

EARLI SIG 5 2020 International Virtual Academic Event

Early Childhood Education: Growing Up in Dynamic and Changing Times

A-synchronous event: book of abstracts.

The Kibbutz Junkyard Playground - Past and Present

Kindergarten children, educators and parents' perceptions about the "junkyard" as a unique pedagogical communal approach

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Abstract

This qualitative study explores kindergarten children, educators and parents' perceptions about the "Junkyard Communal Approach". The Kibbutz educational system acts as an incubator of EC innovations adopted in Israeli settings. One of these initiatives is the "Junkyard", a unique educational environment, consisting of artifacts of the adult world no longer in use and encouraging children's free play. The junkyard as an educational approach is based on constructivist and ecological principles. Accordingly, it is attuned to the child's developmental needs and to the cultural context of his/her community.

This study involves: 14 in-depth interviews with educators operating junkyards in rural and urban areas; 12 parents; and observations and interviews with children in ten kindergartens.

Findings suggest the junkyard as a space and a pedagogy reflects on the community's environment and cultivates children's holistic development. Educators' role is perceived as responsible for collecting the junk, building the junkyard, being accountable for routine maintenance, caring for safety, and mediating during activities. Parents' attitudes are characterized by fear that dissipates once the educators clarify the contribution of the yard to their children's development. Observations and interviews with the children highlight their perceptions of the junkyard as their imaginary world.

In today's increasingly sterile living environment, the junkyard is a unique area representing real life and communal experience adapted for young children. This research highlights the great value parents, educators and children attach to this unique approach and the need to support educators, parents, community, and supervisors when implementing this pedagogy within different cultural contexts.

Kindergarten children's learning through repairing toys

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Abstract

The study engages with 5-6-year-old children's experiences with engineering through activities in a toy repair workshop. The aim of the workshop is to introduce children to a coherent toolkit as a central component of technical-engineering thinking. The theoretical foundation of the workshop comprises: (1) relevant activity for children; (2) in which they begin as skilled rather than novice practitioners; (3) a process comprising several activities to provide variety and sufficient time to enable learning; and (4) potential learning of declarative knowledge (tools and their uses) and procedural knowledge (problem solving: assessment, planning, and execution). The research questions relate to these hypotheses and examine the development of declarative and procedural knowledge by means of pretest and posttest interviews, and an analysis of the children's problem-solving processes and emotional states. For the study, the participant children contended with three different tasks during which they experienced repairing broken toys in different ways. In the activities, they selected the most suitable tools to execute the tasks from a toolbox. The main findings include: (1) Declarative knowledge – the repair activities yielded learning of relevant concepts. The children had a better understanding of the various tools' functions after the intervention; (2) Procedural knowledge – in all the children the repair process included the following components in one order or another: identifying the problem, planning, assessment, changing strategy, investigation, executing the solution; (3) Emotional states – several pronounced emotions emerged during the activities: joy, pride, enjoyment, interest, and frustration

Junkyard in the college: Experiential learning among teaching students

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Abstract

Based on preliminary independent research in the field of art infusion as taught to teaching-college students, this presentation will focus on the importance of experiential learning for preschool teaching. This case study is based on the so-called "junkyard method," by Malka Hass as a relevant tool for STEAM education.

The Digital Era in Early Childhood Education

Relationships between digital technology use, motoric development and temperament of children

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Abstract

While children get in contact with digital technology from an early age on, it is still unclear how this exposure effects the children's physiological development. The study „Young Children in the digital world (KiddiW)“ gathered questionnaire data of the family's extent of media and technology use, parents' pedagogical objectives and parenting behavior as well as children's temperament and motoric development. In an experimental parent-child-play setting, the children's heart-rate was measured with a 30-hour Holter-electrocardiogram, while playing two apps on a tablet and reading a picture book, followed by a standardized motoric test. This paper focuses on how much and what kind of digital technology Austrian families with young children, aged 18-30 months, use and which relationships with children's motoric development and temperament can be detected. The questionnaire-results show that 31.6 % of the children in the sample (N = 69) started to use digital technology before their first birthday. For the children television is the most used digital device, but books are the most used medium. One example for the influence of digital technology, is that the aspect of temperament “endurance/attention” correlates highly significantly with the children's use of digital media and technology, $r = -.349$, $p = .007$.

Preschoolers' Perceptions on Integration of Digital Technologies

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Abstract

The aim of the present study was to explore preschool children's perceptions on the integration of digital technologies in their school. The study included 171 Israeli children aged 3 to 6 who participated in in-depth interviews regarding their perceptions on digital technologies in their preschool. The interviews were analyzed using content analysis. Two major perceptions regarding digital technologies in the preschool were found: The degree to which digital technologies are necessary and the goals of the use of these technologies; the setting for using the digital technologies. About 50% of the children, especially the younger ones, claimed that use of these technologies is not necessary in preschool. However, most of them understood the importance of using these technologies and their contribution to many fields. In relation to the setting use, they referred to time and social aspects. The findings indicate that preschool teachers need to mediate these aspects more wisely and adapt them to the children's understanding and perception toward digital technologies, than actually takes place when they use them with the children.

Preschoolers writing with a digital device: The role of the digital home environment and parental support

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Abstract

Preschoolers writing with a digital device: The role of the digital home environment and parental support

The study assessed children's home digital environment in Israel and children's early literacy. It focused on the nature of parent-child writing interactions using a smartphone and explored its contribution to the child's early literacy beyond the parental involvement in selecting digital content and parental encouragement to use digital device for their children and parental support in joint writing task using smartphone.

