figure 2, case D). A typical example encoded as an inadequate KCS is an image of a circle with shaded parts of a whole (comp. Figure 2, case A). Although students have been instructed to try to find as many life situations as possible (e.g. pizza, cake, chocolate) and have seen some examples, they have chosen an appropriate representation for pre-school children that is typical for the end of the first three years of primary school. In the other two areas (KCT and KCC), however, most future educators did not provide adequate examples. The weak area in didactical mathematical knowledge for teaching is KCT (comp. Table 2). Almost two thirds of future preschool teachers were not aware of the suggested order of fractions and presented the order that is natural for whole numbers (half, third, quarter). Development of the notion of parts of the whole was presented in lectures and future preschool teachers have actively been involved in the activities at the exercises regarding fractions. Nevertheless, students did not realize that one third was significantly more difficult than one half, one quarter or one eighth, or that a symbolic record (e.g. $\mathbf{\frac{1}{3}}$) is not developmentally adequate representation for pre-school children.

Additionally, MKT was coded as fully adequate, if all future preschool teachers' subsections of MKT were adequate, i.e. CCK, SCK, HCK, KCS, KCT and KCC were all coded as 1. There were only 3.1 % of future educators who have fully adequate MKT.

Regarding third research question we have also checked differences between full-time and part-time (partly in-service) students. We hypothesised that part-time students have more experience in practice and some differences will occur. Statistically significant differences at the level of 5 % risk were detected in the area of KCS (χ^2 = 16.302, P = 0.000) and KCC (χ^2 = 8.143, P = 0.007). In the first case, part-time students were better and in the second case, full-time students outer performed part-time students, as can be seen from Table 3.

Table 3: Full-time students and part-time students MKT

		Full-time		Part-time	
		f	f %	f	f %
KCS	adequate	7	4	51	31
	inadequate	45	28	60	37
KCC	adequate	26	16	25	15
	inadequate	31	19	80	49

The results were compared also to the students' assessment grade at the end of the course. The Booklet of numbers was namely only one assignment, which contributed only 8 % to the final grade. In order to ensure a normal distribution, the data were standardised and Z-values were used. We could reject only the null hypothesis for KCS (Mann Whitney U = 3966.5, P = 0.001). Students with higher average grade have, as expected, more often provided real-life examples. KCS was in the second phase coded as adequate, partly adequate and inadequate according to real life prevalence in examples. Spearman ρ between KCS and course grade was found to be significant at 0.01 level and of weak to moderate size (0.303). In other MKT subsections, significant differences were not detected.

Discussion

Data show that future preschool educators' MKT is weak, especially neuralgic areas are SCK, HCK, and KCC. The results of the weaker MKT were also found in some other studies in the field of pre-school mathematics, namely the weaker MKT in the area of numbers (Dunekacke, Jenßen, & Blömeke, 2015) and number operations (Oppermann, Andres, & Hachfeld, 2016). Case C in Figure 2 demonstrate weakness in CCK and difficulties with fraction as described also by Behr, Wachsmuth, Post, & Lesh (1984). Case C shows area divided in three unequal parts, one of them coloured and denoted as $\frac{1}{3}$. Fortunately, we found only nine such examples (5.5 %). The part-whole Kieren subconstruct (1976, in Hodnik Čadež, 2018) is the most important (and only) subconstruct developed in preschool age and it is well known that teachers cannot teach effectively if they struggle with the content (Loewenberg Ball, Thames, & Phelps, 2008). Cases A and B both show weaknesses regarding organising situations from which children

can abstract math concepts. Figure 2, Case A shows picture of the circle with shaded parts of the whole. Although future preschool teachers have been instructed to try to find as many different life situations as possible and have seen some examples (e.g. pizza, cake, chocolate, ribbons), they have chosen an image that characterizes the end of the first three years of primary school as an appropriate representation for pre-school children. Figure 2, Case B shows a real-life example, however all fractions are abstracted from a single example, example of bread. In preschool age, children use empirical abstraction for which a lot of objects or situations must be experienced in order to form an abstract. You cannot induce concept *yellow* if you only and exclusively connect lemons with yellow.

According to our data in most areas of MKT there are no statistically significant differences between full-time and part-time students. The exception is knowledge of content and students (KCS), i.e. awareness of the importance of children's experiences and knowledge of content and curriculum (KCC), i.e. awareness of inappropriateness of the symbolic records for fractions in the preschool age. The results are unusual, as they show the priority of part-time students in one area, while on the other, the advantage of full-time students. We believe that the results of the study would be more consistent if the sample of part-time students is composed exclusively of participants who are employed in the kindergarten. There are not many studies investigating differences among preservice and in-service teachers. A study in the affective area (anxiety and beliefs) was conducted by Aslan (2013). Findings are inconclusive and indicate that in-service teachers had higher mathematical anxiety score than preservice teachers. On the contrary, in-service teachers had higher beliefs score than preservice teachers.

Conclusion

We see several possible reasons for a weaker level of future preschool teachers' MKT. Vocational aspirations for teaching professions at lower levels (preschool and primary) are not in positive relationship with mathematical knowledge. Strong areas of future preschool teachers are more pedagogically oriented than content oriented. Last, but not least, there is the under-emphasis on mathematics in the preschool training programs (for instance less than 10 ECTS of 180 ECTS are allocated to mathematics at the Faculty of Education, University of Maribor).

Although research highlights the importance of kindergarten mathematics, our results show that MKT of future preschool teachers regarding fractions in kindergarten is weak. Even in-service kindergarten teachers spend little time on mathematics instruction and cover only very basic content, such as counting (Nudl A. , Brezočnik, Lipovec, & Antolin Drešar, 2012). Most research in this field (i.e. mathematics education in preschool context) focuses on the affective field (anxiety, beliefs). The cognitive field is represented by mostly psychologically oriented studies, educational studies are quite rare. Therefore, research findings in this area are significantly complemented by results presented in this study.

References

Aslan, D. (2013). A comparison of pre- and in-service preschool teachers' mathematical anxiety and beliefs about mathematics for young children. *Academic Research International, 4*(2), 225 230.

Baroody, A. J., Lai, M.-L., & Mix, K. S. (2006). The development of young children's early number and operation sense and its implications for early childhood. In B. Spodek, & O. N. Saracho (Eds.), *Handbook of research on the education of young children* (pp. 187 221).

Behr, M. J., Wachsmuth, I., Post, T. R., & Lesh, R. (1984). Order and equivalence of rational numbers: A clinical teaching experiment. *Journal for Research in Mathematics Education, 15*(5), 323 341.

Depaepe, F., Verschaffel, L., & Keltchtermans, G. (2013). Pedagogical content knowledge: A systematic review of the way in which the concept has pervaded mathematics educational research. *Teaching and Teacher Education, 34*, 12 – 25. doi:10.1016/j.tate.2013.03.001

Dunekacke, S., Jenßen, L., & Blömeke, S. (2015). Effects of Mathematics Content Knowledge on Pre-school Teachers' Performance: a Video-Based Assessment of Perception and Planning Abilities in Informal Learning Situations. *International Journal of Science and Mathematics Education, 13*, 267–286. doi:10.1007/s10763-014-9596-z

Ginsburg, H. P., & Golbeck, S. L. (2004). Thoughts on the future of research on mathematics and science learning and education. *Early Childhood Research Quarterly, 19*, 190 200. doi:10.1016/j.ecresq.2004.01.013

Hodnik Čadež, T., & Manfreda Kolar, V. (2018). How fifth-grade pupils reason about fractions: a reliance on part-whole subconstructs. *Educational Studies in Mathematics, 99*(3), 335 – 357. doi:10.1007/s10649-018-9838-z

Hunting, R. P. (1986). Rachel's schemes for constructing fraction knowledge. *Educational Studies in Mathematics, 17*, 49 – 66.

Lipovec, A., & Antolin Drešar, D. (2019). *Matematika v Predšolskem Obdobju.* [Mathematics in Preschool]. Maribor: Univerzitetna založba Univerze v Mariboru.

Lipovec, A., Antolin Drešar, D., & Vaupotič, A. (2012). Deli celote v vrtcu. [Parts of a whole in kindergarten]. *Revija za elementarno izobraževanje, 5*(1), 67 – 77.

Ball, D. L., Hill, H. C., Bass, H. (2005). Knowing mathematics for teaching: Who knows mathematics well enough to teach third grade, and how can we decide? *American Educator, 29*(3), 14 – 46.

Loewenberg Ball, D., Thames, M. H., & Phelps, G. (2008). Content Knowledge for Teaching. What Makes It Special? *Journal of Teacher Education, 59*(5), 389 – 407. doi:10.1177/0022487108324554

McCray, J. S., & Chen, J.-Q. (2012). Pedagogical Content Knowledge for Preschool Mathematics: Construct Validity of a New Teacher Interview. *Journal of Research in Childhood Education, 26*(3), 291 – 307. doi:10.1080/02568543.2012.685123

Nudl, A., Brezočnik, D., Lipovec, A., & Antolin Drešar, D. (2012). Struktura zastopanosti matematičnih dejavnosti v slovenskih vrtcih. [Structure of mathematics activities across math domains in Slovenian kindergartens]. *Matematika v šoli, 18*(1/2), 5 – 14.

Oppermann, E., Andres, Y., & Hachfeld, A. (2016). The influence of preschool teachers' content knowledge and mathematical ability beliefs on their sensitivity to mathematics in children's play. *Teaching and Teacher Education, 58*, 174 – 184. doi:10.1016/j.tate.2016.05.004

Piaget, J., Inhelder, B., & Szeminska, A. (1960). *The Child's Conception of Geometry*. New York: Basic Books.

Scheiner, T., Montes, M. A., Godino, J. D., Carrillo, J., & Pino-Fan, L. R. (2019). What Makes Mathematics Teacher Knowledge Specialized? Offering Alternative Views. *International Journal of Science and Mathematics Education*, 153 – 172. doi:10.1007/s10763-017-9859-6

Shulman, L. S. (1986). Those who understand: knowledge growth in teaching. *Educational researcher, 15*(2), 4 – 14.

Singer-Freeman, K. E., & Goswami, U. (2001). Does half a pizza equal half a box of Chocolates? Proportional matching in an analogy task. *Cognitive development*, 811 – 829.

Van de Walle, J. A., & Lovin, L. H. (2006). *Teaching Student-Centered Mathematics: Grades K-3*. Boston, MA: Pearson/Allyn and Bacon.

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

The Development of Number Sense in Preschool: The Counting of Objects

MARINA RODRIGUES

Abstract We present qualitative research about number sense in the preschool that shows how children develop their ability to count objects in interaction with their peers and with adults. The aim of the study is to understand how preschoolers develop their number sense and what strategies they use when solving numerical problems in their day-to-day contexts, and how to provide learning experiences that facilitate, promote and stimulate the development of numerical skills in children. The results of the research included a large descriptive component to clarify the children's reasoning and the way in which they reported it. The study was carried out over six months in three heterogeneous kindergartens rooms in Leiria´s district, involving 52 children between the ages of 3 and 6 years. The results indicate that a) younger children reveal an emerging knowledge of the numerical sequence, the older ones do it already with some security, exhibiting, however, different skills, b) learning is a process with a great social component and c) children do not construct mathematical ideas in an organised and sequential way, but rather as a result of diversified experiences in significant contexts.

Keywords: • number sense • counting • interaction • preschool • mathematics •

CORRESPONDENCE ADDRESS: Marina Rodrigues, PhD, Instituto Politécnico de Leiria, School of Education and Social Sciences, Center for Studies in Education and Innovation (Ci&dei), Leiria, Portugal, e-mail: marina.rodrigues@ipleiria.pt.

DOI https://doi.org/10.18690/978-961-286-269-5.6 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

This article presents part of an investigation that analysed the development of a fundamental component of mathematical thinking in the early years, the number sense.
We begin with a brief review of the literature that supported the investigation, in particular the aspects related to counting, followed by the methodological options that guided this study. The results of the implementation of the three object counting related tasks are then displayed and finally, the main conclusions of this study are presented.

The development of mathematical skills in pre-school

Children's mathematic learning process has been subject of research for a long time (Baroody, 2002; Fuson,1988; Ginsburg, 1983). Children´s early mathematical experiences are very important for their attitudes and conceptions in relation to this science. If these experiences are meaningful, then children will develop favourable attitudes, values and conceptions, becoming confident, autonomous and flexible in their mathematical learning (Rodrigues, 2010).
On the contrary, experiences that are not mathematically significant will facilitate the conception that mathematics learning consists of meaningless memorizing activities, making children unable to apply their knowledge when confronted with new situations (Carpenter, Fennema, Levi, Empson, 1999). Therefore, it is vital to develop children's self-confidence regarding their mathematical abilities (in particular those related to numerical skills) to solve and discuss real problems (Fosnot & Dolk, 2001). Following this line, it is necessary to create situations in which the children can express their mathematics reasonings because we know today that children learn by expressing and clarifying their thinking, listening and considering the mathematical ideas of others (Wood & Frid, 2005).

The Number Sense in the Preschool

Number sense is an expression that appeared in the literature recently. According to Castro and Rodrigues (2008, p.11) it is

> "*referring to the global and flexible comprehension of numbers and computation, with the intention of understanding numbers and their relationships and to develop useful and effective strategies to use each one of them in their day to day life, in their professional life or as an active citizen. It is, therefore, a construction between numbers and operations, of numerical recognitions and constructed numbers models throughout life and not only in school. It also includes the ability to understand the fact that numbers can have different meanings and can be used in various contexts* "

Aunio (2006) and Mcintosh et al. (1992) have characterised what is meant by number sense, showing that having a number sense is much more than a mere accumulation of isolated facts. In conceptual terms, number sense includes recognition of the relative magnitude of numbers, the computation effects on numbers and the development of referentials for discrete and continuous quantities. In operational terms, it involves the ability to flexibly use numbers in computing and estimates, evaluate the results reasonableness, the ease in dealing with different numerical representations, and to relate numbers, symbols, and computing (Rodrigues, 2010).

A third dimension must also be added, precisely the one which concerns the affective aspects and which can be decisive in subject´s attitude towards the numbers in particular and the mathematics in general and that will be reflected in the conception that they are forming in relation to this science (Rodrigues, 2010).

The development of number sense is a gradual and evolutionary process that begins long before formal education. It arises very early when children think about numbers and try to make sense of them (McIntosh et al., 1992), although there is no parallelism between the children's age and the evolution of number sense (even in their most basic actions).

The counting

As we already mentioned, research shows that the development of children's mathematical knowledge begins before formal education (Baroody, 2002, Fuson, 1988, Ginsburg, 1983). This is what we call informal knowledge and is based on day-to-day counting experiences. This knowledge can be surprising (Aunio, 2005). In kindergarten, and even in the first elementary school years, children solve arithmetic problems using informal counting strategies instead of using the formal knowledge they have acquired in the meantime. Thus, although it is a type of knowledge that is inconsistent, not very logical and often incomplete, it is this informal knowledge that must be valued in preschool, because it is from this that, later on, formal knowledge will be built.

Counting is one of the first mathematical experiences for children. There are countless everyday situations that facilitate this learning (stories, songs, games) and the more these situations are experienced in diverse contexts, the better the children begin to understand the different meanings of numbers (Baroody, 1987). Baroody (1987) mentions as elements of the construction of the numerical sequence: knowledge of the sequence of numbers with a single digit; knowledge of irregularities between 10 and 15 the understanding that 9indicates transition; knowledge of transition terms for a new series; knowledge of the rules to generate a new series.

Therefore, creating opportunities for children to develop their oral counting skills is key to numerical development. However, it is only when faced with situations in which object counting becomes fundamental that the child feels the need to know more terms of the number sequence and to relate them to each other by developing their sense of number (Schwerdtfeger and Chan, 2007).

The ability to count objects is consequently an important step in building children's numerical skills. According to Baroody (1987), the counting of objects implies the mastery of certain abilities that are developed, experienced and observed though social interaction.

Their abilities are: that each object relates to one and only one term of the count; how not to lose or repeat any object; the concept of cardinality; that the count does not depend on the order in which the objects are counted (Baroody, 1987). The role of numerical patterns is very important in the development of the objects´s counting ability, mainly by the implication that this will have on the establishment of numerical relationships.

The ability of subitizing is the automatic recognition of numerical pattern without counting (Baroody, 2007). It is a fundamental skill in children's number understanding. For example, the recognition of a numerical pattern by children contributes to the development of the understanding of the principle of conservation and the principle of cardinality because, given different arrangements of the same number, children will realize that both have the same number of elements (cardinality) and that the arrangement of these elements does not interfere with this number (conservation).

We can conclude that according to Clements and Sarama (2007), the development of counting skills in pre-school aged children includes four interrelated phases: recognizing and identifying small amounts through simple visualization (subitizing); knowing the terms of the count sequence up to ten; using this knowledge in counting objects; understanding when counting the last term tells us how many objects were counted.

Although we consider that at the end of pre-school, not all children develop these skills, we argue that in favourable learning environments all will achieve this and many will go further.

Purpose of the study and research questions

In the study we focus on the development of the ability to count objects from the description and analysis of three tasks that aimed to develop the ability to count objects.

In this study we analysed the aspects of this development in relation to the counting of objects (Baroody, 1987).

The research underlies the following purposes:

- To understand how preschoolers develop their number sense and what strategies they use when solving numerical problems in their day-to-day contexts;
- To provide learning experiences that facilitate, promote and stimulate the development of numerical skills in children.

Methodology

The nature of the problem to be investigated, since it was not intended to answer previous questions or generalisations, suggested the adoption of a qualitative methodology with an interpretative focus centered on participant observation (Bogdan & Biklen, 1982).