Participants were 66 preschoolers from middle SES ($M = 62.35$ month) and one of their parents. Data collection was conducted at the child's home. Parents responded to questionnaires that assessed activities with digital devices at home. We assessed children's letter knowledge, phonological awareness and early writing. Parents were videotaped while helping their children write a shopping list of three products. We found positive correlations between the parental involvement in selecting their child's digital content, and the nature of parental writing support and the child's early literacy achievements. We found negative correlations between children's independent digital activities and their early literacy achievements. Regressions showed that the nature of parental writing support using the smartphone predicted children's early literacy beyond the parental involvement in choosing their child's digital content, and children's individual digital activities. The study reveals the need for parental involvement in their children's digital world. It shows the strength of parental writing support in promoting early literacy and emphasizes the potential of joint parent-child digital literacy activities in supporting children's early literacy.

Scientific Thinking and Inquiry-Based Learning

Cosmos in the Kinder: Empowering scientific thinking skills in preschool children

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Abstract

Our goal here is to promote scientific thinking abilities and incorporate astronomical vocabulary in preschool children. We want to present our cosmic neighborhood to children of lower mean class in the Metropolitan Region of Santiago de Chile. We worked with a sample of 96 kids from mean and lower mean class guided by 3 educators. We also included a control group of 56 kids and 2 educators. We instructed the teachers in astronomy and strengthened them in scientific thinking skills. They took 8 didactic sequences to their classrooms and developed them with the children. The results indicate that the influence of the intervention was major, with a statistical clear difference between the experimental and control groups.

The role of inquiry-based science learning on preschool children's learning process and outcomes

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Abstract

Inquiry-based science education is a well-established educational approach in which students engage in a process of scientific investigation in order to answer a research question. In the last years, it has gained increasing attention in the area of preschool, as it is believed to be a good strategy to engage young children with science topics and scientific ways of reasoning and communicating. In this study, we use Laevers experiential educational model as a framework to analyze a) the effect of an inquiry-based learning activity on preschoolers' conceptual knowledge about the relation between biological structure and function, b) its effect on children's level of involvement during the activity, and c) the mediating role of involvement on the relation between the learning activity and the learning outcome. The results show that the inquiry-based learning activity leads to higher levels of involvement in the participants. In the posttests, children of the inquiry-group made use of their conceptual knowledge when giving explanations about the anatomy of different organisms. Further, we found that involvement mediates the effect of the inquiry-based approach on children's conceptual explanations.

Multiple encounters with scientific exploration - Enhancing preschoolers' inquiry and self-regulation capabilities

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Abstract

Studies show that children possess cognitive abilities enabling them to understand scientific concepts and implement inquiry processes. Policy and standards' documents (NGSS, 2013; NRC, 2012; NSTA, 2014) recommend bringing young children to a level of open, independent inquiry. To this end, skills and knowledge should be fostered by offering opportunities to engage in scientific inquiry processes on a regular basis. Therefore, this intervention study included the enrichment of preschools' Nature Centers for 5-months of daily, free-play, scientific experiences, with a wide range of natural objects (e.g. shells, stones); liquids and solid materials; and tools, including measuring spoons, scales, measuring tapes, textbooks, and field guides. The study examined the effect of this intervention on preschoolers' inquiry behaviors and skills. The 200 children, mean age 66.49 (SD 5.18), were randomly divided into intervention (enriched Nature Center) and comparison groups (unchanged, exhibition-like Nature Center). An open-ended pre-post- scientific exploration task with a detailed scoring scheme was developed to assess inquiry behaviors and skills. All children were video recorded and their verbal and behavioral responses were analyzed and coded. Results show the intervention group scored higher in their level of questions, hypothesizing, and drawing conclusions. Significant main effect of group was found in the number of questions asked and ability to plan [$F(1,197) = 7.67$, $p = .006$, $\eta^2 = .04$ and $F(1,197) = 13.60$, $p = .000$, $\eta^2 = .06$, respectively]. Our findings show that providing preschoolers with multiple daily encounters with free-play scientific exploration, enhances their inquiry capabilities and scientific thinking.

Executive Functions, Attention, Theory of Mind And Self-Regulation

Learning in young children: the importance of screening and support

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Abstract

In this talk I will consider the importance of learning and executive function to the development of skills in young children and outline a screening and support approach targeting these skills, based on a free intervention designed to support children with difficulties in keeping up with their peers, illustrating this with data from a series of studies with 4-5-year old children in the UK.

Strengthening Children's Theory of Mind and Social Skills Using Animated Cartoons

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Abstract

The effects of conversation about mental states on children's theory of mind (ToM) understanding and social skills during shared storybook reading are well established. However, whether this effect also applies to fictional stories presented in audio-visual formats remains unclear. Hence, the present study examined the effect of a training program using film as an educational tool. Our aim was to foster children's ToM and social skills to enhance their social competence and peer relations. A total of 37 children were recruited through local kindergartens. Their age at pre-test ranged from 3 years 1 month to 5 years 9 months ($SD = 0.74$ years 3.36 months). The participants were either assigned to a mental state talk condition ($n = 19$) or a neutral condition ($n = 18$). During each intervention session, the participants watched a short cartoon together with the experimenter, who then led a semi-structured discussion. In the mental state talk condition, the discussion focused on the characters' mental states. In the neutral condition, on the other hand, the discussion focused on the physical aspects of the same episode. Children's ToM and social skills were assessed at both pre- and post-test to evaluate the effect of the intervention. Overall, the results revealed no significant difference between the conditions when measuring children's ToM and social skills. However, we were able to successfully implement an intervention using animated cartoons to elicit conversations about mental states.

The role of play and pedagogy in shaping preschool children's self-regulation

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Abstract

The present study examined the efficacy of a behavioral self-regulation program in two preschools ($N = 65$). Using a self-regulated learning (SRL) framework, we investigated how behavioral SRL may be scaffolded by teachers in a preschool classroom through a voice regulation training program (VRTP). The VRTP preschool ($N = 31$) comprised the experimental group (EG), which was compared with a control group (CG) preschool that received no training. The VRTP uses age-relevant techniques, such as games and visual aids, to provide the teacher a platform for enhancing voice awareness and modulation, thereby enhancing behavioral SRL. Behavioral, emotional, and cognitive SRL and early achievement of math and verbal skills were assessed before and after the VRTP, and levels of noise were assessed on a weekly basis using an electronic noise meter in designated areas. The EG participants demonstrated significant improvement in behavioral and emotional SRL, in language, and in voice regulation compared with children in the CG. The current findings provide evidence that SRL can be scaffolded in preschools by the teacher. These results have the potential to inform preschool curricula that enhances student self-regulation in preschool. Implementation of programs that enhance SRL in preschool may also have beneficial implications for developmental trajectories.

Parental Factors Moderate the Effectiveness of Neurofeedback for Early Childhood ADHD—A Theoretical Model

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Abstract

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder, affecting approximately 5 percent of children, with symptoms typically arising in early childhood - causing social and academic impairments. Neurofeedback (EEG Biofeedback - NF) has recently become an effective evidence-based treatment for ADHD. Although much is known about NF for the treatment of ADHD among children above 8 years of age, knowledge about NF for early childhood participants is limited. Furthermore, whereas child-focused parental factors (i.e., parenting style) during NF were found related to treatment's outcomes, the treatment-focused parental factors (i.e., parent-therapist interaction; parental management of treatment) have yet to be addressed. As parents are the major caregivers during a child's early development, it is essential to understand their role when implementing NF treatment for ADHD in early childhood. Aiming to address this issue, we present a comprehensive theoretical model describing parent-related factors that moderate NF effectiveness in early childhood, using two clinical case studies for demonstration. Two 7-year-old children diagnosed with ADHD were treated with NF (N1 – female; N2- male). Data collection comprised of the following measures: Brain mapping - Quantitative Electroencephalographic Scanning (QEEG) assessment, MOXO (pre and post), clinical interviews with parents, and documentations of parent-therapist interactions. Our model presents intrinsic parental factors (motivation, belief in NF, parental executive functions) as well as extrinsic parental factors (parent-therapist relationship: frequency and quality of interactions) that are assumed to affect the effectiveness of NF in early childhood. Theoretical contributions and implications for discerning parents' role during NF implementation in early childhood are discussed.

Families, Parenting and Diversity

Segregation in Early Childhood Education and Care in Germany

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Abstract

Segregation prevents diversity and social inclusion (European Commission, 2011; Vandebroek, 2015). The project “Segregation and ECEC Provision” funded by the German Federal Ministry of Education and Research (funding code: 01NV1809B) investigates social and ethnic segregation in German ECEC using data from the National Educational Panel Study and surveys from the project “Early childhood education and care quality in the Socio-Economic Panel”. On the basis of information reported by preschool teachers (n=149 to n=685) and directors (n=207 to n=857), we explore segregation on group and setting level using empirical-quantitative methods. Our findings indicate pronounced segregation in ECEC throughout Germany. The proportions of children a) having a migration background, b) origin of language other than German, c) in need of language support, d) from lower social classes, e) exempt from fees, and f) whose parents have a university degree vary from 0% to at least more than 71% or even up to 100%. A closer look, however, reveals some interesting regional and state-level differences.

Autonomy support, controlling parenting and child adjustment at toddlerhood

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Abstract

Self-Determination Theory (SDT) is a macro-theory of well-being and optimal functioning. SDT distinguishes between autonomy-supportive parenting and controlling parenting, with numerous studies indicating that the former facilitates academic performance, rule internalization, and social adjustment among preschool and school-age children. Yet little is known about the effect of parenting styles at earlier ages, such as toddlerhood, arguably because of the belief that autonomy has a meaningful part in older children's functioning only. This study attempts to shed light on the importance of autonomy-supportive and controlling parenting styles on very young children, and has two aims: first, to examine how parenting styles are related to child behavior problems at 20 months; second, to investigate the motivational antecedents of parenting styles by assessing parental-role motivations at four months postpartum.

Participants were 178 mothers who took part in a longitudinal study. Parental-role motivations were measured at four months postpartum, and parental styles and child behavior problems were measured at 20 months. Results showed that controlled parental-role motivation predicted a controlling parenting style, which, in turn, predicted child behavior problems (i.e., internalizing and externalizing problems). Autonomous parental-role motivation predicted an autonomy-supportive parenting style.

In sum, this study shows that autonomy plays a considerable role in early childhood adjustment; suppressed autonomy (i.e. controlling parenting styles) may lead to child behavior problems. In addition, parenting styles at toddlerhood may have motivational antecedents, which can be identified as early as four months postpartum.