The results of the research included a large descriptive component to clarify the children's reasoning and the way in which they reported it. For this, the tasks implementation sessions were audio-recorded and later transcribed.

The study was carried out over six months in three heterogeneous kindergartens rooms in Leiria´s district, involving 52 children between the ages of 3 and 6 years.

In this article due to space limitations, we selected only one of the kindergartens and three of the seven tasks applied, precisely those that were more related to the counting of objects. The collected data were analysed using content analysis and we defined the following category analysis regarding object counting: oral counting, counting strategies, cardinality principle (last term is the total number of counted objects) and principle of order irrelevance.

Results

Task: The game "Count and discover"

The purpose of this task was to identify the children´s oral skills, which would determine the way in which the following tasks would be presented to them. A game situation was created where children should count with their eyes closed while the educator hid one of six previously selected objects for the game. When the child began to hesitate in counting, the teacher would say the word "stop" the child would stop, open his eyes and identify the missing object. Below are transriptions of some of the situations:

> Ed: Are you ready B? When we give the starting signal, you can start counting
> Ed (and children in chorus): 3 ... 2 ... 1 start!
> B (4 years): 1, 2, 3, ... 14, 15, ..., 16, ... 14, 15, ... 16, ..., 14, 15, ...
> Ed: Stop! What did I hide?
> B: The banana
> Ed: All right, B was right!
>
> Ed: Attention L! 3..2..1..start!
> L (3 years): 1, 2, 3, 4, 2, 4, 1, 2, 3, 4,
> A: Not like that. It is 1,2,3,4,5,6
> L tries to follow peers who give support by counting out loud
> L: 1,2,3,4,5,6
> Ed: Stop! What is hidden?
> L: The lion
> Ed: You got it!
>
> Ed: Come on T, 3 ... 2 ... 1 ... start!
> T (5 years): 1, 2, 3, ... 29, 30, 31, ... 39, 40, 41 ...
> Ed: Stop
> T: You hid the big bear!
> Ed: Right!

The examples above are indicative of the children's performances. As can be seen, the children revealed some knowledge of counting sequence. Although the younger children (3 years) did not exceed the count to 5, creating their own counting sequence, this sequence was not random, already identifying some pattern in the count by always repeating it (1,2,3,4, 1,2,3,4,1,2,3,4, ...). The fact that, in these circumstances, older and/or more knowledgeable peers helped them, correcting them, helped their numerical universes to progressively widen. The children of 4 and 5 years old showed a greater control in the count, with little hesitation in the irregularities, already understanding the standardization in the count. If child B (4 years) revealed fluency in the count up to 10 and the knowledge of some irregularities of the count, child T (5 years) demonstrated mastering the terms of the numerical sequence.

In summary, this task showed that ascending oral counting is a procedure to which children are accustomed and if the younger children revealed a very emerging knowledge of the numerical sequence, the older ones did it already with some security, exhibiting, however, different skills.

Task: "Bottle Lids"

In order to stimulate and develop the ability to count objects (and at the same time oral counting), this task was developed and continued throughout the six months in which this work was carried.

A carton containing a outer bag was constructed in which the children introduced a card representing a number between 4 and 30. On each card a different number was displayed by the representative numeral and through spots (for values less than 15). Plastic bottle lids were used.

Each day a child would extract a card from the card's envelope, placing it in the see-through bag and selecting the same number of bottle lids as the number indicated on the card, placing them inside the box. The correction of this procedure would always be accompanied by a peer and the educator. The educator took into account the child's numerical universe when placing the cards at their disposal.

Below are some transriptions ofsome of the situations experienced:

Ed: M, take a card (3 years)
M (3 years): This (shows a card with the number 4)
Ed: How many spots does your card have?
M: 1,2,3,4
Ed: How many?
M: 1,2,3,4
Ed: Now you're going to put lids in the box, you know how many you have to put?
M: Yes
Ed: How many?
M does not respond. Select 4 lids from the ones that were scattered on the table
M: These
Ed: Okay, it's as if these spots were lids, every spot is a lid that you have to put in the box. How many spots?
M: 1,2,3,4
Ed: If you put these lids (shows two lids) is it okay?
M shakes head negatively
Ed: You counted the lids, did you count up to two?
M: No
Ed: Yeah, that's why it's not two lids. You counted up to how many?
M: 1,2,3,4
Ed: You counted until 4, you finished at four, so you have to go get how many lids?
M 4.
Ed: All right!

Ed: How many lids do you have to put in the box?
R (4 years): 15.
R removes a lot of lids and starts counting them.
R: 1,2,3,4 ... 14,15.
Ed: Did you make any mistakes? I think you counted too fast, check again
R (counting slower): 1,2,3,4, ... 13. I had miscounted
Ed: Yes, you counted too fast. What are you going to do?

A: I'll count again. 1,2,3,4, ... 14,15. It's all of these.

S (5 years): Which one did you choose?
P (5 years): This, the 15.
P removes the bottle lids with his hands and starts counting very quickly.
P: 1,2,3,4,5,6,7.
S: You are counting so fast that we can't understand you, it's all wrong.
P: It is not, I will count slowly for you to see 1,2,3,4, ... 14,15.
S. I think now is correct, I will also count 1,2,3, ... 14,15, it is okay.

The examples above show the relevance of these types of tasks, mainly the importance of interactions with adults and with other children. In fact the continued observation that we have been making seems to allow us to state that, in particular with regard to the definition of strategies that facilitate not to lose or repeat any object, as well as to coordinate the term with the object counted, the progress was visible.

Mostly the older children understood that it did not matter to count quickly, it did not matter to count to a very large number, no one won nor lost because it was not a competition. They understood that the counting had to be carried out quietly so as not to be deceived, and that moving the already counted objects allowed them to determine precisely which lids were to be inserted into the box. Also, the interactions established between the educator and the younger children (as can be seen in the first example above) contributed to the understanding that the last term corresponded to the total lids (principle of cardinality).

This task, which lasted an extended period of time, contributed to the development of children's counting skills and enabled peer interaction to be achieved, as it was intended. Effectively, the confirmation of the correction of the count, when done by the child who had done it, in collaboration with a peer, allowed the children to be attentive to the counting, procedures and strategies used by the other, favoring reflection on the action performed and learning with the other, reinforcing the idea that in these ages learning is a process with a great social component.

Task: "Game of cards with spots"

This play card game was intended to analyse and contribute to the development of object's counting ability (non-manipulable objects) and the ability to establish numerical relationships. The counting of objects associated with this task involved a degree of complexity higher than the previous task, since the objects to be counted could not be manipulated (spots drawn in letters). The fact that the letters were not removable prevented the children from using the counting strategies of objects that they usually used, as in the previous task (for example, separating counted from uncounted or aligning objects).

The activity consisted of children launching a spots dice, identificating the number of spots they got and searching for a card with the same number of spots. The cards formed 3 distinct decks (one with playcards with up to 6 spots arranged in a standardized way, one with cards with the same number of spots but arranged in a non-standard way and a third deck of cards with spots between 6 and 12 arranged regularly and irregularly .

Here are some examples:

> L (3 years) had got 3 spots in the dice. He immediately began looking for a card in the deck, extracting a 3 spot card.
> Ed: Did you choose the card wisely?
> L: Yes
> Ed: How do you know?
> L: The spots are the same
> Ed: How many?
> L: 1,2,3
> Ed: How many?
> L: 1,2,3
> Ed: 3 spots, there are 3 spots.
>
> Ed: D (4 years), you have to look for a card with how many spots?
> D: 1,2,3,4,5 (counting the spots). 5
> Ed: So let's go
> D: 1,2,3,4,5 (counts the spots of a card with 6 spots). Finished!
> Ed: Are you sure? Count again.

D: (counting slower) 1,2,3,4,5,6. It is not this.
Keeps searching, carefully counting the spots of different cards. When he grabs a 5 spots card, counts them carefully by pointing each.
D: This has 5.

T (5 years): Is this one, this is 6.
Ed: You did not count, how do you know?
T: I looked and saw that they were 6.
Ed: Can you explain how you did it?
Ed: I do not know how to explain, I looked and I saw that there are 6 (the spots were all attached to one of the corners of the letter, that is, in a non-standard way, not in rows).

Overall, this task was one of the most motivating for the children and it seems to us that their goals have been achieved. In addition to understanding the skills in development, it facilitated the expansion of these skills to more children (in particular, the development of strategies for counting non-manipulable objects, the principle of cardinality and the ability to subitizing). There were no children who did not understand what was intended. Even the three-year-olds (although some with help) understood the one-to-one correspondence they had to establish between the number of spots of the dice and the number of spots of the card they were to select, which is also visible in the first example. In summary, this task, in addition to understanding the skills in development, facilitated the extension of the same skills to more children (in particular with regard to the development of non-manipulating object counting strategies and the capacity for subitization).

Conclusions

According to the ideas of Fuson (1988) and Baroody (2002), the work accomplished confirms that children's learning develop in spiral. This is a continuous movement, where new learnings become a reality anchored on their previous knowledge. We also emphasize the importance of contexts in which the learning experiences were developed.

The children had the opportunity to perform several oral counting and object counting experiments, developing increasingly complex counting strategies. This allowed them not to lose or repeat manipulable objects (dragging them) although for fixed objects (drawings) some difficulties were noticed (e.g. counting a large number of spots in cards in the "Cards with spots " task, caused some repetitions and/or forgettings).

It is important to emphasise that the work done with the children was not formal work. It was always based on the interests of the children and only the children who showed interest participated in it. We seeked to create an environment that facilitates the self-construction of knowledge through peer interaction, accompanied by the placement of guiding questions with the purpuse of emphasizing the mathematical intention of the tasks, promoting reasoning and communication.

The aim of this work was to analyse and, if possible, to contribute to the development of children's numerical skills and, therefore, we can claim that children have become progressively more competent in counting objects, understanding how not to lose or repeat any object, including the principle of cardinality, the ordering of the numerical sequence and the consequent hierarchical inclusion.

Therefore, with this research, the ideas of Fosnot and Dolk (2001) are reinforced. In fact, children do not construct mathematical ideas in an organized and sequential way, but rather as a result of diversified experiences in significant contexts. Ideas that are less adequate are supported with more appropriate ones. This interaction leads to the construction of mathematical knowledge in an social interaction environment (Fosnot and Dolk, 2001).

References

Aunio, P. (2006). Young Children's Number Sense in China and Finland. *Scandinavia Journal of Educational Research,* 50(5).

Baroody, A (1987). *Children's Mathematical Thinking*. New York: Teachers College Columbia University.

Baroody, A. (2002). Encourage the mathematical learning of children, in B Spodek (org), *Manual of Investigation in Education of Childhood*, Lisbon: Calouste Gulbenkian Foundation.

Bogdan, R. & Biklen, S. (1982). *Qualitative research for education: an introduction to theory and methods*. Boston. Allyn and Bacon.

Carpenter, T., Fennema, E., Levi, L., Empson, S. (1999). *Children's mathematics: cognitively guided instrution*. Reston: NCTM.

Castro, J. and Rodrigues, M. (2008). *Sentido de número e organização de dados*. Textos de apoio para educadores de infância. Lisbon: DGIDC.

Clements, H. and Sarama, J. (2007). Early Childhood Mathematics Learning. In F. Lester (ed.) *Second Handbook of Research on Mathematics Teaching and Learning* ". Reston: NCTM.

Fosnot, C.T. and Dolk, M (2001). *Young mathematics at work: constructing number sense, addition and subtraction*. Portsmouth NH: Heinemann.

Fuson, C. (1988). *Children's counting and concepts of number*. New York: Springer-Verlag.

Ginsburg, H. (1983). *The development of mathematical thinking*. New York: Academic Press

Mcintosh, A, Reys, B. Reys, R (1992). A Proposed Framework for examining basic number sense. *For the Learning of Mathematics, 12*(3), 2-8.

Rodrigues, M. (2010) *O sentido de número no pré-escolar: uma experiência de aprendizagem e desenvolvimento*. Tese de doutoramento em Avances en la formation del professorado. Universidad da Extremadura, Badajoz.. Disponível em http://hdl.handle.net/10400.8/360.

Schwerdtfeger, K and Chan, A. (2007). Counting Collections. *Teaching Children Mathematics*, March, 2007.

Wood, K. & Frid, S. (2005). Early Childhood Numeracy in a Multiage Setting. *Mathematics Education Research Journal, 16*(3). 80-99.

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Family Reading and Discovering Fairy Tales from World Heritage Through the Picture Book Once Upon... 1001 Stories by Lila Prap

DRAGICA HARAMIJA

Abstract This paper introduces the picture book Once upon… 1001 Stories as a useful tool for family reading. The book takes both children and adults through a reading maze, inviting them to create their own stories, which in terms of their motives draw on folk tales from world heritage (Three Bears, Little Red Riding Hood, The Three Little Pigs, The Frog Prince etc.). This paper introduces the basic guidelines for family reading which is a prerequisite for developing a child's reading literacy. Cross-generational reading within a family is a crucial element which has been substantiated in several documents, such as the two strategic documents on the competences for the 21st century (Key Competences for Lifelong Learning 2018; Road Map for Arts Education 2006). Raising awareness of the meaning of world and national cultural heritage among children, using playful and interesting methods and can be a great means of promoting family reading.

Keywords: • children's literature • cultural heritage • family literacy • key competences • Lila Prap •

CORRESPONDENCE ADDRESS: Dragica Haramija, PhD, Full Professor, University of Maribor, Faculty of Education and Faculty of Arts, Maribor, Slovenia, e-mail: dragica.haramija@um.si

DOI https://doi.org/10.18690/978-961-286-269-5.7 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

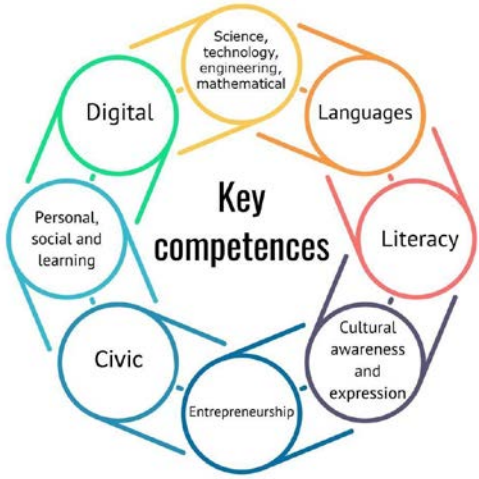
Introduction

As part of the Early Years Education (EYE) Programme which has been focusing on the development of innovative approaches to children's education, literacy is considered, at least indirectly, a crucial element in all disciplines. Those that are responsible for early development of pre-reading skills are the institutions (kindergartens) and parents or other adults living with a child. Partnership between kindergarten and parents may have a beneficial effect on children becoming aware of the importance of reading, understanding printed and electronic media, comprehending cultural heritage, and developing an inclusive peer-to-peer relationships. In the article family literacy is presented on the basis of an excellent picture book written by Lila Prap entitled *Once Upon... 1001 Stories*, which, for the aim of understanding the content, requires the reader to be familiar with canonical texts of the world's cultural heritage. In order to be able to assemble the meaning when reading a contemporary book in a non-linear way (i.e. intertextuality) the reader has to be familiar with the fairy tales known as a part of the world literary history (an intercultural text). By reading various national literature an intercultural module of understanding, reading and accepting quality children's books can be established, making it the starting point for the connection with the EYE project.

Family literacy is part of reading literacy that comprises cross-generational reading in all spheres of activity (language, art, social sciences, natural sciences, maths, movement) as well as all levels of a child's development (cognitive, social, emotional, aesthetic, moral-ethical, and motivational). It can be regarded as various activities within the family, related to literacy in its widest context, which involve participation of different generations of people learning together.[1] All national child literacy strategies should include family literacy strategies. The monograph entitled *Family literacy in Europe: using parental support initiatives to enhance early literacy development* by Carpentieri, Fairfax-Cholmeley, Litster and Vorhaus (2011, p. 8) highlights: "The key finding of this report is that family literacy programmes are effective, both in improving child literacy and in improving parental support skills."

[1] In the years 2016 and 2017 a group of researchers from the Faculty of Education and the Faculty of Arts (University of Maribor) cooperated in a research-development project entitled Hugged by Words. That is how they came up with A Model of Developing Family Literacy (2017, p. 2-5).

In January 2018, a Proposal for a Council Recommendation on Key Competences for Lifelong Learning (see picture 1) was filed after which the Council of the European Union at the European Parliament confirmed the proposed *Key Competences for Lifelong Learning - A European Reference Framework* on 4 June 2018 (Official Journal of the European Union, 4. 6. 2018, C189). The main difference between the competences that had been adopted in 2006 and the eight key competences for lifelong learning confirmed in 2018 is in the first competence. The latter previously referred to learning one's mother language while now the number one competence is **literacy**: "Literacy is the ability to identify, understand, express, create, and interpret concepts, feelings, facts and opinions in both oral and written forms, using visual, sound/audio and digital materials across disciplines and contexts. It implies the ability to communicate and connect effectively with others, in an appropriate and creative way." (Official Journal of the European Union, C189, 2018, p. 8)



Picture 1: Key competences
Source: Proposal for Council Recommendation on Key Competences for Lifelong Learning, 2018, p. 42.