Factors Influencing Parental Satisfaction of School Support for Bilingual Children with Dyslexia

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Abstract

Bilingual children with developmental dyslexia (DD) are exposed to a unique set of challenges and may face barriers to adequate school support. Bilingual children's needs may be disregarded as literacy difficulties may be presumed to reflect a lack of exposure to the societal language. Learning to read bilingually may also result in different literacy outcomes from their monolingual peers as the two systems may interact (Lallier et al., 2018). Moreover, parents of bilingual children may experience challenges speaking the societal language, impacting on their ability to communicate with school and access services.

To enable children with DD to access the curriculum and achieve academic success, they need additional educational support including, inter alia, appropriate assessment, interventions, and accommodations. The evaluation of the additional educational services is necessary to ensure that children with DD are receiving the support they need, and to identify any gaps in the service. To achieve this goal, many studies focus on obtaining information from parents (e.g. Armstrong et al., 2010; Haws, 2017). These studies highlight the views and concerns of parents and make recommendations for improvement. However, there is no mention of bilingual children with DD.

This study aims to evaluate parents' perspectives of current services that bilingual children with DD experience in school. Parental satisfaction of school support and a multitude of factors expected to influence their satisfaction levels are considered. Parents of 14 English-Hebrew speaking bilingual children aged 6-17 years old ($M = 12$, $SD = 4.02$) filled in an online questionnaire specifically designed for this study. In contrast to previous research on parental satisfaction that indicates that parents are typically positive about school support, the parents in this study present with mixed satisfaction rates. 21.43% of parents strongly agreed that they were satisfied with the support that their child received at school and 28.57% strongly disagreed with the statement. 42.86% either disagreed or strongly disagreed that their child was in the right educational setting. Three factors most strongly associated with satisfaction levels were identified. Firstly, teacher's management of DD, including the ability to support the child in class and motivate the child to succeed ($r(12) = .79$, $p < .001$). Secondly, child's proficiency of the societal language, Hebrew ($r(12) = .75$, $p < .01$). Thirdly, school's management of DD, including the availability of sufficient resources and the use of appropriate intervention techniques ($r(12) = .68$, $p < .01$). In contrast, child's chronological age, English proficiency, severity of DD, and factors regarding the identification of DD (e.g. age suspected of DD, and age diagnosed with DD) were very weakly or weakly correlated with satisfaction levels, and the correlations were not statistically significant. Findings contribute to the literature on educational services for bilingual children with DD. They have implications for the education system and the services provided in schools for bilingual children with DD.

In sync?! Exploring early childhood mother-child interpersonal coordination

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Abstract

During early childhood, the caregiver-child relationship plays a crucial role in a child's cognitive, language, and social-emotional development. We aimed to understand how coordinated and adaptive mother-child relationships emerge from everyday moment-to-moment interactions between mothers and their typically developing 3- or 4-year old children. Additionally, as early childhood is a period of rapid development and changes in the nature of interactions, we aimed to explore the developmental trajectory of mother-child interactions. Accordingly, we adopted a bidirectional and microgenetic approach, by including both mother and child behavior, and zooming in on the dynamics of moment-to-moment interactions. In doing so, we shifted away from a focus on maternal behavior on a more global level (e.g., over the course of a whole interaction session) which has prevailed interaction studies so far. Video-observations from 30 mother-child dyads were available from an ongoing longitudinal study on motor skills, executive functions and language abilities of 3- to 6-year old children from Dutch-speaking families. Dyads carried out a semi-structured play task, the Etch-a-sketch. As interaction is a multifaceted and multimodal phenomenon, we included measures of interaction behavior in several modalities, that is, verbal communication, affective states, and postural movement. Coding procedures were designed to provide bivariate time-series data. Nonlinear time-series analysis, such as recurrence quantification analysis, will provide insight into how mothers and children mutually coordinate interactions within and across modalities. Given the malleability of maternal- and child behaviors, and sensitivity to interventions during early childhood, our findings may aid in facilitating healthy and adaptive caregiver-child interaction.

The Home Learning Environment

Interplay between parental self-efficacy, home learning activities and children's socio-emotional and language skill

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Abstract

Children's socio-emotional and language skills help them to succeed at school and to maintain their mental health (Durlak, Domitrovich, Weissberg, & Gullotta, 2015; Zins, Weissberg, Wang, & Walberg, 2004). Parental self-efficacy is positively related to child outcomes and a stimulating home learning environment, which in turn fosters children's socio-emotional and language skills (Day, Factor, & Szkiba-Day, 1994; Giallo, Kienhuis, Treyvaud, & Matthews, 2008; Jones & Prinz, 2005; Peacock-Chambers, Martin, Necastro, Cabral, & Bair-Merritt, 2017). Activities within the home learning environment are linked with children's school readiness in the areas of emerging literacy skills and social functioning (Foster, Lambert, Abbott-Shim, McCarty, & Franze, 2005). However, we do not know how all three factors, parental self-efficacy, home learning activities, and children's socio-emotional and language skills are interrelated. This study draws on data from 727 parent questionnaires that were conducted within the German federal programme 'Language daycare centers: because language is the key to the world' in 2019. A path model shows that parental self-efficacy is significantly related both to general and domain-specific home learning activities and to children's vocabulary and socio-emotional skills. The results point to the importance of parental self-efficacy for child outcomes and home learning activities.

Home learning environment, childcare, and academic language proficiency in primary school

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Abstract

Previous studies support the assumption of the importance of rich home learning environments for academic language proficiency, but fail to distinguish its dimensions, which have often been shown to be differentially associated with academic competencies. Furthermore, the role of the quality of early childhood education and care (ECEC) for the development of academic language proficiency has not been focused so far, although most children in Western countries attend ECEC before they start school. Guided by an ecological perspective, we investigated the effects of various dimensions of the home learning environment and the ECEC quality for student's academic language proficiency in primary school (N = 554 children; Mage in months at Grade 1 = 89,23; 48.1% girls). We use a self-developed test on academic language in which children had to hear a story with features of academic language, which was split up in short segments, received questions on text with three statements each, and then decided whether given statements on the text were true or false. After students' age, gender, family background, their general language knowledge and working memory were controlled for, only significant positive effects of students' early literacy activities at home on students' academic language emerged. Our results underline the importance of the stimulating home literacy activities for students' academic language at the start of the primary school. Quality in childcare did not emerge to be important for students' academic language in primary school, which may be due to low variations in German ECEC quality.

Parental Interaction Quality, Home Environment, and Children's Academic Outcomes

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Abstract

Parental Interaction Quality, Home Environment, and Children's Academic Outcomes

Aims: The association between parents' work-family conflict and children's academic outcomes is an understudied topic. This study investigates the role of four measures—parental working hours scale, parental age, parental interaction quality, and socioeconomic status (SES)—and the quality of learning materials at home in relation to children's cognitive outcomes.

Methods: The study participants included 91 kindergarten children from six different kindergartens in Israel, their parents and kindergarten teachers. Each parent completed a questionnaire to assess the quality of parent-child interaction and the quality of learning materials in the home environment. Further, the kindergarten teacher completed a survey for assessing the child's kindergarten academic behavior readiness. Finally, the researchers observed the children at kindergarten for two-hour periods to measure their academic engagement durations in six types of cognitive behaviors.

Results: In terms of the quadratic model (parental working hours scale, parental age, parental interaction quality, and SES), the results indicated that personal antecedents played a key role in children's cognitive achievement. Parents who increased their working hours were less likely to be available for their children, thereby providing less qualitative interaction. A conducive learning environment was created by more educated mothers and younger fathers from high-SES households. The quality of paternal and maternal interaction and quality of learning materials at home both played significant roles in children's academic outcomes.

Discussion: The results are discussed in terms of the resource allocation modality, and they emphasize the importance of parental interaction quality for shaping children's cognitive environment and development.

How does home learning environment explain bilingual language skills of Turkish children in the UK?

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Abstract

Migration to the United Kingdom has led to increasingly diversified school populations in the last few decades. Children who grow up in minority families tend to struggle at school if they receive less support from their families to acquire the language skills that are necessary for their school achievement. The home learning environment (HLE) has been found to be important for language and literacy development; school readiness and socio-cognitive development of children. For minority children home environment plays an important role for their language attitudes and identity development. This paper investigates how HLE characteristics (mothers' language use, language, literacy, and learning activities) predict Turkish and English vocabulary skills and language attitudes of 4- to 6-year-old Turkish-speaking children in the UK (N = 68) through socioeconomic factors. The data was collected in two home visits for each child using language tests, a structured HLE questionnaire, observations and voice-recordings of experimental mother-child interactions. Findings show that mothers' language preference at home and literacy and language activities with children are the most important predictors of children's language skills. Mothers' active involvement and use of diverse vocabulary in conversation with their children is especially important for maintaining children's heritage language skills.

Problem Solving and Reasoning

Parents' Self-Efficacy Beliefs and Sensitivity in Preschoolers' Problem-Solving Behavior

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Abstract

The development of self-regulation is seen as an important hallmark in early childhood. While self-regulation skills are still developing, children are dependent on parents' co-regulation. However, little is known about how parental co-regulation is influenced. Therefore, this study explores the role of parent's affect and self-efficacy beliefs that shape parents' behavior and sensitivity. Parents of 40 three to six-year-old children were asked to rate their positive and negative affect. Parent-child-dyads were then observed working on multiple problem-solving tasks for ten minutes. Domain-general self-efficacy beliefs regarding parenting as well as domain-specific self-efficacy beliefs regarding scaffolding and sensitivity were measured using questionnaires. Parent's self-efficacy beliefs, but not their positive and negative affect, were found to be associated with parenting and problem-solving performances. The results further showed that this relation differed in dependence of child's age. High problem-solving performances were associated with low self-efficacy beliefs regarding sensitivity in parents of three-and-four-year olds, whereas the relationship in parents of four-year-olds showed an opposite effect.

Development of Reasoning About Complex Systems Among Young Children

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Abstract

The paper explores how young children explain complex systems, focusing on developmental (kindergarten and second graders), and contextual (physical or social) aspects. Understanding complex systems is becoming a critical ability as many world problems and local contexts are entwined and inter-related.

Existing research about learning about complexity has rarely been tailored for younger children and has investigated children's capacities to understand simpler complex systems, for instance robots (Levy & Mioduser, 2010), and beehives (Danish, Peppler, Phelps, & Washington, 2011).

The study used individual videotaped interviews with 16 kindergarteners and 17 second graders. The items concerned familiar phenomena: marbles colliding in a box (physical) and congestion when leaving class (social). Interviews were analyzed for systems-related ideas using a coding table derived from the literature (Jacobson, 2001, Levy & Wilensky, 2008, and Danish et al., 2011), including dimensions such as levels, emergence, and interactions.

Seven-year-olds used a greater variety of complexity ideas than four-year-olds for the physical system, but not for the social system. Some complexity ideas e.g. interactions between entities were highly frequent; other ideas such as the stochastic nature of complexity and emergence were rarely used. More older children used certain complexity ideas e.g. levels and non-linear events than younger children.