As regards key competences, one should mention also the competence Cultural awareness and expression, which is equally important for the development of family literacy: "Competence in cultural awareness and expression involves having an understanding of and respect for how ideas and meaning are creatively expressed and communicated in different cultures and through a range of arts

and other cultural forms. It involves being engaged in understanding, developing and expressing one's own ideas and sense of place or role in society in a variety of ways and contexts." (Official Journal of the European Union, C189, 2018, p. 11)

Family literacy can therefore be connected to cultural and arts education. The next section will be focusing on quality children's literature, reading, processing the meaning of what we read, and raising awareness on the meaning of world (children's) literary heritage. All that is going to be illustrated on the example of a picture book by Lila Prap entitled *Once upon… 1001 Stories* (first edition in the Slovenian language from 2005).

Text in picture books and illustrated books

A picture book is a special book format in which the text and the illustration are equally important. In other words only high-quality verbal and visual codes can give added value to this type of books, a prerequisite being that pictures occupy more space than text (otherwise that would be an illustrated book). Owing to particular linguistic rules which are expressed through the story (and correspond to morphological characteristics of literary works) and artistic rules (simultaneous consideration of the visual art language and the specifics of picture-book format), the foundation for a good picture book lies in the interaction between the two communication codes (Haramija and Batič, 2013; Sipe, 1998).

In discussing picture books and illustrated books suitable for children in the pre-reading and early reading periods, there are several vital literary elements to consider, as follows:

1. Literary characters (by role: main, side character; by appearance: human, anthropomorphic, mythological, other).
2. The structure of the text is synthetic in order to allow the child to follow the story from beginning to end without any time lapses.
3. Commonly a third person narrator, only rarely a first person one (Lukens, 2007).
4. Content, themes, and motifs (literary piece components that are normally the subject of discussion).

5. Literary space and time, intertwining of the two into a chronotope (Bahtin, 1982).
6. Stylistic features (study and analysis of the style of text, author, linguistic forms and genres).
7. The course of narration (narratology).
8. Interaction between text and illustration in a picture book or in an illustrated book.

A picture book connects two fields of art and is frequently a child's first contact with literature and visual arts. For a complete understanding of a picture book, the reader needs to have some knowledge of the elements from both fields of art. A professional intermediary (preschool teacher, class teacher, librarian or language - Slovenian or foreign- teacher) needs to know both communication codes, which are a prerequisite for using proper methods and defining proper goals of discussing a picture book. We believe that a professional intermediary can be of great help to parents and other adults that practice family reading with children. In an illustrated book, unlike in a picture book, the story does not evolve through illustrations. In fact the illustrations only shed some light on selected parts of the storyline. In the preschool period illustrated books are perfect for reading in sequels: e.g. stories that feature the same literary character throughout the book, describing its adventures (A. A. Milne: *Winnie the Pooh*) or books that include the same type of text (e.g. *Fairy Tales by Brothers Grimm*).

Criteria for selecting high-quality books for family reading activities:

The quality of a literary work must comprise cognitive, ethical, and aesthetical value, notes Janko Kos in his *Literarna teorija* ('Literary theory') (2001, p. 23-37). Looking merely for an educational goal in reading a text may often lead to moralising, so the message a literary work conveys cannot be a selection criterion in its own right. The chosen text must possess a certain level of linguistic quality rather than be impoverished (or written in a childlike language), but still adapted to the child's level of understanding of the language, that is, the tropes and figures that are the basic component of artistic linguistic creation. The ethical component of a literary work is also important, as a selected text should not cause intolerance due to racial, religious, sexual or other differences between people. When discussing picture books and illustrated books, however, we should also pay attention to the quality of illustrations.

An example of a quality picture book: *Once upon… 1001 Stories* by Lila Prap

Lilijana Praprotnik-Zupančič (1955), better known under her artistic name Lila Prap, is an important creator of original picture books. She has received numerous awards in Slovenia (the most important prize in Slovenia being The Prešeren Fund Award in 2011) and abroad in the field of children's literature. She has published twenty-four books, most of which are picture books. Her books have been translated into over 40 languages. Two of her picture books that were published in other countries are *Why?* and *Animal's International Dictionary*.

Lila Prap's basic poetics is based on word play. The author intentionally breaks phonetic, morphological and/or syntactic laws. Simplification that never slides into banality, playfulness of terminology and nonsense – this last being a source of comicality – are the elements of the author's creativity, an expression of wit that is the quality of her books. Lila Prap's picture books are distinctive for their linguistic and visual properties, by way of which she creates a high-quality type of original picture book aimed at children in the pre-reading and early reading stages.[2]

Once Upon… 1001 Stories (2005) is »a fairy labyrinth« as defined by the author in the reading instructions, for every reader can again and again choose a different story (Prap, 2006, p. 5)[3]: "If you are very curious /…/ you will find many, many stories inside."

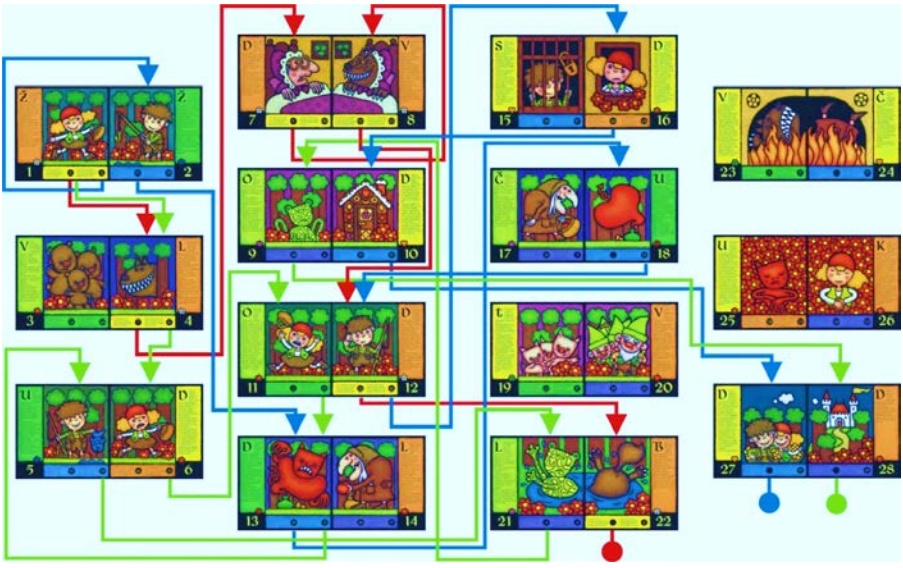
The literary space is shown at the back flyleaf where all fairy tales are merged in one literary space – part wooded land and part meadow with a pond. This imaginary space encompasses the girl's house, the boy's house, the witch's house (with cake-like decorations on the roof and by the doors and window), the prince's castle, the gold mine, grandma's house, the bears' house, and the dwarfs' house. There are pathways between these dwellings with a crossroads by the

[2] In creating for children, Lila Prap is primarily engaged with language or word plays as a specific dimension of nonsense. *Why?* (2002) is a picture book that allows a child to develop his or her own text, which is also the reason why the book has reached such popularity around the world. On the flyleaf, Lila Prap already indicates one possibility of invention: by »crossbreeding«, new animals emerge (first, a new animal comes into being, and then the author draws a half of another animal and names it accordingly) and so: the giraffaroo, walmoney, cameladder, lionsnake, lionoceros, snakegaroo etc. (Haramija, 2012)

[3] This kind of story writing, i.e. by adding new meanings, can also be found in works by other authors, e. g. Gianni Rodari and Raymond Queneaua.

wolf's forest. The illustration also includes some of the literary characters from the book, namely, three bears, three piglets, the wolf, the frog and a dwarf (entering the mine).

The picture book functions as a maze in which a child can chose how the story will continue and when it will end. At the end of each page there are two possible endings that the child needs to choose between and turn to the page written next to the selected ending. Thus, the reader decides on the first two pages which story he or she will read: the one about a cute and kind girl or the one about a naughty and rude boy. The picture book portrays character archetypes: the girl, the boy, the bears, the wolf, the frog, the candy house, the ghost, the witch, the piglets, the dwarf, and the castle (see picture 2). When analysing Prap's illustrations Tomaž Zupančič (2011, p. 87) noted: "Visual messages of her illustrations are apprehensible and thus fully understandable to the child. The child does not read these illustrations as he would read, for example, eventful and detailed illustrations, but rather perceives and feels them, absorbing them all at once."



Picture 2: Some examples of selective reading
Source: Lilijana Praprotnik Zupančič, personal archive.[4]

[4] I would like to thank the author for the shared reading plan and permission to publish it.

The known characters, their unchanged primary features and known literary space give way to a combination of events that follow the typical elements of folk and classical tales: the literary space and time cannot be defined with accuracy, literary characters are black and white, they have positive or negative features (the latter are taken from the primary fairy tale), there are miracles and metamorphoses that happen, the good are rewarded and the bad punished, and the fairy tales have happy endings (Haramija, 2011, p. 109), see table 1.

Table 1: The role of literary characters

Literary character in *Once upon… 1001 stories*	Title of source fairy tale and author	Literary characters in the source fairy take	Motifs used
A good girl	Little Red Riding Hood, brothers Grimm	Little Red Riding Hood, wolf, granny	Here, the entire fairy tale was used: a naïve little girl goes away from home for the first time, meets a wolf, picks flowers, comes to her grandma's and has the famous dialogue about big eyes and mouth. The rescuer here is a boy: the wolf drowns with a stomach full of stones when he wants to quench his thirst.
A naughty boy	None	None	Lila Prap introduced a boy who has several roles (opens the bottle with a genie inside, Hansel, prince, etc.). he is like a red thread or a key connecting the stories. He catches a gold fish which grants wishes, but has no wishes for himself. Instead he wishes for the gold fish to change into a frog.
Three bears	Goldilocks and the Three Bears (originally titled The Story of the Three Bears), folk tale	Goldilocks, father bear, mother bear, baby bear	A bear family returns from a stroll and the largest one discovers someone was eating his porridge, the middle one realizes someone was sitting in his chair, while the youngest finds a sleeping girl in his little bed. The girl wakes up just in time to escape from the den to the woods.

A frog	The Frog Prince, brothers Grimm	Princess, frog-prince	A girl drops her bracelet into a pond and promises to kiss the frog in exchange for the returned bracelet. The girl tries to get out of it but in the end kisses the frog who turns into a prince and they ride to his castle, get married, and live happily ever after.
A beast	Beauty and the Beast, Charles Perrault	Father, three daughters,	The third daughter, who only wishes a bunch of flowers from her father (unlike her elder sisters who are really greedy), is willing to fulfil her father's promise to the beast who saved him from the forest. She goes to the beast's castle where her love and devotion save the beast from a spell, so the latter changes back into a prince (he was bewitched by an evil witch). They marry and live in the castle happily ever after.
A witch, a girl, a boy	Hansel and Gretel, brothers Grimm	Wicked witch (very old woman), Hansel, Gretel, father and his wife (spiteful woman)	A boy and a girl find a cottage made entirely of candy. A witch lures them into the house, capturing and locking the boy and making the girl do all household chores. The witch hopes to eat the boy, but the girl plucks up the courage and pushes the witch into a boiling cauldron of water. In the end, she saves the boy and they return home.
An evil genie	Genie from the bottle; more versions of a folk tale (*One Thousand and One Nights*), brothers Grimm	Genie, a man (fisherman, lumberjack)	The most familiar motif of human tricking a genie is used here: when the boy (lumberjack, fisherman) releases the genie from the bottle, the latter wants to kill him from revenge due to being imprisoned for so many centuries. The genie explains that he would have rewarded his rescuer ages ago but since he was captured for so long, he wants to kill his saviour. The boy's dying wish is to see how such a huge genie fits into such a small bottle.

			The cocky genie of course shows him how but the boy closes the bottle with the genie inside. In some versions, the boy releases the genie again, after which he grants him his wishes.
A sad girl	Rapunzel, brothers Grimm	Rapunzel, her father, wicked witch, prince	The motif used here is that of a girl closed in a castle tower. A boy climbs to her on a fishing line, and she hides him from the evil genie (rather than from a witch as in the original version).
Three piglets	The Tree Little Pigs, an English folk tale	Three pigs, wolf	The key elements from the fairy tale are used: building of the houses – the first pig using straw, the second branches, and the third rocks. Wolf ruins the first two houses but cannot blow away the third one. When he tries to descend down the chimney, the pigs make a fire, the wolf slips and falls into a pot of soup boiling in the hearth.
Dwarfs, a girl	Snow White and the Seven Dwarfs, brothers Grimm	Snow White, seven dwarfs, new queen	When they get home, the dwarfs find a sleeping girl. The story includes the scene with the poisoned apple which the queen i.e. the wicked witch offers to the girl. The girl drops down like she was dead but is then saved by the prince. Lila Prap used the original ending – the prince saves the girl, they marry and live happily ever after – at the end of her book (reading will take the reader to the same closing page as in the story about the frog and the girl and the one about the genie and the girl).

The story finishes when the child chooses the black dot that does not lead him to the next page of the book. Each story ends with an instruction (Prap, 2006, p. 18, 22, 24, 27, 28): "Close the book and turn to the back cover." On the back-cover Lila Prap depicted a black hole to prevent children from being afraid: "This black hole swallows all the stories, including their wolves, witches and monsters. If you would like to meet them again, turn the book and open it on the first page.

They will all be very happy to crawl out of the black hole and join you in a new reading adventure." (Prap, 2006, back-cover)

Despite the title alluding to the *One Thousand and One Nights* (or *The Book of the Thousand Nights and a Night*), the tales and characters do not have a direct bearing on the collection (genie in the bottle being the only exception), while in metaphorical terms, the title is more than legitimate, since the child considering the *One Thousand and One Nights* can build his own stories based on his or her prior knowledge of the original fairy tales.

4 Conclusion

The herein introduced *Once upon… 1001 Stories* by Lila Prap is showcased as an excellent book for family reading, encouraging selective reading (thus resembling information-seeking reading more than literary reading). The child creates his or her own story through his or her choices, but since several generations take part in the family reading activity, the adults will easily recognise well-known motifs from the world literature, given that the author had chosen canon fairy tales of worldwide recognition. Naturally, the stories in this picture book can be created without knowing the canon stories, but for a child to logically follow the story he or she is composing through his or her choices and to have fun recognising famous literary characters and events, it is outstanding if her or she is in fact familiar with the original texts. As part of their family reading, parents and children could find the picture books with the original stories (or collections comprising those stories) and then reread *Once upon… 1001 Stories*. They might compare the literary characters in the original text against those in the Prap's picture book, describe different literary spaces, the appearance of literary characters, their personalities and possible relations between appearance and personality traits (e.g. ugly characters are mean).

In addition to family literacy, which provides a suitable environment for a child to learn about belletristic and informative literature, literary education in kindergarten is equally important. The teacher, being a professional agent of literature, can provide considerable amount of support to the less skilled parents in choosing quality reading material. Developing family reading alongside canon texts (which parents know and can thus pass their knowledge on to children) can be very fun. This is particularly true of the book showcased in this paper, where

literary characters are taken from folk tales and classic fairy tales but are mixed and matched so they meet literary characters from other fairy tales (e.g. the Little Red Riding Hood kisses the enchanted frog, Rapunzel visits the house of the three bears). In a playful way, children are introduced to canon fairy tales that are part of the cultural heritage of humankind (brothers Grimm, folk tales).

References

Bahtin, M. M. (1982). *Teorija romana*. Ljubljana: Cankarjeva založba.

Carpentieri, J., Fairfax-Cholmeley, K., Litster, J., Vorhaus, J. (2011). *Family literacy in Europe: using parental support initiatives to enhance early literacy development*. London: NRDC, Institute of Education.

Haramija, D. (2011). Lila Prap: The Children's Literature of Lila Prap (Lilijana Praprotnik-Zupančič). In A. Domjan, D. Haramija, T. Pregl Kobe & T. Zupančič: *A Storyteller Who Thinks in Images and Writes in Signs* (p. 99–139). Celje: Celeia Institute, Centre of Contemporary Art, Gallery of Contemporary Art.

Haramija, D. (2012). *Nagrajene pisave*. Murska Sobota: Franc-Franc.

Haramija, D. and Batič J. (2013): *Poetika slikanice*. Murska Sobota: Franc-Franc.

Institute of Education, 2011: *Family literacy in Europe: using parental support initiatives to enhance early literacy development*. London. Retrieved December 29, 2018, from http://ec.europa.eu/assets/eac/education/policy/school/doc/family-literacy_en.pdf

Kos, Janko (2001): *Literarna teorija*. Ljubljana: DZS.

Lukens, Rebecca J. (2007): *Children's Literature*. Boston, New York, San Francisco: Pearson.

Official Journal of the European Union, C189, 2018, *Key Competences for Lifelong Learning a European Reference Framework*. Retrieved December 24, 2018, from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&rid=7.

100 Classic Stories (2007). Edited by Vic Parker. Bardfield End Green (UK): Miles Kelly Publishing.

Prap, L. (2005). *1001 pravljica*. Ljubljana: Mladinska knjiga.

Prap, L. (2006). *Once Upon… 1001 Stories*. La Jolla (California): Kane/Miller Book Publishers.

Proposal for a Council Recommendation on Key Competences for Lifelong Learning. Retrieved December 28, 2018, from http://data.consilium.europa.eu/doc/document/ST-5464-2018-ADD-2/EN/pdf.

Sipe, R. L. (1998). How Picture Books Work: A Semiotically Framed Theory of text-Picture Relationships. *Children's Literature in Education*, *29* (2), 97–108.

Smernice za kulturno-umetnostno vzgojo v izobraževanju, 2009. Ljubljana: Ministrstvo za šolstvo in šport. Retrieved December 14, 2018, from http://www.mizs.gov.si/fileadmin/mizs.gov.si/pageuploads/podrocje/os/devetletka/program_drugo/Smernice_za_kulturno_umetnostno_vzgojo.pdf.