A key finding is that young children use complexity ideas. This is surprising because in previous studies into adults' complexity thinking, difficulties were found unless they were experts in their respective fields (Jacobson, 2001; Hmelo-Silver, Marathe, & Liu, 2007).

A Kindergarten Educational Escape Room – Insights

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Abstract

This study aims to spotlight a unique kindergarten experience - the “Educational Escape Room” (EER). The EER is based on a social game characterized by a frame story that challenges the players to find clues and solve riddles in order to escape the room. Nowadays, it is used as a pedagogical method which combines “Game Based Learning” and the use of 21st century skills like collaboration, communication, creativity and critical thinking. Despite its pedagogical value, EER research literature pertaining to kindergarten children is still in its infancy. This study therefore aimed to understand the value of the EER in kindergartens, while focusing on one of the 21st century skills: collaboration. For the purpose of the present study an EER was designed with puzzles and riddles suited to kindergarten children. Fifteen children with a mean age of 50.33 months participated in the study. A qualitative research approach was adopted using video observation and researchers’ notes. Three prominent findings were revealed when focusing on the children's collaboration behaviors. (1) The children created and adhered to their own rules in an attempt to successfully navigate the EER; (2) the children used plural vocabulary, such as the word “we”, which they added to most of the verbs; (3) the children offered help to their friends. The results show that the EER stimulated collaborative behaviors which were expressed in “fairness collaboration” and effective team-work, and that can be used in kindergarten to promote collaborative skills. Furthermore, the study may serve to deepen our understanding of the use of the EER in kindergarten.

Early Literacy

The “How’s” and “Who’s” in Storytelling: Scaffolding the Neural Networks for Reading in Preschoolers through Storytelling: Functional MRI, EEG and Eye Tracking Evidence

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Abstract

Reading development is dependent on genetic and environmental components. Neuroimaging studies have demonstrated the involvement of executive functions, visual processing and language networks, all support future reading abilities in young children listening to stories. Environmental components include home literacy environment, joint storytelling and the identity of the reader, which help scaffolding future reading. However, the neurobiology of the storytelling approach and the role of the storyteller identity in setting up the scaffold for future reading abilities are still unknown.

In a series of studies, we examined the neurobiological correlates for home literacy environment, dialogic reading approach and the role of the reader (parent vs an experimenter) focusing on networks and components related executive functions, language and visual processing in young children using functional MRI, EEG and an eye tracker device.

Results demonstrate the recruitment of visual processing, language, and executive functions networks, as well as white matter tracts related to these abilities both crucial for reading, in preschoolers while listening to stories, engaged with the parent in reading activity and when participating in a dialogic reading activity. Greater fixation on the text vs the images was observed when participants were read to by the parent vs by the experimenter.

We conclude that when preschoolers are exposed to books, participate in a dialogic reading activity as well as when reading with a parent, neural circuits supporting future reading ability are engaged and set up the foundation for future reading abilities.

Early Literacy and Family Engagement for Low-Income Students

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Abstract

This study randomly assigned kindergarten students on the class level to either use a computer-adaptive reading program throughout the school year or have business-as-usual literacy instruction. Students were low-socioeconomic status (SES), with most (97%) qualifying for free or reduced lunch, and all were African American. This randomized controlled trial (RCT) aimed to study how computer-assisted instruction (CAI) impacts literacy skills of early elementary school students across literacy strands of the Northwest Evaluation Association Measures of Academic Progress (NWEA MAP). The study was conducted in a public-school district in Indiana during the 2017-2018 school year, with students assessed at the beginning and end of the school year. Analysis was conducted using hierarchical linear modeling (HLM) to account for the nested structure of the data within classrooms. Findings indicated that students who used the computer-adaptive reading program significantly outperformed their control counterparts across all five literacy strands assessed. Effect sizes were analyzed and, after the nested design of the study was accounted for, were found to indicate substantive benefit from the use of the computer-adaptive reading program, with use in the program accounting for more than half the variance in scores across all five literacy strands. These findings indicate that CAI can positively impact literacy scores of kindergarten students after using the program for one school year and can perhaps address the achievement gap for African American students and low-SES students.

With or without text? Preschoolers' comments and questions on mental states during book sharing

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Abstract

Theory of Mind (ToM), defined as children's understanding of their own and others' mental states, is a foundational social cognitive skill. Recent research showed that preschool teachers' mental-state references during book sharing promote children's ToM development. In the present study, we focused on preschool children and compared their discourse on mental states during two book sharing contexts, with small groups of children and their teacher – reading a book and telling a wordless book. Participants were 505 children from 100 middle SES preschools. Our findings revealed variance among children in all the measures. Some children frequently commented on the books, asked questions, or referred to mental states, and others did so rarely or not at all. As we expected, in the telling context, preschoolers elaborated more frequently on mental states (cognition, emotion and desire terms, and references to false belief), asked more questions and took more initiatives than during the reading context. The findings highlight the contribution of telling wordless books, in which teachers do not have to stick to the text, for enhancing children's ToM references and active participation in discussions on books.