United Nations Educational, Scientific and Cultural Organization, 2006: *Road Map for Arts Education*. http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/CLT/pdf/Arts_Edu_RoadMap_en.pdf.

Zupančič, T. (2011). Lilijana Praprotnik-Zupančič's Artistic World. In A. Domjan, D. Haramija, T. Pregl Kobe & T. Zupančič: *A Storyteller Who Thinks in Images and Writes in Signs* (p. 82–95). Celje: Celeia Institute, Centre of Contemporary Art, Gallery of Contemporary Art.

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION
AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Preschool Children's Understanding of Animate and Inanimate: Methodical Suggestions

ALEKSANDRA ŠINDIĆ, TAMARA PRIBIŠEV BELESLIN
& MARCELA BATISTIČ ZOREC

Abstract To set pedagogical and methodical guidelines for introducing children to the animate and inanimate nature, empirical research was conducted on a sample of 100 kindergarten children from Bosnia and Herzegovina. The aim of the research was to explore the understanding of concepts animate and inanimate in preschool age. Research instrument contains twenty items. Each child had to decide whether the thing or being on a photo is animate and to explain why he or she thinks so. The results indicates that for children it is easier to understand animate than inanimate. The analysis of responses noted pre-causal and some causal explanations, which indicates that the phase in the development of thinking must not be firmly tied to a certain age. The formation of the concept of animate and inanimate is easier when children have more experiences then with animated character and plants. Study results are important as a knowledge for preschool teachers, to understand these processes in children they work with, as well as, to give some implications how to scaffold their intellectual development. Thus, from the pedagogical and methodical points of view, few strategies for developing children's thinking were emphasized.

Keywords: • preschool children • concepts • animate • inanimate • methodical strategies •

CORRESPONDENCE ADDRESS: Aleksandra Šindić, PhD, Associate Professor, University of Banja Luka, Faculty of Philosophy, Banja Luka, Bosnia and Herzegovina, e-mail: aleksandra.sindic-radic@ff.unibl.org. Tamara Pribišev Beleslin, PhD, Associate Professor, University of Banja Luka, Faculty of Philosophy, Banja Luka, Bosnia and Herzegovina, e-mail: tamara.pribisev-beleslin@ff.unibl.org. Marcela Batistič Zorec, Assistant Professor, University of Ljubljana, Faculty of Education, Ljubljana, Slovenia, e-mail: marcela.batistic-zorec@pef.uni-lj.si.

DOI https://doi.org/10.18690/978-961-286-269-5.8 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

We live in a world where alienation from nature has dramatically increased. Today's child, although exposed by a number of information and sensory stimuli, has to continue to invest the efforts to understand the concepts of everyday life. A preschool child meets the world primarily on the perceptual-sensory basis, so early learning is empirical in its nature, with intensive emotional and social involvement. In order to develop adequate notions about the world, it is important to gain enough experiences and favourable opportunities for learning. Thus, the question is whether a child who lives in contemporary world, is capable to adequately meet nature, today, in the era of alienation from her (Dickinson, 2013; Louv, 2008). Starting from this point, we sought to explore young child's understanding of the world he is surrounded by, with a specific focus on understanding the concepts of animate and inanimate, to identify what are the opportunities for early learning in this field, and to propose some pedagogical and methodical suggestions for preschool teachers.

The child classifies and connects the experiences and representations about the world, building it within his own systems of a knowledge, concepts and "theories". The concepts represent a set of general and essential properties of a certain class of objects and phenomena (Gutović, 2006). In development of concepts, we often witness a child's inability to achieve a comprehensive understanding of something that is not just sensually and perceptually available, and directly knowledgeable from the experiences. Although, processes of the observation, rearranging the personal experiences, and processing the memories of them, but also the processes of learning, problem solving, creative processes, are included into the formation of the concepts, as Stojaković (2012) noted. These are the reasons why children's concepts at preschool age are not differentiated, but superficial and unclearly crystallized (Gutović, 2006). Understanding the essence of the concepts of animate and inanimate exceeds specific sensory data. Therefore, distinguishing the living from the non-living, animate from inanimate (Gelman & Opfer, 2002), is a basis for the development of conceptual thinking, ability to build categories and establish understanding of their hierarchy, as well as, to understand the causality and reciprocal actions.

Method

In order to effectively support the child's intellectual development and formation of children's theories about the world they are surrounded with, we need to understand the existence of a contradiction between the perceptions of what is concrete and obvious, and which belongs to the immediate child's experiences and activities, from that which is invisible and abstract, which is based on generalisation, abstraction, causality and construction of the concepts. The aim of our empirical, quantitative and qualitative research was to investigate and to shed a light on understanding the concepts of animate and inanimate in young children.

Our research questions were:

1. What is a connection between the children's age and the effectiveness in determining what is alive and what is inanimate?
2. Is it easier for preschool children to determinate and define some groups of beings and objects as animate or inanimate?
3. How the children in early childhood explained that something is animate or inanimate?

Research variables were: the level of understanding of the concept of animate and inanimate, and age of the child.

We are constructed *the instrument* (*Animate and Inanimate*) independently for the research. It contains twenty items, each item consists of photograph representing a being (animate) or a thing (inanimate), one closed question "*Is it alive or non-alive?"*, and one open question which asks the child to give an explanation for each photo. Special attention was given to the children's explanations as the qualitative data and insights. Examiners, (45 female students) were on their third-year of the Study Program of Preschool Education on Faculty of Philosophy, University of Banja Luka, who were on their methodical practice in academic year 2018/2019, under the supervision of two teachers and a coordinator for methodical practice, as well as a student of a masters study program.

The study *sample* included 100 children who attended public preschool institution Centre for Preschool Education in Banja Luka, ages 3 to 6 years (47 boys and 53 girls; 31 of four-year-old children, 34 of five-year-olds and 35 six-year-olds).

Levels of the data processing. Descriptive statistics (frequencies and percentages), Kolmogorov-Smirnov's test for parametric estimation of the investigated variables was performed, Spearman's rank correlation coefficient was determinated between the age of children and their achievements on the test, and chi-square test was used for the verification of a statistically significant difference between the variables that does not satisfy the conditions for the application of a parametric tests (for the score points achieved on the test for the identification of living beings, and for non-living things).

Qualitative data were, through typological analysis (Hatch, 2002), described according to the similarities and differences with respect to specified categories based on some theoretical frameworks: (1) the theoretical understanding of animism in preschool children's thinking, (2) distinguishing the aspects of perceptual properties of objects: featural and dynamic aspects (Gelman & Opfer, 2002), and (3) the theoretical understanding of causality in children. Interpretation of qualitative results, shaped by the categories, were covered with theoretical explanations and connected with presented frameworks. Children's answers were noted as their original statements, in their own words, without noticing other data for the children. In some cases, the chronological age was emphasised, if it was important for analysis and conclusions. Analysis was not focused on similarities and differences in children answers based on their gender or individual characteristics of each child in the research sample.

Results and interpretation

The collected data were grouped according to the criteria of animate and inanimate and according to the categories: babies (human and animal), plants (living and harvested), scenery dolls, toys, object that are created by human and inanimate nature (natural phenomena). Out of a possible 20 points, the minimum achieved score was 7, and the maximum score recorded was 19. Analysing the correct answers for each item, achievement ranges from 45% to 98% (Table 1).

Table 1: A score achieved on each item individually, and the percentage of correct answers

No.	Content of a photography presented a concept	*f*	*f%*
1.	A foal (alive)	92	92%
2.	Cow Milka chocolate	46	46%
3.	Doll Barbie	83	83%
4.	A house	86	86%
5.	A tree in a wood	45	45%
6.	Children on the field	95	95%
7.	A river	64	64%
8.	Fruits	68	68%
9.	A young dog (alive)	98	98%
10.	A dog (toy)	90	90%
11.	A cat (alive)	94	94%
12.	A cat (toy)	86	86%
13.	A mouse (toy)	65	65%
14.	Mickey Mouse	64	64%
15.	Rocking horse (toy)	89	89%
16.	A bird (alive)	95	95%
17.	An air plane	58	58%
18.	Flowers in a vase	53	53%
19.	Flowers on the field	47	47%
20.	Scenery dolls	73	73%

Using Kolmogorov-Smirnov's test it was found that variables "level of development of animate-inanimate concept" were not spread normally, thus, non-parametric statistical evaluations were used.

Correlation between age and accuracy of distinguishing the concepts animate and inanimate. The Spearman's rank correlation coefficient was calculated, and a medium positive and statistically significant correlation ($\varrho = 0{,}304$, $p = 0{,}002$) was found between the age of children and the level of achievements /scores on the oral test (Table 2).

Table 2: Correlation between the age of children and achieved score on the oral test - Spearman's rank correlation coefficient

		The children's age
The children's age	ϱ	1,000
	P	
Score	ϱ	0,304**
	p	0,002

Note:*Correlation is statistically significant on the level 0,05 (2-tailed), **Correlation is statistically significant on the level 0,01 (2-tailed).

In other words, there is a tendency that, six years old children show better understanding of the concepts of animate-inanimate, and also, achieve higher scores on the test. This finding supports the facts that intense development of concepts in early childhood has its roots in acquisition and processing more complex experiences, within the opportunities for learning and contacts with adults and environments (Gutović 2006). Errors which children make when distinguishing living beings from inanimate objects decrease with age (Gelman & Opfer, 2002).

The accuracy of distinguishing the concepts animate and inanimate depending on the content of the concepts. It was found that children more accurately answered to the questions that were related to living beings (80.86% accuracy), while issues relating to inanimate were answered correctly in 71.08 % of the cases (Table 3). Pearson's chi-square (χ^2=68,612; p=0,002), showed the statistically significant differences. In general, children with greater accuracy estimated that something is animate in contrast to estimation of inanimate.

Table 3: Score and the percentage of correct answers for the animate and inanimate items

Grouping criteria	*N*	*f*	*f%*
Living beings (animate)	7	566	80,86%
Non-living objects (inanimate)	13	924	71,08%

Note: N is the number of items in each group, f - correct answers

A young child often includes his own thoughts and intentions into the objects and phenomena of objective reality, and animates them (Gutović, 2006), and this way of interpretation of child's thinking about the world is called animism. A child tends to give motion and living features to both, animate and inanimate, and to determine it as alive. So, children provided more answers for animate (80,86% correct) than for inanimate (71,08% correct) (Table 3).

Table 4: Score and the percentage of correct answers within the categories

Grouping criteria	*N*	*f*	*f%*
Babies of human and animals (alive)	5	474	94,80%
Animated characters and characters from puppet theatre	3	183	61%
Toys	5	413	82,6%
Plants (alive and harvested)	4	213	53,25%
Object made by humans and non-alive nature	3	208	69,33%

Note: N is the number of items in each group, f-correct answers

Table 4 shows that the highest score children made within the categories alive human babies, animal babies and toys. This is, partly, in accordance with the previous findings, that the children at the age of 4 to 6 years create less animistic errors in relation to rocks, dolls, household objects, vehicles, but make more errors in relation to the natural phenomena (Gelman & Opfer, 2002).

Qualitative analysis of children's responses: how do children understand what is animate and what is inanimate?

Using qualitative method, and typological analysis (Hatch, 2002) described earlier, analysing the children's opinions on what is alive or not, we noticed a lot of contradictions, syncretism in children's thoughts, pre-causal interpretations of reality, unclear formed concepts permeated with animism. All four phases described as the animism could be found, but also, the signs in children's knowledge that living being can be static, inactive, immobile or unaware but alive, and that, animate has ability and features needed to arise, feed, breathe, develop, reproduce, die. Results, that confirm these insights, are presented, and described with theoretical explanations, on one hand, and children's thoughts and understandings, on the other.

Causality in children's responses. Analysis of qualitative data shows that the pre-causal opinions are dominated, although some answers can be defined as a recognition of a phenomenon as a scientific concept. According to Piaget's theory, at the stage of intuitive thinking (from 4 to 7 years), animistic interpretation of causality means that, inanimate objects are attributed to the significance of living beings (Batistič Zorec, 2013). Obtained responses were broken down in groups within a three degree of understanding of causality:

- The first degree of interpretation of causality (from birth to 8), is characterized by syncretism in thoughts, which combines incompatible things. Children give phenomenological, finalistic and magical explanations. Based on phenomenological explanation, child explains the regularities in physical and psychological world by the known properties of objects or beings, standing out some featural aspects of inanimate objects (Gelman & Opfer, 2002). Some examples of typical children's answers: *The cow is alive because it is purple*. In finalistic explanation, a child explains all legality with specific purpose: *The cow is alive to give milk*. And, in magical interpretation child explains certain things and legality as a will of the people: *The house is alive because we live in it*.
- The second degree of causal interpretations (from 4 to 11 years) includes artificialistic and animistic thinking. Animism goes through four stages. Within the first phase, the child concludes that something is alive if it works, or has some kind of agency. Children can determinate concepts based on dynamic features such as agency or intentionality: *Children are alive because they do what they want.* The second phase of animism (6-7 years) is reflected in the conclusion that something is alive because it moves and has a motion: *Air plane is alive because it flies*. In the third stage, the child thinks that something is alive if it runs by its own efforts, that it has self-directed goals. Children attached inanimate objects to their contingency of behaviour as dynamic perceptual aspects: *A tree is not alive because it's not moving*. The fourth phase of animism is characterised by the intention of the child to "categorize" some groups of things or being that are alive, and others are not (e.g., people and animals are alive, plants are not). For the plants, one child says: *It isn't alive because it is not an animal*.

– In the third degree of understanding the causality (between 10 and 11 years), children take in consideration actual physical and natural causes. In our sample, this stage of understanding of causality is less common, although it is found in some children's responses, that are closer to a well-established concepts. An example for our study: *The bird is alive because it breathes.*

These findings, once again, highlight the fact that Piaget's interpretation of causality can not be accepted as a whole, especially, understanding that causality is strictly related to the age or maturity. Gradualism in passing through the animistic stage and binding it to a certain age, as an abstract category, is not feasible (see more Gutović, 2006). Thus, development of children's theories about the world they live in has also its own individual flows, and by favour of experiences children gained, too, among them there could be found the huge individual differences (Chaille & Britain, 2003).

Distinctiveness of children's conclusion about the living beings, objects made by humans, toys, natural phenomena and plants. Children coped the best with the assessment of animals' and human babies as alive beings (see Table 4 and Table 1). Typical responses can be found in all categories of children's animistic thought. In phenomenological interpretation: *The horse is alive because it is beautiful;* and inanimistic explanation: *These are children, alive, because they are walking.*

Explanations that distinguish alive and non-alive mentioning objectivity and clarity of the concept can be divided into three groups: (1) Identification of belonging to a group, that is, the category of living beings: *The dog is alive because he is an animal*; (2) identification of some organs characteristic for living beings: *The dog is alive because it has eyes, teeth, paws;* (3) Identification of the functions that have and/or performed by living beings: *The cat is alive because hunts a mouse, drinks milk, sleeps, eats whatever she wants.*

Another group of successful responses was related to the picture of toys as *inanimate objects created by humans* (Table 4). The most of correct answers, that toys are not alive, were supported by classifying the toys in the category of inanimate objects, but also, animistic explanations could be found (e.g. *Toys do not move)*. Some children noticed that they do not eat, do not have a heart, do not

breathe. The successful observation of inanimate nature of toys was contributed by the huge children's experiences in "if as..." and "make-believe" symbolic play.

Children resolved tasks with concepts of *inanimate natural phenomena and human creations* with 69.33% accuracy (Table 4). Answers to the open questions belong to (1) animistic interpretations: *The house is not alive because nowhere walks, it just stands;* and (2) objective insights: *It's not breathing.* Answers were supported also with phenomenological statements: *The house is alive because there is someone sleeping in it.*

Children's conclusions about the *inanimate characters*, as animated film hero (Mickey Mouse), an advertisement image (a cow Milka), and characters from the puppet theatre (scenery dolls representing a wolf and a boy) were resolved with 61% correct responses (Table 4). Answers indicating a good estimation, approaching to the objectiveness were: *Not alive, lives only in cartoons.* Some of the wrong answers indicate that children do not yet have firmly established the boundary between fantasy and reality, maybe, because of the lack of real experiences, but also of shiny attractiveness of virtual stimuli: *Mickey Mouse is alive, has a house in Paris.*

The inflated balloon of cow Milka, even though it represents a kind of toy, has caused the greatest confusion in children, who perceived a symbol as an animate being. Answers that claim Milka is not alive, mainly arise from real insights. For example: *Milka is not alive because it is plastic. Cow of that color doesn't exist. This cow produces chocolate and therefore it is not alive, standing only at the factory.*

Incorrect answers were explained in different ways. In some, the phenomenological and animistic interpretations could be seen, children made mistakes for other reasons. Here are some answers: *She is alive because it feeds her baby with milk and grazes to the grass. Because she is a living being. She is alive because gives milk, that is a chocolate cow.*

Some answers can be found in the virtual world of modern electronic media, within which, the young children are exposed with commercials and advertisements. These contents are not designed to educate, to transfer objective information, and to shape a real picture of the world, but rather to sell a product and earn profit. Advertising is very subtle, beautifully designed, interesting, more

perfect, and intend to manipulate (Zgrabljić Rotar, 2005). On the other hand, research shows that, if some affective elements are included into an experiment (e.g. a monster, or in this case, the desire for a product that gives pleasure) the children's ability to distinguish real and fantasy can be compromised (Douglas, 2011). Therefore, non-educative virtual contents (commercials) could cause a confusion and create mistakes and wrong perception in many children, therefore bringing the errors in thinking, slowing down the development of intellectual processes, and can make the formation of concept more complex, shaping unrealistic ideas about the world at an early age.

Children's conclusions about plants (either live and those harvested i.e., non-living) brought the highest number of errors, and were the most difficult to distinguish the alive from non-alive. Those answers had a 53.25% accuracy (Table 4). A tree and the flowers in the garden were recognized as alive in less than a half of the children in the sample (45% and 47%). That the fruit on a plate is inanimate answered 68% of children, and that the flowers in a vase is no longer alive was said by 53% of all children (Table 1). In the analysis of children's explanations, it was noted that the animistic conception was crucial to a lack of understanding of the concept of alive in plants. On the other hand, if they know that plants are alive, for children, plants remain alive even when they are picked. In other words, it seems that, everything that is related to life cycles of plants remains clouded in mystery.

We suppose that today's children would shape better understanding of the life of plants if they lived more surrounded by vegetation, gardens, orchards and forests. Immersed within the nature and it's cycles, children can learn about plants and spontaneously form a realistic concepts (Šindić, 2018). In the modern world, as an attempt to overcome "the deficit of nature", some innovative preschool approaches are developed, i.e. forest schools, ecological kindergartens, kindergartens in nature, nursery farms and the like (Knight, 2009; Lepičnik Vodopivec, 2013; Šindić, 2018).

Conclusion

The study was conducted with the aim to understand the nature of the concepts of animate and inanimate in children aged 4 to 6. First, the Spearman's rank correlation coefficient (positive and statistically significant) showed correlation between the score on the test and children's age. If the children are older, it is more likely that they will accurately and realistically assesses whether something is alive or not. Children showed greater accuracy in distinguishing the animate beings than inanimate objects. Further, children made less errors in the evaluation of animals (94% accuracy) and toys (82.6%), and more in the assessment of virtual heroes (61%) and plants (53.25%).

By grouping the answers according to stages of causality, the diversity in children's explanations could be seen. Some answers come from pre-causal thoughts, and some based on causal thinking. In some answers, we found elements of the phenomenological, finalistic and/or magical understanding and some answers are more close to reality. The formation of the concept of animate and inanimate has its own flow, it is individually oriented, and we believe it is also connected to experiences and education, not just based on maturation. Although the age is one of the important factors that indicates the development of the concept, it is not firmly tied to a certain age. So, based on these contextual knowledge which we came to in our study, we believe that factors which hamper the formation the concepts of animate and inanimate, are universal (specificities of children opinions and thinking process, perception, limited experience) and specific for modern childhood (separation from nature, inadequate media content).

Practical implications for scaffolding the children's formation of concepts of animate and inanimate from methodical point of view

From the pedagogical and methodical points of view, preschool teachers should be aware of a number of factors, in order to support formation of the stable concepts in systematic, comprehensive and holistic way. Factors that affect the confusion of children's understanding, and have agency to shape their personal theories about the world they are surrounded with, but which, also, can cause hindering the process of crystallization of these concepts, may be *universal* and *specific*. Universal factors are present in epochs of human society as the

characteristics of children's thinking, modesty of educational and developmentally appropriate experiences and peculiarities of perception. The specific factors refer to present time, such as alienation from nature and inadequate virtual contents that are not in the service of forming a realistic picture of the world. To avoid the latter, it is important to design methodical approaches in preschool programs that encourage children to live with nature and broad spectrum of educational contents connected with nature (Lepičnik Vodopivec, 2013).

We believe that the child's ability to distinguish the animate and inanimate is fundamental for the development of future intellectual processes, especially for the understanding of causality, reasoning and categorization. It is seen as "skeletal principle" children possess, that organize experience, direct attention, guide learning, and promote conceptual coherence" (Gelman & Opfer, 2002), so special attention should be focused to the scaffolding of this mental ability within the educational context.

Through play activities, interactive encounters in the play, and within the initiated activities based on the children's choices, preschool teacher should encourage children to enter into what is called "a passage of intellectual search" (Paley, 1988, as cited in Lindon, 2012, p. 166). That is, "sustained conversation led by children's own questions, in which they work to make sense of an event or idea" (Lindon, 2012, p. 168). In-directive methodical strategies can provide the children opportunities to search for information and build their own theories. Such strategies are free conversation with other children, play and play-like activities, supported by teachers with various roles that deepen and maintain the play in the longer period. Children should be also given more time to talk freely about their knowledge in cooperative atmosphere of symbolic play. Therefore, listening to themselves and others is important in searching for information, knowledge and assumptions. This model of intellectual exchanges is highly recommended, bearing in mind that in class, children have different levels of development of concepts, theories and understandings of the phenomena. Some children can have just minimal knowledge, almost no experience about something, while the other can have a very real and "close-to-adults" theories about the same phenomenon (Chaille & Britain, 2003). A similar strategy is "sustained shared thinking" (Lindon, 2012; Sylva, Melhuish, Sammons et al., 2003), which implies that the teacher, when a child expresses initiative, is

involved in a conversation with a child or a small group of children about what the child is doing, thinking and talking about. Adult, with specific questions, deepens the perspective of the child about what is the current focus of learner (Lindon, 2012).

There is also a need for adjustment of educational work towards enabling the learning opportunities in direct contact with nature and overcoming the problem of "deficit of nature". Today's children, it seems, harder than previous generations, form the real concepts and ideas about the world around them, losing direct contact with it, and get more detailed, but indirect information about the nature through modern media. For the further research it would be interesting to study differences between the generations' knowledge of those concepts connected with the historic characteristics of childhood.

References

Batistič Zorec, M. (2013). *Teorije v razvojni psihologiji.* [Theories in developmental psychology]. Ljubljana: Pedagoška fakulteta.

Chaille, C., Britain, L. (2003). *The young child as scientist. A constructivistic approach to early childhood science education.* Boston-New York-San Francisco: Pearson Education, Inc.

Dickinson, E. (2013). The misdiagnosis: Rethinking "Nature-deficit disorder". *Environmental Communication: A Journal of Nature and Culture, 7*(3). 315-335. DOI:10.1080/17524032.2013.802704

Douglas, D. (2011). *Child development. A practitioner's guide. (3rd Ed.).* New York - London: The Guilford Press.

Gelman, S. A., Opfer, J. E. (2002). Development of the animate – inanimate distinction. In U. Goswami (Ed.), *Blackwell handbook of childhood cognitive development* (pp. 151-166). Malden - Oxford - Carlton - Berlin: Blackwell Publishers.

Gutović, V. (2006). *Razvojna psihologija.* [Developmental psychology]. Banja Luka: Univerzitet u Banjoj Luci. Fakultet za fizičku kulturu i sport.

Hatch, J. A. (2002). *Doing qualitative research in educational settings.* Albany: State University of New York Press.

Knight, S. (2009). Forest schools and outdoor learning in the early years. London: SAGE Publications Ltd.

Lepičnik Vodopivec, J. (2013). Od okoljske vzgoje do vzgoje za trajnostno prihodnost v vrtcu. [From environmental education to education for a sustainable future in kindergarten]. Koper: Univerzitetna Založba Annales.

Lindon, J. (2012). *Understanding child development 0-8*. London: Hodder Education.

Louv, R. (2008). *Last child in the woods: Saving our children form nature-deficit disorder.* Chapel Hill, NC: Algonquin Books.

Stojaković, P. (2012). *Prvih šest godina.* [The first six years]. Banja Luka: Univerzitet u Banjoj Luci, Filozofski fakultet.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., Taggart, B., & Elliot, K. (2003). The Effective Provision of Pre-School Education (EPPE) Project: Findings from the pre-school period. Research Brief, RBX15-03. Retrieved from: http://www.ioe.ac.uk/RB_summary_findings_from_pre-school(1).pdf

Šindić, A. (2018). *Upoznavanje predškolske djece s okolinom i društvenom sredinom* [Introducing the preschool children with environment and social world]. Banja Luka: Univerzitet u Banjoj Luci, Filozofski fakultet.

Zgrabljić Rotar, N. (2005). *Medijska pismenost i civilno društvo.* [Media literacy and civil society]. Sarajevo: Media Centar.

REPORTS

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Service-learning at School

PABLO RUIZ ESTÉVEZ

Abstract Service-Learning is an educational paradigm focused on creating knowledge with students that in turn will make a change in their environment. It is a pro-social point of view where the main goal is getting significant learning with a practical method. It does not mean that students have to leave the classroom work apart, but they have to use it in a more efficient and practical way. Therefore, the learning experience becomes a great opportunity to improve as a person, from the teacher to the students. This report will show an actual experience of service-learning and the impact of this experience in vocational education students of Early Years Education.

Keywords: • early years education • active education • solidarity • vocational training • child cancer •

CORRESPONDENCE ADDRESS: Pablo Ruiz Estévez, ERGOS SCA, Seville, Spain, e-mail: Internacional.ergos@gmail.com.

DOI https://doi.org/10.18690/978-961-286-269-5.9 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

Year after year, students face the same subjects, in the same classrooms, finding the same problems and realising, after all, that they have learn some content which are hardly used in their professional lives (Francisco Amat, & Moliner Miravet, 2010). On the other hand, we have a big distance between school life and social life. School and community often cohabitate in the same system, but they have little or no relationship between them. School is about school matters, community is about living the life how it is supposed to be. And that is how it is, without a common core, a place where community and school can find their way to improve by doing things together (García & García, 2015).

In order to set a difference and make this gap between school and life smaller, there is a new educational paradigm called Service-Learning. The main goal of Service-Learning is to create a real approach of school and community life, which provides the students the opportunity to test their skills and content learnt at school in an actual environment, where they create their own projects and have a chance to make a difference in their environment by using the tools that they have learnt at school (Puig, Batlle, Bosch & Palos, 2007).

Service-Learning is not tied to strict rules. Students choose the actions that should take place, and the reason for doing them and not others. The role of the teacher is as a facilitator, who guides their students, but are not the leader of the projects. Students must feel that every decision and every action that takes place is because of them. Students must feel that they are the ones that are in charge, and they are the ones that are evolving and improving a part of their world with their knowledge, attitude, skills and actions. Giving the opportunity to express themselves empowers students who are not used to participating in regular classes. Students who do not get good grades, can get a moral boost when they realize that the actually know how to do things, and that every subject makes sense when it is applied to real life (Puig, Batlle, Bosch & Palos, 2007).

This educational paradigm is focused in the opportunity of getting (Puig et al., 2007):

- Basic competences: Every competence of the school curricula are used in improving the environment, emphasizing social competence and personal autonomy.
- Pro-social values and attitudes: By stimulating effort, responsibility and commitment.
- Life lasting skills: Improving social skills, and the abilities of participating in social life in a useful way.

This way, we can say that Service-Learning is useful for students of every school stage, improving their motivation, their grades, and making their learning experience more significant while they improve their personal and social development. It is also very remarkable for teachers, making easier for them assessing the basic competences, the social climate of the classroom and improving the bilateral relationship between school and society. And of course, it is a great opportunity for social organisations and for society, because students are learning, improving and developing themselves while they are improving and developing their area (de Hevia, 2016). Everybody can take advantage of this situation.

Implementation of service-learning in Ergos center

Ergos is a vocational education center. There are many different educational modules such as: Physical education, Nutrition, Social inclusion, Pharmacy and Early Years Education. Most of the students in Ergos are about 18 years old, some younger, and some older. For many of them, this is their last step before joining the work life, and many of them have never had the chance of having the experience of testing their skills in a real work environment before. In this school, the main goal is to create efficient, problem-solving, connected-to-reality people, whose academic and social skills allow them to do the best job they can get. That is why practical situations in actual work placements are often carried out by them. On the other hand, Ergos is not only concerned in creating great professionals, but also great people, caring and environmentally focused. This is the reason of adopting the Service-Learning method, created by Roser Batlle. It is a practical paradigm, concerned in the positive application of the curricula in

developing the community. This way, while they seize the different subjects, they apply them in the social development of the needs that they can find in their surrounding area, making great efforts to make a change, creating a difference with their actions (Del Campo, 2012).

This method has many advantages for Ergos teachers **(**Tejada, 2013):

- Allows them to share information and practices with students of different modules, creating a community and a great team building between them.
- Gives them the chance of evaluating subjects in a more realistic way, colder to what they are going to do in their future work-life.
- Gives the students the chance of choosing the contents that they want to work with, giving them more importance, and creating a new way of teaching, not as a leader, but as an assessor.

Once students get used to this way of working, they cannot step back from it. They are engaged with creating community and making differences in their lives and their neighborhood. It is an emotional and life lasting way of learning.

Last year, Ergos created the project APS INTERCENTRO. Some early years education students, because of some personal events, decided to create a small campaign to create social awareness about cancer in early years. It started as an information campaign. A small group of students went to some classes, to share information about this topic. This was the beginning of the project.

Since this moment, every module started to create their own ways of taking part in this campaign. As a first step, students themselves created a way of sharing and organising the different information, initiatives, associations and tasks that they could find in order to add different actions to make a real change in this topic. Students of early years education coordinated all the actions, and all of the modules made some different strategies focused in three main axis:

- Creating social awareness about the problem of cancer in early years
- Raising funds for investigation on this topic
- Creating a donation campaign, to promote the bone marrow donations

In the first two weeks, volunteers were recruited from different educational modules, and they became coordinators. They met once a week to discuss the goals and achievements to be accomplished, and then, they communicate the outcomes to the group. It was self-organized, without the leadership of the school direction, who only acted as mentors and supporting staff. In these meetings, students realised that there were a lot of misunderstandings between students, and people in general, about bone marrow donations, so they created an information campaign to spread the information, and change the mind of people who was in the beginning against donating.

Other issue students had to face was the lack of funding in investigation. They contacted some associations and hospitals to clarify how big this problem was, and then they decided to raise funds for this goal, with different actions:

- Sport tournaments. Participation fee is donated to NGOs for Cancer investigation. The tournament is arranged by the physical education students, who had to find sponsors, arrange the tournament and set the rules and prices as a part of their formation. Teachers had to check that students were completing their tasks properly, and then graded their work as a school project.
- Trial exhibition. Some students of social inclusion could take advance of a local holiday to create a trial exhibition. All the money that the administration gave to the participants was donated for investigation. Also, by the time of the exhibition some information stands were set up providing documentation about child cancer, investigation, and bone marrow donation. Students gathered the whole information needed and then they had to prepare brochures and posters to clarify that and get to the most people they could.
- Solidarity bracelets and toys were sold by EYE students. Each one had a booklet that included useful information about cancer and donations, with the contact of different NGOs and associations.

In addition, students of every module prepared during their lessons some activities to encourage people in donations. Some students created a promotional video talking about hair donations while others gathered information about bone marrow donations. Students organised a mobile unit for donations at school for two days, getting people from school and community together, in a unique

donation campaign that had never done before. The most important fact was that everything, every little action, was studied, prepared, and carried out by the students. Meanwhile, teachers could assess them and grade their action according to the subjects and contents that they had to learn. Therefore, it was a more experiential and significant way of teaching and learning, and students who were not used to getting good grades in academic tasks could perform real life actions, making the learning experience satisfactory and real. And maybe it also made a change in their self-esteem and self-concept, because they reported as they feel more useful and proficient.

Conclusion

Adopting Service-Learning as an educative tool, and also as a new paradigm, has allowed to our school to improve in different ways:

- Impact: Our education has reached new levels, because students not only learn theory, but also can practice these theories in a real environment, making a change in their environment and society.
- Learning: The Service-Learning approach makes learning not only simpler, but also more significant. Every effort from students is focused in making improvements from the area that they are studying in their real life environment. It gives them the chance to adapt their ways of learning, and also, it makes the different contents more realistic, since they are using them in real life, and not only in a theoretical approach.
- Teaching: The team has evolved. Now the teacher's role is more than a mere transmitter of knowledge. Teachers became mentors and facilitators. The focus is on the students and teachers must guide them to do their best to reach their goals. It does not mean that students are not getting grades or marks for their jobs, it means that the evaluation comes from different activities: classroom activities and field activities, so students get assessed and evaluated in many different views, not only the theory they know, but also the way they apply it in real life, their social skills, creativity etc
- Society: Making campaigns and efforts to improve a main issue such as child cancer is a major goal. From our school, and thanks to the well-guided job from students, we could raise funds for investigation, help

people who suffer from this disease, arrange a donation campaign as it was never seen before… and all as an academic job which could be a part of their curricula.

- Satisfaction: When asked, students answered that this year has been the most efficient year of their lives. They learnt and also they made a change in people's life. They have grown up as new leaders, and it is a factor that can make their future work-life more satisfactory.

Service-Learning is a tool for every educator, no matter the level or the grade of the students. Is an approach in early years education than can make children enjoy their time in school. Our future educators will be more conscious and people-centered professionals and their experience will be bigger and deeper than students who learnt in a traditional way. For these reasons, this educational paradigm should be promoted as it can be adapted to everyone's needs and in my opinion, can create better professionals for a better world.

References

Del Campo, G. (2012). ¿De qué solidaridad hablamos cuando decimos aprendizaje-servicio solidario?. *II Jornada de Investigadores sobre Aprendizaje-Servicio*, 11. (What kind of solidarity are we talking about when we talk about Service-Learning solidarity?)

García, M. G. & García, M. J. C. (2015). El aprendizaje y servicio en la formación inicial del profesorado: de las prácticas educativas críticas a la institucionalización curricular.

Profesorado. Revista de Currículum y Formación de Profesorado, *19*(1), 8-25. (Service-Learning in teacher's formation: From educational practice to curricula changing)

de Hevia, I. A. (2016). Aprendizaje servicio solidario: una propuesta pedagógica innovadora. *RIDAS. Revista Iberoamericana de Aprendizaje Servicio, (2),* 3-32 (Service-Learning, an innovative proposal).