Language

Two styles of infant-directed signing in Israeli sign language (ISL)

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Abstract

The study deals with the question: do deaf parents seek to explicate the iconic basis of the signed words they address to their infants in order to facilitate word learning? Two longitudinal case studies followed two hearing infant's bimodal bilingual acquisition of ISL and Hebrew from the age of 10 to 40 months. Once every two months we analyzed the input that the deaf mothers addressed to their infants. The results show that both mothers were sensitive to the communicative abilities of their infants in different periods of language acquisition, adapting their inputs accordingly. In the pre-linguistic period infant-directed input was characterized by repetitiveness to facilitate infant's visual perception. During the mid-one-word period mothers used pantomimic productions to promote form-meaning mapping. The mothers used additional communicative actions for clarification, such as: pointing to the iconic base of the form of referent, acting upon an object the form iconically represents or playing 'games' with the form, allowing their infants to interact with iconicity. Our results lead to the conclusion that motherese was not only perceived by caregivers as scaffolding for language learning, but also that caregivers actually change the scaffolding they think is useful for infants' learning over the course of language development. They support recent claims that iconicity may play a role in signed language acquisition: 'revitalization' of the iconic basis of the forms may serve as scaffolding allowing infants to establish Link - s to the more conventional version of the forms.

Procedural and declarative memory in Developmental Language Disorder: Evidence from kindergarten children

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Abstract

According to the Procedural Deficit Hypothesis (PDH), Developmental Language Disorder (DLD) may be largely explained by abnormalities of the brain structures underlying procedural memory which is defined as the learning and long-term memory that relies on the Basal Ganglia and related circuits dedicated to the acquisition of skills and habits. Evidence supporting the PDH mainly come from the use of only one task, the serial reaction time task, which, moreover, focuses on the learning phase. However, the unique contribution of specific brain circuits to memory formation is defined upon the consolidation on a new memory. In the current study a grapho-motor learning task, the invented letter task (ILT) was used for assessing procedural memory, and an associative-learning in a 2D object location task was used to test declarative memory. The learning, 4-h post learning consolidation and 2 weeks retention of the tasks were studied in 23 5-year-olds children with DLD and 30 peers matched for age, gender, and non-verbal IQ. The results of the study confirm post-learning impairments in procedural memory in DLD, in support of the PDH. Furthermore, the results show for the first time impaired long-term (2 weeks post training) recall of declarative information in children with DLD. Long-term recall of declarative learning was not studied in children with DLD before. The results also show associations of the two memory systems in the long-term phases of learning, 4 hours and 2 weeks post-training, raising the possibility that children with DLD are aided by their declarative memory while learning new skills.

Morphological and lexical knowledge in the second language of bilingual children

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Abstract

Aim: The study examined the influence of bilingualism on the acquisition of Hebrew plural and agreement structures by Russian-Hebrew bilinguals and Hebrew monolinguals, examining similarities and differences in the acquisition between two populations. Studying this issue in the context of two morphologically rich languages has important implications for a discussion of morphological and morpho-syntactic processing in bilingualism

Method: 180 children (95 bilinguals) aged 4-8 years participated in this study. Three structured sentence completion tasks were used: singular agreement task, noun pluralization task, and plural agreement task. The items differed in the characteristics of their singular form, in stem type, in plural suffix, in Hebrew gender, and in Russian gender.

Results: Three main properties of bilingual development were observed in this study: (1) an early and rapid acquisition of the grammatical and morphological rules alongside restricted lexical knowledge pertaining to irregularities in the system, (2) an almost complete identity in acquisition patterns compared to monolinguals, and (3) a consistent gap from monolinguals.

Conclusions: Bilingualism has a distinct effect on the different language domains (lexicon and morpho-syntax). The rapid acquisition of the morphological and morpho-syntactic rules of L2 is possible for two main reasons: the high regularity and transparency of the Hebrew gender and number systems, and the similarity in the properties of the gender agreement systems of Russian and Hebrew. The lexical challenge directly influences on the morpho-syntactic performance of children, as manifested in difficulties in the structures that include lexical exceptions.

Facing challenges: Translation and adaptation of vocabulary measures to other languages or cultures

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Abstract

Vocabulary indicates verbal ability and is an important component associated with reading, learning and cognitive ability. Diagnosing a child's vocabulary enables assessment of strengths and difficulties and construction of a treatment plan. An appropriate tool is needed for researchers, therapists and educators. One of the most frequently used receptive vocabulary tests is the Peabody Picture Vocabulary Test- PPVT, which has been updated several times. Others have attempted to translate the stimuli without considering crucial adaptations needed for reliability, validity, suiting another language and culture, or providing local standards.

The first aim of the present study is to translate and adapt the PPVT-5 to the Hebrew language and the Israeli culture. The second aim is to create local receptive vocabulary standards for the Israeli Hebrew speaking population with a special focus on young children. Preliminary findings indicate that our version closely matches the American standards. Considerations regarding linguistic, cultural and register gaps are discussed. Our hope is that upon reaching local standards, the Hebrew PPVT-5 will become a main indicator of verbal ability for children and will aid early assessment and construction of personalized treatment plans for children with special needs. We also believe our experience will bring awareness to others interested in translating and adapting similar measures to other languages and cultures.

Early Math Skills

The importance of specific math language for early proportional reasoning

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Abstract

Previous research indicates that language (be it general or specific math language) plays a crucial role in mathematical thinking and learning. One part of mathematics that is particularly hard to apprehend for children, is proportional reasoning. At the same time, research suggests that already at an early age, children are able to make sense of some proportional situations. However, to our knowledge, there are no studies that investigated the association between language and early proportional reasoning. The present study (n=343) aims to address this gap by longitudinally investigating if general vocabulary in kindergarten and specific math vocabulary for proportional reasoning in the first grade of elementary school are predictors of proportional reasoning abilities in the second year of elementary school. A hierarchical linear regression analysis showed that specific math vocabulary of proportional reasoning in the first grade of elementary school is a unique predictor for proportional reasoning abilities in the second grade of elementary school over and above age, sex and general vocabulary. More attention to specific math vocabulary in young children might stimulate early proportional reasoning. However, more evidence from intervention studies is needed in order to further explore the educational implications of the relation between specific math vocabulary and early proportional reasoning abilities