Francisco Amat, A. & Moliner Miravet, L. (2010). El Aprendizaje Servicio en la Universidad: una estrategia en la formación de ciudadanía crítica. (Service – Learning at the University: A strategy in formation of a criticist citizenship).

Puig, J. M., Batlle, R., Bosch, C. & Palos, J. (2007). Aprendizaje servicio. *Educar para la ciudadanía. Barcelona: Octaedro.*

Tejada, J. (2013). La formación de las competencias profesionales a través del aprendizaje servicio. *Cultura y educación*, *25*(3), 285-294.(Teaching profesional skills through Service-Learning).

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Programming with Children

JOS LINNEMAN

Abstract In the past few years within Friesland College we have tried to develop and support learning of "21st century skills" which children need to have in order to fully participate in society today and in the future. Programming is one of these skills, where children learn to think like a programmer, they learn to use the research questions, to be initiative, curious and to be able to use knowledge for practical applications. The projects related to programming with children started in 2014-15 when students from our education program put together projects in the field of Engineering with a lot of do-it-yourself activities and carried this out in primary schools. We continued our work in 2017-18 where 90 of our students were involved in 25 primary schools, where 1350 children where programming. Over the years we have focused and developed research learning methods and also learning by doing. The results of the projects show many benefits for all, children, students and teachers.

Keywords: • Project work • programming • science and technology • research learning • learning by doing •

CORRESPONDENCE ADDRESS: Jos Linneman, Friesland College, Heerenveen, The Netherlands, e-mail: j.linneman@fcroc.nl.

DOI https://doi.org/10.18690/978-961-286-269-5.10 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

Our society is changing rapidly from an industrial society to the information society. Within the reach of the children you can see the smartphone, tablet, digital board and the game console. Knowledge of the new technology is of great importance for the children. When we started the project in 2015 the question was: which skills do children need now and in the future? And how are we going to offer these skills to the children?

Description of the project work

At Friesland College we try to provide more exciting, contemporary and challenging education opportunities; education that invites students' initiative, curiosity, reflection and practical application of knowledge. As a result our College works closely with primary schools.

We started our collaboration in the academic year 2014-2015, when students from our education program put together projects in the field of Engineering with a lot of do-it-yourself activities and carried this out within primary schools. The intention is that they learn to implement projects from start to finish. After these experiences, we started at the request of the primary school to provide lessons in programming for children in game form. That was a success, partly due to good preparation. This resulted in the "Make it move" project, in which 90 students were involved in the academic year 2017-2018, around 1,350 children were programming at 25 primary schools of the Comprix organization in 3 townships in the south of Friesland. Our activities were very successful because all participating parties have an interest in the project, both schools, the children and students. As a result of the programming lessons, we were asked by the elementary schools if our students could also take care of projects in the new Science and Technology field with a didactic method, researching learning and learning by doing. This is a reasonably

new manner of working that follows 7 phases and in which the children themselves ask and answer a research question.

In our project work we also included foreign students. The foreign Erasmus + students took part in the "make it move" project for 2 days. We have developed a special program consisting of 2 days with the participation of our own students. They spent 1.5 days working in mixed groups with programming preparation, delve into it, making assignments, getting to know each other, discussing the division of tasks when they go to primary school and determining together how the programming will look like. The final part of the day consists of the students implementing the lesson programming within the primary school.

In 2017, the curriculum of Dutch primary education was scrutinised for future-proofing. The conclusion is that a lot needs to be renewed and that the so-called "21st century skills" must be included in the curriculum. Among the skills that children of the 21st century need to have in order to fully participate in society is also programming, learning to think like a programmer. Our project activities support learning of these important skills. As a community of students, trainees and teachers, we have become a knowledge centre for primary education in the field of programming and research learning and we use that knowledge during the training.

Conclusion

There are several success factors of our project work:

1. Students learn to implement content to a new discipline and give lessons at the primary school,
2. Students explain to teachers how materials work,
3. Teachers receive new educational resources in their classroom,
4. Students enjoyed in teaching other students,
5. Schools are very satisfied with new developments that are part of the "compulsory" program within a few years,

6. All participating parties benefit from the project,
7. The students experience the training as very practical, focused on practice.

During the project we also gained some additional benefits. Namely, we developed the program "Director of yourself" in which the student decides in which project he/she is dealing with which requirements or components. At the end of 2 school years he/she must have worked on all the requirements and have proof of that.

The collaboration between not directly logical partners in the Netherlands, creates many beautiful components that benefit all participating parties and also leads to substantive and organisational developments that improve education. If there is a shortage of teachers in the Netherlands, this project is part of the solution.

"If you want to go fast, go alone. If you want to go further, go together " (Ben Lynch)

References

Project Make it Move (2017). Retrieved 15. 4. 2019 from http://www.pwindepr.nl/livinglabhome/

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Science Technology Engineering and Maths in the Early Years

LISA TAGGART

Abstract At North West Regional College our Higher Education students studying a Foundation Degree in Early Childhood Studies and Higher National Diploma in Early Childhood Education and Care are in the first year of a project to engage with local STEM businesses to develop STEM activities for local primary school children. The importance of this project lies in the fact that the Early Years students have opportunities to work with engineers from Seagate Technology, a global data storage company, to develop activities that will pique children's interest, curiosity and enthusiasm. An additional benefit is that the current cohort of students are female and the opportunity to engage with STEM businesses exposes the students to both jobs and woman in STEM. This is particularly important for Northern Ireland and the United Kingdom as the number of females studying STEM subjects is substantially lower than that of their male counterparts.

Keywords: • STEM • Early Years • Woman in STEM • STEM Ambassadors • Education of preschool students •

CORRESPONDENCE ADDRESS: Lisa Taggart, North West Regional College, Derry, United Kingdom of Great Britain and Northern Ireland, e-mail: lisa.taggart@nwrc.ac.uk.

DOI https://doi.org/10.18690/978-961-286-269-5.11 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

Science Technology Engineering and Maths (STEM) is a curriculum area that has mostly been targeted at secondary and third level education with government funding targeted for encourage students to study the STEM subjects as the Northern Ireland Skills Barometer tells us that these are the areas in which Northern Ireland will have skills gaps for future jobs that are required in order to grow the economy (Department for Employment and Learning, 2015). Furthermore research tells us that the number of children studying STEM related subjects post 16 years old will not meet the demand for jobs in this area (PN 430, 2013).

The focus on encouraging and students to study STEM is mostly targeted at post 16 year olds and university courses. Within Northern Ireland the Department for Economy has encouraged a Higher Level Apprenticeship approach to encourage students to earn while they learn within a number of disciplines but the initially this was designed with STEM subjects at the fore. However, Katz (2010) suggests that early pedagogical methods provide opportunities for young children, who are innately curious and eager, to develop early STEM related skills of reasoning, problem solving, risk and planning. Higher Education students studied Early Years courses are expected to design implement and evaluate a range of activity plans that meet the needs of the curriculum at preschool, foundation stage and key stage one level. Students must cover STEM subjects in the Promoting Knowledge and Understanding of the World and Science and Technology modules on the HND and FD respectively.

In order to encourage STEM and provide an opportunity for positive females in STEM related jobs Seagate Technology's STEM Ambassadors were invited to work with our students in showcasing activities that would reflect the work that they do in business but meet the needs of the Northern Ireland curriculum. Prior to the workshop with students, meetings were held between lecturers and the STEM Ambassadors who ensured that activity plans were pitched at levels appropriate for children in preschool, foundation stage or key stage one classes. A programme was drawn up for the event whereby the students would receive a key note addressing STEM in the Early Years followed by a carousel of five activities that the students would carry out in groups. The activities were planned so that the students would then be able to implement these in their placement

setting with some room for amending the activity to meet the children's needs. Activities 1 – 3 were planned by the STEM Ambassadors while activities 4 & 5 where planned by NWRC lecturers. The activities included;

Activity 1: Construction using marshmallows with spaghetti. Students were asked to construct either a constellation sign or a 3 d shape. Students had to use their processing skills to develop a plan to work with the delicate pasta with some students using reasoning skills to provide further support for their creations through the use of bigger marshmallows or by adding addition supports.

Activity 2: Making of slime. Students used PVA glue, contact lense solution, bicarbonate of soda and food colouring to create slime. Students found this activity very therapeutic and also added glitter and scented oils to offer further opportunities for discussion.

Activity 3: Magnet racing. The students had opportunities to play with different strengths of magnets and investigate how the magnets responded to each other. Students then placed the magnets on miniature racing cars and had an opportunity to work out how to work with their partner to race the miniature cars.

Activity 4: Lava Lamps. Students created lava lamps using vegetable oil, water, food colouring and Alka Seltzer. Some students added a further dimension by using a torch to show the bubbling and changes taking place in the lava lamp.

Activity 5: Bubble Cubes. Students created a cube out of straws and pipe cleaners and were tasked with creating a bubble inside the cube. Students used washing up liquid and food colouring along with straws to create bubbles for the cube.

Over 55 students took part in the workshop and the feedback from students included that they found the STEM subjects fun and exciting and more importantly they felt confident and comfortable to use these activities whilst on their placement in early years settings.

In addition to this our students have completed Izak 9 training during Maths Week and for some students this challenged their own comfort with Maths and Numeracy skills. In order for our students to build children's skills and capabilities within the area of STEM at first we need to ensure that we are building their confidence within STEM related subjects as how they approach, deliver and engage with the subjects will be reflected to the children during the planned activities.

Due to the success of this project we have approached our next local STEM business to engage in a similar style workshop and this will further compliment STEM awareness of our students who will help shape, guide and mould young children's engagement with STEM in early years settings.

Conclusion

Engaging children in a STEM related activity at an early age will ignite their curiosity for the subjects and it should encourage a fun approach to learning from a young age. As our world continues to become more technologically advanced the role of STEM and the impact of STEM related subjects on our future is key. In early years settings we are in a precious position to help foster a love of life long learning but to also create that spark of curiosity and love of learning for STEM related subjects at an early age. Research tells us that STEM should be naturally woven into our early years education for children, teachers and parents, however, in order to provide these opportunities we need to ensure that early years educators are robustly trained and supported to improve STEM learning opportunities (Mc Clure, 2017). This project aims to provide our students with robust skills that they can take with them into placement but to also ignite their love of learning with regards STEM so they can pass this on to the students in their settings.

References

Department for Employment and Learning. (2015). *Northern Ireland skills barometer—"Skills in demand."* Retrieved from https://www.delni.gov.uk/publications/ni-skills-barometer

Katz, L.G. (2010*). Early Childhood Research & Practice.* Retrieved 1 April, 2019, from http://www.ecrp.illinois.edu/beyond/seed/katz.html

Mc Clure, E. (2017) *Sowing the Seeds for Successful STEM Learning in Early Childhood.* Retrieved 1 April, 2019, from http://nieer.org/2017/02/03/sowing-seeds-successful-stem-learning-early-childhood

Parliamentary Office of Science and Technology (2013) POSTNOTE 430 *STEM education for 14-19 year olds* (PN 430*)* London

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION
AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

An evaluation of the Quality of Technology in Education

GRAINNE MCCAFFREY

Abstract Since 2000, the Department of Education (DE) (Northern Ireland) has invested over £632 million in providing the ICT infrastructure in our schools through the Classroom 2000 project making Northern Ireland a recognised leader in the use of ICT in education. This report aims to examine the role information communication technology (ICT abbreviation will be used thereafter) plays within education. When evaluating the overall quality of ICT implementation data was collected within the department and analysed alongside the Self-Review Framework (2014) in June 2018. The study was implemented within the department consisting of 10 higher education lecturers, teaching on higher education early years courses. As a result of the study, recommendations were presented to the senior management team outlining suggested how to advance forward with the implementation of ICT to enhance learning. The framework is comprehensive and ensures teachers have firm guidance on evaluation of ICT. For the purpose of this study one element of the matrix was selected to evaluate ICT within the department.

Keywords: • information communication technology • self-review framework • early years education • professional development • evaluation •

CORRESPONDENCE ADDRESS: Grainne McCaffrey, North West Regional College, Derry, United Kingdom of Great Britain and Northern Ireland, e-mail: grainne.mccaffrey@nwrc.ac.ukk.

DOI https://doi.org/10.18690/978-961-286-269-5.12 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

As educators it is important to recognise the role that ICT plays, not only within society, but within learning experiences of students, as highlighted by Grabe and Grabe (2017), ICT has transformed our societies and changed the way people think, work and live. The development of technology is rapid and at times it can be difficult for teachers to ensure their knowledge on these developments is up to date. The 'powerful informational, communicative and interactive learning possibilities' of technologies (Richards 2006) and these rapid changes creates new possibilities for learners and teachers.

Research on how digital ICT can influence children's learning continues to be an area for continuous review; however consensus is forming around the environment that encourages educational benefits from digital technology in learning.

Key Findings

Questionnaires were analysed and overall the key issues identified from the survey for teachers was lack of time and lack of resources in implementing ICT into teaching. Key findings from the survey were analysed and an action plan to work towards improvement within the department in order to support both students and staff in the move towards using ICT effectively to enhance learning, was produced.

Professional Development

From the study it was apparent that there are inconsistencies in the level of training in relation to ICT. It is important not to dismiss the effectiveness of engaging in professional development using ICT for assessment. However, using ICT for assessment within our department does pose some problems. Some students lack confidence in using ICT platforms. Many students are part time students, who are more often mature students who have been removed from education for many years. A lot of time and support is required to develop skills and confidence in the use of online assessment tools among teachers and learners. This can be time consuming and at times can limit their progress within

the qualification. McCormick (2004) highlights that using ICT for assessment is an effective use of time for teachers in relation to assessment.

Role of leadership within professional development

Fink (2005) suggests that leaders should be 'leaders of learning' first and foremost which involves understanding learning, critical thinking, contextual understanding, emotional understanding, making connections and futures thinking. Fink (2005) goes further to acknowledge that leadership is a 'personal thing' and reflects who those in charge are as individuals. Reflective practice and on-going professional development for staff are regarded as central to ensuring high standards of quality (Dahlberg, Moss, and Pence 1999).

Creating a culture of learning within educational settings is vitally important and is shaped by the attitude and approach of leaders towards professional development. Establishing trusting professional relationships can be the cornerstone to any setting and is essential when promoting a learning community culture. Leaders need to ensure positive relationships are developed and communication plays a vital role in this. Training and support will enable staff to improve performance, develop confidence and improve morale within the team. An effective team must consist of members who feel they are working towards the same results and maintain a sense of purpose.

Areas for improvement

From the study it was identified that a 'lack of confidence' and a 'lack of time' were contributors for not implementing ICT within their teaching. However, the majority of respondents felt supported by management with the implementation with ICT. It was evident from this short study that teachers within the department are keen to enhance their skills in using ICT within teaching by engaging in professional development. Therefore the issues arise after the completion of these staff development opportunities when staff identify that they continue to feel that time and confidence hinder the implementation of these development courses. Haymore, Sandholtz, Ringstaff and Dwyer (1997) confirm that after staff development opportunities staff identified that these skills could not be implemented due to 'insufficient time'. In the modern teaching world we are not fortunate with additional time to reflect on new skills and knowledge and

in fact we are thrown immediately back into the daily busy life of teaching and assessment. However, as educators we are familiar with the benefits of taking the time to reflect, a previously identified by Ghaye and Ghaye (1998) and Kyriacou (2007).

It is essential to note the factors that have an impact e-teacher confidence. Ertmer and Ottenbreit-Leftwich (2010) declare that there has been an increase in technology training for teachers and despite this training; teachers are ill-equipped to transfer this training into the classroom. Training is at a high level within our own College, with regular up to date training and TEL support hub which is easily accessible to all. It is essential that teachers adopt appropriate practice when implementing technology into the classroom and ensure it is meaningful learning that is taking place (Ertmer and Ottenbreit-Leftwich 2010). As teachers it is important to note that technology is around us and to embrace it.

Lack of resources was another contributing factor, established from the study. The department has made appropriate attempts to ensure classrooms and learning spaces are appropriately designed to contribute towards positive ICT learning environments. All spaces have access to computers, laptops or iPads. The College also houses five modern computer classrooms. On reflection a whole school approach is required. All staff within the department have access to ICT resources, however it can be argued that these resources are not being utilised to their full potential due to 'time' and 'lack of confidence'. Therefore it is recommended that a whole school approach is made a priority. Teachers need opportunities to reflect on the use of ICT within individual and whole school teaching and learning, the Self-Review Framework provides an appropriate tool for such reflection.

Conclusion

Prior to the study, the value teachers placed on the use of ICT for learning was unclear. It is evident from findings that ICT is used within the department within lessons, however it is important to recognise that there are areas for improvement. It is important that staff continue to seek independent avenues to reflect on own use of ICT within teaching and use support systems such as, appraisal and team meeting to liaise with management on further support and

guidance required. It is important to note the positive impact ICT can have on learning and use this as the driving factor with the implementation of ICT within today's modern classroom.

References

Dahlberg, G., Moss, P. and Pence, A. (1999). *Beyond Quality in Early Education and Care Languages of evaluation*. Owon: Falmer Press.

Ertmre, P. and Ottenbriet-Leftwich, A. (2010). Teacher Technology Change. *Journal of Research on Technology in Education, 42*(3), 255-284.

Fink, D. (2005). Deadwood Didn't Kill Itself: a pathology of failing schools. *Educational Management, 27*(3), 313-321.

Ghaye, A. & Gahye, K. (1998). *Teaching and Learning through Critical Reflective Practice*. Great Britain: David Fulton Publishers.

Grabe, M., & Grabe, C. (2007). *Integrating technology for meaningful learning* (5th ed.). Boston, MA: Houghton Mifflin.

Kyriacou, C. (2007). *Essential Teaching Skills*. Oxford: Nelson Thornes.

McCormick, R. (2004). ICT and pupil assessment. *Curriculum Journal, 15*(2), 115-137.

Richards, C. (2006). Towards an integrated framework for designing effective ICT supported learning environments: the challenge to better link technology and pedagogy. *Technology, pedagogy and education, 15*(2), 239-255.

Sandhotlz Haymore, J. Ringstaff, C. and Dawyer, J. (1997). *Teaching with Technology*. London: Teachers College Press.

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION
AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Day Care Project Group: A Glance at Continuous Teacher Training in Early Childhood Education

ISABEL SIMÕES DIAS

Abstract This report aims to present the Day Care Project Group - Grupo Projeto Creche (GPC), a setting where Early Childhood Educators and Higher Education Teacher's work together to reflect and investigate about Early Education and the pedagogic work developed in the day care context. This project started in 2008/2009, in the Education and Social Science School (ESECS) /Polytechnic Institute of Leiria (IPL) – Portugal, with a team of six Early Childhood Educators (ESECS's cooperating teachers) and three ESECS-IPL's professors of the Early Childhood Teacher Training Course. Currently, this team is composed of fourteen participants (three of them are the coordination team) and work under two guidelines: one leading to the reflective direction of the educational action and the other to the researching dimension in educational context. Over the years GPC have produced several written documents that are used as working resources to Childhood Educators.

Keywords: • day care • reflection • research • teacher training • early childhood education •

CORRESPONDENCE ADDRESS: Simões Dias, PhD, Assistant Professor, Polytechnic Institute of Leiria, School of Education and Social Sciences, Leiria, Portugal, e-mail: isabel.dias@ipleiria.pt.

DOI https://doi.org/10.18690/978-961-286-269-5.13 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction - day care project group: dynamics and results

The *Grupo Projeto Creche* (GPC) is a setting where early childhood educators and higher education teacher's work together to reflect and investigate about early childhood education and the pedagogic work developed in the day care context. It started in 2008/2009 in the Education and Social Science School (ESECS)/Polytechnic Institute of Leiria (IPL)–Portugal with a team of 6 early childhood educators (ESECS's cooperating teachers) and 3 ESECS-IPL's professors of the Early Childhood Teacher Training Course. Currently, this team is composed of 14 participants (3 ESECS-IPL's professors, 1 educational technician and 10 early childhood educators) and is led by a coordination team (3 of the 14 elements), who organize and draw the general guidelines to develop within the group.

The group meet periodically to share challenges, pedagogical experiences and ways of thinking, in a collaborative logic. In order to respond to participants´ needs, the group relies on two lines of work mediated by face-to-face sharing: reflection and research. In each academic year the group meet once a month (on Mondays) to discuss from a reflective perspective and twice a month to regarding a research dimension. These meetings can take place in ESECS or in one of the institutions involved in the group work. Since the academic year of 2012/2013 the group undertook a dynamic that unfolds around stories lived with children in different contexts (family, professional and others). These stories, which emerge at the beginning of the academic year, are written by each of the group participants and stored in a box waiting to be selected and shared in a large group.

At each reflection meeting, one of the stories in the box is randomly selected to be read by its author and discussed among all group members after listening in silence. This sharing is the essence of the group, being the core of the learnings and well-being of the different participants. The extended debate lets new ideas to be included into each individual's unique view of the reality under study. At the end of the discussion, the author of the story carries out the written synthesis of the co-constructed learnings and shares this document with all the group members. After each reflection session a minute is drawn up, and all the elements of the group write an individual reflection - each reflection session originates 1 minute, 13 individual reflections, 1 story (and the results of the oral reflections).

To discuss research-related issues, the group meets once every two months. These meetings allow participants to share research interests and to work in small groups. Each meeting is organised in three key moments: i) a moment in a large group to share information and present one of the research works in progress; ii) a moment of autonomous work and iii) a final moment in which each group records what they did, what they learned, what questions/doubts were raised, and the next tasks.

Results of the project

Over the years, GPC have produced several documents (around 800 individual reflections and 100 meeting minutes, 10 articles published in national and international journals with peer review, 2 articles published in national journal without peer review, 5 newsletters, 14 articles published in national and international conference proceedings book with peer review, 11 reports published in international conference proceedings book with peer review, …) that is compiled into a group folder. These written documents are used as working resources by childhood educators and are seen as a way to regulate GPC's work[1].

[1] For further information you can contact us on grupoprojetocreche.esecs@ipleiria.pt or read the group newsletters (written in Portuguese and in English):
https://www.ipleiria.pt/esecs/wp-content/uploads/sites/15/2018/12/newsGPC_v2.pdf
https://www.ipleiria.pt/esecs/wp-content/uploads/sites/15/2019/01/News2.pdf

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Didactical Materials and Methods for Work With Migrant Children in Preschool Education for Didactics of Social Sciences

MARTA LICARDO

Abstract This paper is report of the project Didactical materials and methods for work with migrant children in preschool education which was implemented at Faculty of Education University of Maribor during April to July 2018. We applied this project because in Slovenia we have lack of didactical material for work with migrant children in preschool education. All the material produced is focused on social sciences in preschool education. Students who were included in the project gained various new competences related preparation of guided intercultural activities, knowledge about best practices and methods for work with migrant children, preparation of didactic materials, preparation of quality visual didactic materials, ICT competences related to use of power point and other tools. During the project we produced the Guidelines for preschool teachers and elementary school teachers for didactics of social sciences with plans of guided activities and picture dictionary in four languages.

Keywords: • didactical material • methods • migrant education • preschool education • social sciences •

CORRESPONDENCE ADDRESS: Marta Licardo, PhD, Assistant Professor, University of Maribor, Faculty of Education, Maribor, Slovenia, e-mail: marta.licardo@um.si.

DOI https://doi.org/10.18690/978-961-286-269-5.14 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction of the project

The project Didactical materials and methods for work with migrant children in preschool education for didactics of social sciences was implemented in the spring semester 2018 with collaboration of eight students from the Faculty of Education University of Maribor and three pedagogical mentors of two partner institutions Faculty of Education University of Maribor and company Juma, from Maribor, Slovenia, as our non-educational project partner. The project was funded by Public Scholarship, Development, Disability and Maintenance Fund of the Republic of Slovenia, ESS and Ministry of Education, science and sport in Slovenia.

The purpose of the project was to develop didactical materials and tools for preschool teachers and elementary school teachers who work with migrant children. Most of the developed didactic materials includes themes related to social sciences in early years' education. During the projects students were researching the literature and preparing guided activities for migrant children under the supervision of the mentors. They have learned what the issues are in working with migrant children and what are the most important good practices and methods. During regular weekly meetings with mentors, students discussed the literature and prepared materials. Two students who study art were included in the project team and they prepared all the necessary visual materials needed for the final products.

Evaluation of the project – key findings

At the beginning it was hard for students to understand that migrant children usually do not speak Slovenian language and that the activities must be planned in a way that every child is included. This was the greatest challenge, but eventually by the end of the project all students were able to write a plan for such guided activities. During the project we produced the Guidelines for preschool teachers and elementary school teachers for didactics of social sciences with plans of guided activities (PKP DIMEP 2017/18), which are planned in a way that migrant children can be included and participate. The Guidelines include over 130 pages and 36 different themes with guided activities form social sciences. Within the theoretical element of the book are general guidelines for teachers, various adaptations that can be used in work with migrant children, how to

include a child into the group, how to adapt the playroom, how to prepare environment, how to prepare individualised education plan, how to collaborate with the migrant families etc. The chapter with guided activities includes teachers' plans on themes, such as: greetings, how to introduce myself, what are the institutions in local social environment, other cultures, family members, home, emotions and emotional regulation of fear, anxiety, anger etc. Beside the manual we have also produced multilingual picture dictionary in Slovene, English, Bosnian and Albanian language. We've also planned to include Arabic language, but we've managed only to receive written translations of the words for the dictionary and unfortunately did not manage to obtain the audio translations. As every word in the dictionary is presented in three modalities, visual, written and audio modality, which was in some cases also a great challenge, especially when the words included are abstract and not concrete.

Conclusion

In the project students gained many new competences related to search of literature, preparation of guided intercultural activities, competences related to knowledge about the best practices and methods for work with migrant children, preparation of didactic materials, preparation of quality visual didactic materials, ICT competences related to use of power point and other tools. We can conclude that this project was a good example of how to educate students with more effective and practical learning during the project work.

References

PKP DIMEP 2017/18. Projekt: Didaktična gradiva in metode za delo z otroki priseljenci v predšolskem obdobju DIMEP. Retrieved from https://pef.um.si/381/pkp+dimep+201718

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Developing Multimodal Literacy in Visual Art Education Classes

JANJA BATIČ & PRIMOŽ KRAŠNA

Abstract This report presents possibilities of developing multimodal literacy in visual art classes. In the learning unit "Word as an element of art", elementary school pupils from eighth grade were able to get acquainted with Word Art as a special form of artistic expression. The pupils sought the answer to the question "What do I want to communicate to the world?" The first part of the task required pupils to write the original answer to the question, design it with visual means and place it in space (spatial installation). In the second part of the work, they wrote a short poem, designed it and projected in the space (school hall) according to the American artist Jenny Holzer. It turned out that contemporary art practices have a distinctly multimodal nature, therefore their inclusion in the visual arts classes allows pupils to develop multimodal literacy.

Keywords: • visual art • art didactics • word art • multimodal literacy • contemporary art practices •

CORRESPONDENCE ADDRESS: Janja Batič, PhD, Assistant Professor, University of Maribor, Faculty of Education, Maribor, Slovenia, e-mail: janja.batic@um.si. Primož Krašna, Visual Art Teacher, Elementary school Rače, Rače, Slovenia, e-mail: pkrasna@gmail.com.

DOI https://doi.org/10.18690/978-961-286-269-5.15 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

The visual art curriculum in Slovenia states (2011, p. 4): "*In the subject of art education pupils learn, experience and value the heritage of visual art, as well as objects of contemporary visual and artistic culture.*" One of the essential differences between the works of art from heritage of visual art and the works of contemporary artistic practices is in the mode of communication. Traditional forms of expression such as painting, sculpture, etc. address the spectators with visual mode of communication. The nature of contemporary art practices is extremely multimodal, since such works require the interpretation of meanings from different communication modes (gesture, image, sound, word, ...) and the formation of a summative meaning. Carey Jewitt explaines (2008, 246): "*Muldimodality attends to meaning as it is made through the situated configurations across image, gesture, gaze, body posture, sound, writing, music, speech, and so on. From a multimodal perspective, image, action, and so forth are referred to as modes, as organized sets of semiotic resources for meaning making.* "

Key findings

With the aim of developing multimodal literacy with the help of contemporary artistic practices, we planned and implemented a larger learning unit in the eighth grade (thirteen year old children) of the elementary school with the title "From concept to sign". In the following, we present one of the smaller teaching unit. "The word as an element of art" that was part of the larger unit-mentioned above. The objective of this smaller unit was to enable pupils to: explain the links between artistic and narrative content, learn about word art, distinguish between verbal concept and its visual image, depict the chosen term in different ways and develop multimodal literacy. Through various materials and accessories (pencil, computer, printer, paper, printing foil, projector and camera) pupils created spatial layouts that included words or shorter texts. After a brief introductory activity, the pupils acquired basic information about the word art, which is characterised by a word or sentence. Pupils learned the works of American neo-conceptual artist Jenny Holzer, who designed some of her works by projecting them with the projector on facades of buildings. In this way she exhibited her thoughts, as well as her shorter and longer poems. The pupils learned about the individual works of art by analysing the text (meaning of written words), the placement in the space (message layout), and tried to make meaning from two different modes of communication.

In the following, pupils were invited to create their own original works of art by trying to answer the question "What do I want to communicate to the world?". The task consisted of two parts. In the first part, pupils had to compose an original answer to the question posed, designed the text using a computer (taking into account the typography, which is in accordance with the text message). They had to exhibit their works of art and in the school hallway. In the second part of the task, the pupils had to compose a poem and design the text with the help of a computer, print the text on the foil and project the text using an overhead projector on the school hallway. This was followed by an analysis of the works of art that showed that the pupils sensibly included various communication modes in the original multimodal work of their own.

Conclusion

By integrating works of contemporary art practice in visual art education classes at various levels of education, pupils can develop not only visual but also multimodal literacy or multilitercies, which is one of the central competences of today's time (Cazden, Cope, Fairclough, Gee et al, 1996). Word art, with which the pupils studied multimodality in the presented learning unit, enabled them to create multimodal works / messages through their own visual expression, thus developing their multimodal literacy. The example described in the report is one of the possible ways of developing multimodal literacy in elementary school. Although we designed our lesson for eighth grade students (thirteen year olds), art works involving more than one code of communication could be included at all levels of education, enabling children and students to explore different communication modes and meaning making.

References

Cazden, C., Cope, B., Fairclough, N., Gee, J. et al (The New London Group) (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*; 66 (1), pp. 60 – 92. Retrieved on 8. 4. 2019 from http://newarcproject.pbworks.com/f/Pedagogy+of+Multiliteracies_New+London+Group.pdf

Jewitt, C. (2008). Multimodality and Literacy in School Classrooms. *Review of Research in Education,* 32, pp. 241-267. Retrieved on 8. 4. 2019 from https://journals.sagepub.com/doi/pdf/10.3102/0091732X07310586

Učni načrt: Likovna vzgoja [Curriculum: Art Education] (2011). Predmetna kurikularna komisija za likovno vzgojo [The Curriculum Commission for Art Education].

Ljubljana: Ministrstvo za šolstvo, znanost in šport, Zavod RS za šolstvo. Accessed on 8. 4. 2019 http://www.mizs.gov.si/fileadmin/mizs.gov.si/pageuploads/podrocje/os/prenovljeni_UN/UN_likovna_vzgoja.pdf

CONTEMPORARY THEMES IN EARLY CHILDHOOD EDUCATION
AND INTERNATIONAL EDUCATIONAL MODULES
M. Licardo & I. Simões Dias (eds.)

University of Maribor Press

Basics of Ballet Techniques and Pre-school Dance Education

ANA TINA JURGEC

Abstract Dance education is part of pre-school education. It covers the complexity of the child's psychophysical development and is also integrated with other fields of activity. Dance is an important factor in children's development as it structures and moulds their emotional world, enriches their experiencing and creativity, in short, it helps shape the personality of the individual, while at the same time enabling expressiveness through movement (Kroflič, 1999). Dance education offered in kindergartens focuses primarily on children's creative movement. Expression is based on an inner experience, conveyed by the children to their environment through movement. Here, the question arises on whether it is possible to enhance the richness of children's motor skills in order for them to express their experience with greater ease. The present paper shows, based on the qualitative analysis of the dance session carried out, that basic ballet techniques can be employed also in dance classes for pre-school children. With them we enrich the children's dancing skills and enable them to express their feelings through movement.

Keywords: • pre-school education • ballet • dance education • planning • dancing skills •

CORRESPONDENCE ADDRESS: Ana Tina Jurgec, Lecturer, University of Maribor, Faculty of Education, Maribor, Slovenia, e-mail: ana.jurgec1@m.si.

DOI https://doi.org/10.18690/978-961-286-269-5.16 ISBN 978-961-286-269-5
Dostopno na: http://press.um.si

Introduction

In kindergartens dance education focuses primarily on creative movement, which enables a joyful exploration of one's own bodily movement and is also a means with which children can express themselves (Kroflič, 1999). But all this gives rise to a question:

How can we achieve that the children's bodies become instruments of their expressiveness?

The dance pedagogue Otrin (2006), was also confronted with this question. He claims that it is not enough to experience feelings, moreover, we need to use our instrument (body) in order to express these feelings. The task of dance educators is to guide the children towards awareness that technique is a form of dance or a means for dance expression, respectively.

Key findings

We attempt to answer the above-mentioned question by the practical use of basic ballet techniques while working with pre-school children. Vogelnik's definition claiming that dance is a rhythmical movement of the body, and that the dancer merely needs to comply with conditions for dance: i.e. space, time and the dancer's body (Vogelnik, 1994) demonstrates that there is basically no difference between ballet and other forms of dance. A professional approach thus requires that children first become familiar with their body, that they extend the movement of the body into their surroundings, that they develop a sense of the space around them in all its dimensions, and that in collaborative movement – dance – they feel the energy resulting from interpersonal relations (Vogelnik, 1994).

We compared our planned objectives defined in the curriculum for dance preparatory schools (Kuret, 2003) with objectives defined in the Curriculum for Kindergartens (1999) and found striking similarities between the two. Indeed, this means that certain activities, carried out in the framework of dance preparatory schools can be included in the course of dance classes in kindergartens.

On the basis of this finding we prepared a 45-minute (one pedagogical hour long) dance session and carried it out in a public kindergarten in the framework of their planning of the introduction to the art of ballet.

In this dance session we included elements of the basic classical ballet techniques defined in the curriculum for dance preparatory schools (Kuret, 2003, p. 432) such as:

- basic leg positions
- squat – *plié*
- jumps – *sauté, echappé*
- hand movement – *port de brass*
- correct body posture
- various forms of walking and running on half-toe, on heels, and in squat position.

We introduced them in the form of didactic games (designed to develop children's abilities and acquisition of knowledge). We employed the method of guiding the children with our own movement and words of encouragement as they shifted to the improvisation method where they independently invented and created movements. All dance activities were performed to classical music from the album by Pascal Sévajols (2017). The rhythm and dynamics of the music dictated the rhythm and dynamics of the movement.

The group consisted of 24 children aged 5-6: 8 girls and 16 boys. A non-random, intentional sample from a concrete population was used. We followed operative objectives, i.e. activities defined in the curriculum for the programme Dance preparatory school, carried out in music and dance/ballet schools. These objectives were (Kuret, 2003, p.433):

- pupils familiarize with movement of the whole body, its individual parts, and train coordination of movements,
- they become aware of their body in relation to space – individually or in a group,
- they develop expressive power and quality of movement.

Each dance activity was performed in conjunction with a specific topic, and the children were verbally encouraged. We also employed various metaphors for naming technical elements in dancing (such as butterflies, small frogs, shells) which motivated the children for work, and made it easier for them to remember the tasks.

The dance session began with a greeting; with a gesture or a word. Each child expressed the greeting in their own way, depending on their mood at the time (being happy, shy, angry, or determined).

In the warm-up phase, children employed various methods of walking (on tip-toes, on their heels, forwards, backwards) and stretched other parts of the body in a sequence taking into account systematicity of execution of movements.

The central part of the didactic unit was dedicated to acquiring the movement motifs on the spot and into the surrounding space. To this end, the following exercises deriving from basic ballet techniques were carried out:

- exercises for strengthening back muscles and for correct posture
- exercises for hands (the children developed their expressive power according to the character of the music piece)
- exercises for foot flexibility
- exercises for strengthening the openness of hips
- exercises intended to enhance the motility of the body
- exercises for developing skills of concentration and motor memory
- exercises for controlling space (at different levels of movement, raising awareness of what is front, rear, left and right, what diagonals are, lines, and circles, and what the dimensions of movement can be).

The last part of the dance session was dedicated to the children's self-expression, improvisation to a given music piece. This is followed by relaxation which has a soothing effect on the child, it calms them and fills them with new energy.

Conclusion

Based on the qualitative analysis of the dance session carried out we can establish that children are relaxed during the training. All the exercises encouraged spontaneous movement of the children's hands, expression though movement and creativity even though the sessions included elements of classical ballet. It is important that the dance technique is introduced to the child through appropriate contents and encouragement, since they can through learning specific patterns of movement upgrade and improve these patterns experientially. Experiences of ballet teachers dealing among other things with dancing in the pre-school period in practice have also shown that educators (ballet non-experts) frequently have concerns that they do not reach deep enough into the basics of ballet due to their lack of formal education in the field. However, the use of the basics of classical dance techniques requires of the educator merely basic knowledge of musical elements and a systematic approach to planning, execution and evaluation of the educational process/work.

References

Kroflič, B. (1999). *Ustvarjalni gib – tretja razsežnost pouka (Creative movement – the third dimension of classes)*. Ljubljana: Znanstveno in publicistično središče

Kuret, P. (2003). *Izobraževalni programi – predmetniki – učni načrti: glasbena šola (Education programs – syllabi – curricula: the music school)*. Ljubljana: Zavod RS za šolstvo.

Kurikulum za vrtce: predšolska vzgoja v vrtcih (Curriculum for kindergartens: preschool education in kindergartens). (1999). Ljubljana: Ministrstvo za šolstvo in šport in Zavod Republike Slovenije za šolstvo.

Otrin, I. (2006). *La la bum: plesna abeceda za začetnike (La la bum: dancing alphabet for beginners)*. Ljubljana: Javno sklad RS za kulturne dejavnosti.

Sévajols, P. (2017). *Pascal Sévajols Plays Ballet Class - Vaganova Grade 7th*. OtrinArtManagement GmbH.

Vogelnik M. (1994). *Tehnika gibanja v plesu: priročnik plesne tehnike (Movement techniques in dancing: a handbook of dancing techniques)*. Ljubljana: Zveza kulturnih organizacij Slovenije.

INTERNATIONAL EDUCATIONAL MODULES IN THE EARLY CHILDHOOD EDUCATION – PROJECT EYE

University of Maribor Press

Modules were established within the project Erasmus+: International Learning Module in Early Years Education (EYE), during 2017 and 2019. International educational modules are structurally similar but thematically different training modules for preschool education students, which are implemented simultaneously in the participating institutions and can be freely chosen by learners of the partner organizations. All modules are recognized by all educational institutions and evaluated according to the same criteria. The learner acquires key qualifications as well as thematic and professional qualifications. To accompany this professional mobility, the partners developed a language and accompanying program that provide all the necessary support to the participants.

In general, this project of cross-border competence development is intended to significantly increase the attractiveness of training in the area of early childhood education. Through the interdisciplinary approach (vocational and university education) both areas are to benefit from the strengths of each other. Proven methods of intercultural and informal learning are intended to round off the development of the module and its implementation into everyday school life. In this way, this project is also intended to contribute to the improvement of students' competences in the the early childhood education in Europe.

The project is a pilot project which, in the first phase, involves the development of a structured training module, its testing and implementation in the curricula. The outputs of the project describe the approach of the project partners, the module and all accompanying measures, including a cost plan in a way that allows

other institutions to participate and in a second phase, to adapt this module to the requirements of other partners.

During the years 2017 and 2019 partners of the project EYE prepared the modules, tested the mobility arrangements and logistics for the students, of which many went to the foreign country for the first time in their life. The modules and the overall project evaluation showed that students were very sastisfied with the organisation of the modules and organisation of mobility agencies, they were also very satisfied with intercultural learning, support and guidance by the teachers, module programmes, communication, cooperation and interaction. Many of the students felt personaly empowered after the participation in the EYE modules and expressed, they would like to attend more international modules in the next years.

In this chapter are presented all the modules of the project EYE. More information about the project is available on link: https://www.project-eye.eu/

University of Maribor Press

Resilience - how to make children strong (Germany)

Introduction

Resilience is an individual's ability to adapt to life tasks successfully despite social disadvantages or other highly adverse conditions. Children might face in their childhood burdens like growing up in poverty, experiences with acts of violence, divorce of the parents, single parent families, bullying and exclusion, loss of a close person or frequent school changes. How can educators support resilience for children at the age of 0 till 10? The following measures can support resilience: relaxation training, experience in nature and in self-awareness, telling fairy tales or stories, interpretation of picture books and offering different role plays. Aims of the resilience training are the seven pillars of resilience. Children should be able to show optimism, self-efficiency, accept responsibility, regulate emotions, find strong relationships, focus on and find solutions and focus on the future. In our two week module we will not only give children a training programme for resilience, but also the future educators. Beside the regular programme we offer lots of activities to get to know the region of the Bavarian mountains and its lakes.

Learning goals

Students will:

- communicate actively in the team and learn how to participate in common goals
- develop friendships
- strengthen and enhance their team spirit through physical exercises/workout/walking in the mountains/paddling on the lake Chiemsee or on the river Alz
- experience animal-assisted therapy (e.g. horses/ alpacas)
- learn about the Bavarian school system
- gain insight into the practical work educators do in Germany through visits to special social institutions as well as to a forest Kindergarten
- gain theoretical background on child development especially on bonding

Methodology

Methodology of learning experience is divided into the settings:

a) in the classroom: role play, group work, presentations, discussions, excursions;
b) outside the classroom: encountering and facing nature; special exercises to strengthen children as well as educators

Programme

The programme includes:

- accommodation in an apartment (with three to four students) in Traunstein
- pick up at Traunstein's train station
- welcome meal
- local transport
- visit and trips as presented in the program
- all needed workshop materials
- organisational costs

More info: https://www.project-eye.eu/germany/

University of Maribor Press

Programming with children (Netherlands)

Introduction

We take the following experience with this project: We have been doing the project "make it move" for two years. Students of the Specialised Educational Assistant / Education Assistant program focus on programming possibilities for children. Our students learn about it, complete assignments, prepare lessons and implement this in groups at a primary school.

The preparation takes place during the classes of the programme. For this we have set up a special room, the "living lab". Here students can work on the question of a school and at the same time they take over the direction of part of their study.

Last year, 80 students of our programme participated in the project, more than 1100 childrens have been programming. All participating parties were very satisfied: students, teachers, schools and children were enthusiastic.

We have recently formed a formal collaboration with 40 primary schools in the framework of this project.

This mode of work should be applied internationally under the motto, education for education: cooperation of different types of education provides benefits to everyone, in this case certainly for students and children.

Learning goals

Students will:

- Communicate actively with students of different nationalities
- Strengthen teamwork through doing activities together, such as paddling or canoeing
- Develop friendships
- Learn about the Dutch educational systems
- Experience coding in primary schools
- Gain some insight in the Dutch working mentality
- Experiencing the principle: Learning by doing
- Develop English language skills and even learn some Dutch

Methodology

In the classroom: learning by doing. Working together with Dutch students that already know the programme. Coding, presenting, discussing and group work on a primary school.

Outside the classroom: doing excursions related to the objectives and improving team spirit.

Program

The program includes:

- accommodation in a big boat (two persons per room)
- pick up from the local station
- welcome meal and goodbye party
- local transport + bicycle
- visit and trips as presented in the program
- organisational costs

More info: https://www.project-eye.eu/eyenetherlands/

University of Maribor Press

Science and technology in early years (Northern Ireland, UK)

Introduction

From their earliest days, children try to make sense of their world. They are naturally curious about their environment and the people around them and frequently ask questions. They enjoy using their senses to explore the immediate indoor and outdoor environments. Through their natural curiosity and by providing them with a wide variety of activities and experiences in play, children begin to develop a range of skills and concepts including observation, experimentation and free exploration of their surroundings. Interaction and discussion with adults further develops these skills and concepts and helps to promote the use of appropriate language…Children can also learn about the world around them from books, pictures, posters, photographs and by using appropriate ICT (Northern Ireland Preschool Curriculum, 2006).

Science and Technology is embedded in the area of world around us in the northern ireland curriculum and is key to students further developing their observation, experimentation and exploration of their surroundings. As children are naturally curious it is at this stage that as educators we nurture and instil an inquisitiveness around the world in which we live. This area is delivered to students through the playing of activities and understanding the key curriculum

documents for Northern Ireland. Technology plays a key role in the delivery of our courses. Students use active learning through technology to enhance their experience. This is reflective of the world in which they live, whereby technology is forever evolving and changing a very much a part of their life. Within Early Years there is debate as to the level of use of technology for children and therefore part of our role is to aid students to find the correct balance. North West Regional College has a dedicated team to support staff development around technology – The Technology Enhanced Learning Support (TELS) team. The TELS team put in place a technology strategy to promote, encourage and support the use of technology in the college. TELS mentors provide dedicated support to individuals and course teams and within the Early Years team the uptake of this training has been very strong. The TELS team are currently involved in a research project around the use of tablets effectively in primary schools. . As staff teach across different courses the breadth of Early Years courses benefit from the use of technology to further aid lecturer's pedagogy. This is further support by the Department for Economy (formerly Department of Employment) and Learning 2012 set an eLearning Policy which aimed to; 1.Enhance the classroom experience, 2. Develop a robust learner support protocol and 3. Engage learners and promote real life experiences.

Learning goals

Students will:

- Develop friendships.
- Have opportunities to advance their English language skills.
- Have opportunities to experience Northern Ireland Early Years settings (Creche, nursery school and primary school).
- Have opportunities to explore science and technology in the early years through both indoor and outdoor activities.
- Experience use of Technology Enhanced Learning.
- Have opportunities to explore local culture through planned activities (Quiz night, Karaoke Night, Pub crawl, Game of Thrones excursion etc).

Methodology

Methodology of learning experience includes:

a) Classroom activities –use of mobile technologies, creative and practical activities, discussions, presentations and group work.
b) Outdoor activities – bringing the classroom outside, using science and technology activities in the outdoors

Programme

The programme includes:

- accommodation in a shared house (with three to four students) in Derry
- pick up at Derry Bus Station
- welcome meal
- local transport
- visit and trips as presented in the program
- all needed workshop materials
- organisational costs

More info: https://www.project-eye.eu/northern-ireland/

University of Maribor Press

Outdoor experiences: learning opportunities (Portugal)

Introduction

In the last decade, in Portugal, outdoor spaces are becoming less significant in children's lives (Neto, 2005). However, we know that playing outdoors facilitates the development of motor, social, cognitive and emotional skills, which are fundamental for adult life (Bento, 2015). To ensure that children have the possibility of living adventures and challenges outdoors (without being led by adults), is an international concern. In this sense, it is urgent to develop intervention and training projects in real context that, based on the needs identified by the main actors, can serve as a means of sustaining and diffusing behavioral change.

Learning goals

- to experience innovative experiences in natural environments;
- to understand the educational potential of outdoor learning experiences;
- to design and to implement outdoor learning experiences;
- to know how the outdoor space is used pedagogically with children up to the age of 6;
- to reflect on the outdoor learning experiences.

Methodology

Our methodology is based on a constructivist conception of learning.

You are going to learn in interaction with others and with the environment. You are going to feel, to question, to asses and to reflect on all your experiences – your experiences will be the starting point to build your own learning.

Programme

The programme includes:

- accommodation in twin rooms in a local hostel
- pick up upon arrival to Leiria (you should get from the Lisbon or Oporto airport to Leiria for your own)
- welcome meal, international party and goodbye party
- local transport
- visit and trips as presented in the program
- all needed workshop materials
- organisational costs

More info: https://www.project-eye.eu/eyeportugal/

University of Maribor Press

Emotional learning and puppet theatre (Slovenia)

Introduction

The topic is integration of social sciences and art by teaching and learning of social-emotional skills with use of puppet theatre in early childhood education. Teaching and learning of social-emotional skills is essential for successful inclusion and socialisation of the child to social environment. Social emotional skills, especially emotional competences are also very important for social inclusion and school achievements. Kindergarten teachers should promote learning and teaching of these skills through various methods. Drama play and creation of puppet performance are excellent methods for promoting students' abilities to perform, to understand and to learn about child's perception and to express various themes through performances for children. Puppet theatre performances have a long tradition at Faculty of Education University of Maribor. Students really enjoy and have fun in creative process of preparing puppet performances. We're sure this module is an excellent opportunity for early childhood education students to experience how to teach children about important topics with innovative and creative methods.

Learning goals

Students will:

- actively communicate in the team and learn how to participate in common goals
- connect to each other, develop friendships
- get to now and master the process of performance from different points of view (directing, dramaturgy, design, music, acting, animation)
- produce puppets for the performance with use of various materials
- prepare an art creation and collaborate in team
- discuss various definitions of emotions and definition of emotions for preschool children
- write short scenarios for the performance
- use various modalities and animation
- prepare drama play with puppets
- perform drama play with puppets for the public performance.

Methodology

Methodology of learning experience will be based on practical work in workshops with different tools and materials, stage and scenery.
During the lectures teachers will use method of discussion, e-learning (in moodle), problem solving, demonstration and explanation.
During the rehearsal for performance students will be guided with method of animation and method of integration of various modalities e.g. singing, dancing, play.

Programme

The programme includes:

- accommodation in twin rooms in student dormitory
- pick up upon arrival to Maribor
- welcome meal
- local transport
- visit and trips as presented in the program
- all needed workshop materials

- organisational costs

More info: https://www.project-eye.eu/slovenia/

University of Maribor Press

Service-learning (Spain)

Introduction

Service-learning is an educational approach that combines learning objectives with community service in order to provide a pragmatic, progressive learning experience while meeting societal needs.

Service-learning involves students in service projects to apply classroom learning for local agencies that exist to effect positive change in the community, in our project we will focus on developing emotional learning and inclusion with children from three to six years.

Learning goals

In this module, students will have the chance to improve their professional skills, by designing an intervention project which will be implemented in an actual school, with real students and teachers. They will learn how to assess the needs in an educational institution, and how to use their professional tools to improve the situation.

Students will work with concepts related to emotional intelligence – how to read and express emotions, feelings and sensations. This is an important tool for developing their future jobs educating children.

Special educational needs will also be considered in this learning module, providing students the unique experience of meeting and improving their skills to face every situation they can find in their professional career.

Methodology

To achieve the goals of our module, students will attend classes to set the main objectives of the project that they are going to develop. They will set the goals and the methods to achieve them, cooperating and providing their cultural tools and personal point of view.

On a second step, they will apply the project in a real school environment, giving them the chance to coordinate and lead a pre-primary school class, organising different games and activities related to emotional intelligence.

Programme

- accommodation in host family
- full board
- welcome meal
- pick up at arrival from Seville airport
- local transport
- visit and trips as presented in the program
- all needed workshop materials
- organisational costs

More info: https://www.project-eye.eu/spain/

University of Maribor Press

Conclusion

This book is the result of highly motivated teachers, researchers and practioners in early childhood education which is the proof that international collaboration brings many benefits for the professionals, institutions, reseach and practice. The book covers many contemporary themes in early childhood education and we hope that students of preschool education can acquire new knowledge and competences which will help them to be better professionals in the future. We also hope that international collaboration of the authors will not stop at this point and that we could continue with our work in similar projects and bring out new ideas in early childhood education.

SCHOOL PARTNERS

Univerza v Mariboru
Pedagoška fakulteta

Fachakademie für Sozialpädagogik Traunstein

friesland college

north west regional college
Derry-Londonderry • Limavady • Strabane

POLITÉCNICO DE LEIRIA

ERGOS TU FUTURO

LOGISTICS PARTNERS

ZN Institute for New Age Education
Zavod za Novodobno Izobraževanje

BERLIN KULTUR

de plannen makers
stimuleren van ondernemershap

foyle INTERNATIONAL

ASSOCIAÇÃO DE PROMOÇÃO DO BRINCAR

step