Fostering Responsiveness in early Mathematics Learning

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Abstract

From a co-constructive perspective, interactions between adults and children are key variables for learning processes, especially in early childhood. The following paper focuses on such interactions that emerge in ‘mathematical situations of play and exploration’ (Vogel, 2014, S. 223) in German kindergarten. These mathematical situations are conducted by adults who are specially trained by so-called ‘design patterns of mathematical situations’ (Vogel, 2014, S. 232; in the following called ‘mathematical design pattern’). Each pattern describes a mathematical situation that is designed by the research team and can be realized with children in kindergarten by using mathematically rich but mostly common material. The mathematical design pattern includes descriptions of the mathematical content of a designed situation as well as a variety of possible prompts that can be realized to support children’s interactions with each other, the adult and the mathematically rich materials.

In our contribution we will analyze how the use of the mathematical design pattern fosters responsiveness (e.g. Koole & Elbers, 2014) in adult-children -interaction, especially when adult’s acting is aimed at children’s mathematical as well as interactional competencies. Therefore, we present two scenes from our empirical data, which show different levels of responsiveness. Based on a qualitative interpretative and comparative analysis we carve out how children are supported in contributing mathematical creative ideas and how these ideas are interactively integrated in the process of negotiation of mathematical meaning within the interactions by the adult. Finally, we illustrate how our findings can be fruitful for professional development programs of preschool teachers.

“MusiMath”: An Intervention Program for Learning Rhythm and Fractions

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Abstract

Music and mathematics require abstract thinking and use symbolic notations. Controversy exists regarding transfer from musical training to math achievements. The current study examined the effect of two integrated intervention programs representing holistic vs. acoustic approaches, on fraction knowledge. Three classes of fourth graders attended 12 lessons on fractions: One class attended the "MusiMath" holistic program (n=30) focusing on rhythm within the melody. Another class attended the "Academic Music" acoustic program (Courey et al., 2012) (n=25) which uses rhythm only. The third class received regular fraction lessons (comparison group, n=22). Students in both music programs learned to write musical notes and perform rhythmic patterns through clapping and drumming as part of their fraction lessons. They worked toward adding musical notes to produce a number (fraction), and created addition/subtraction problems with musical notes. The music programs used a 4/4 time signature with whole, half, quarter and eighth notes. In the math lessons, the students learned the analogy between musical durations and $1/2, 1/4, 1/8$ fractions, but also practiced fractions other than $1/2, 1/4, 1/8$. Music and math were assessed before, immediately following, and 3 and 6 months post-intervention. Pre- to post-intervention analyses indicated that the “MusiMath” group showed greater transfer to intervention-practiced and unpracticed fractions than the comparison group. The “Academic Music” group only showed a trend on practiced fractions. Although both music groups outperformed the comparison group 3- and 6-months post-intervention on practiced fractions, only the “MusiMath” group demonstrated greater gains in unpracticed fractions. Gains were more evident in practiced than in unpracticed fractions.

The relationship between early mathematical and literacy skills among native Arabic speaking children in kindergarten

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Abstract

There is a growing recognition concerning the connection between language and mathematical skills, and their development appears to be related in a bidirectional manner that persist longitudinally (Kleemans, Segers, & Verhoeven. 2011; Claessens & Engel, 2013). The mutual relationship between these two domains, has been examined mainly in English speaking children and other European language. Taking into count the unique characteristic of the Arabic language, it is interesting to examine the relationship between mathematics and language skills in Arabic. The aim of current study is to investigate the connection between early literacy skills and numeracy skills in kindergarten among native Arabic speakers.

Transcoding Errors of Two-digit Numbers by Arab First Graders

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Abstract

The study focuses on the effect of the lexical-syntactic structure on the patterns of errors by Arab first graders in tasks involving reading two-digit number and writing two-digit numbers to dictation. Children made few change or omission errors, indicating that they had little problem with the lexical aspects of the counting system. However, they made frequent substitution errors (e.g. 23 for 32), especially in the number reading task, and especially for numbers that depended strongly on the numerical syntactic structure. Such errors were less common for decade numbers and for the 11 to 19 number range than for other 2-digit numbers. The results suggest particular difficulty with the syntactic rather than lexical aspects of the counting system. The syntactic aspects may be particularly difficult for Arabic-speaking children, due to the inversion feature of the Arabic counting system.

The Relation between RAN (Rapid Automatized Naming) and Early Literacy and Numeracy

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Abstract

Studies have found that children who exhibit difficulty acquiring literacy and numeracy knowledge in kindergarten usually also have difficulty in acquiring reading and calculating skills later at school (Aunola et al., 2004). Therefore, early identification of at-risk children for learning disabilities and early intervention at kindergarten are crucial (Bailet et al, 2013). RAN (rapid automatized naming) can be used as a simple tool for early identification of specific difficulty in literacy and/or numeracy. This study examined the connection between six different RAN tasks (colors, shapes, quantities, finger-configuration, numbers and letters) and early literacy and numeracy skills among 86 kindergarten age children, in order to understand the connection between RAN and early academic abilities. The result indicated that all RAN tasks represent one general component, and it was found to correlate with most of the early-academic skill. In addition, RAN tasks, that represent mainly rapid retrieval, had a stronger correlation ($r > 0.54$) to early academic skills like letter knowledge and counting, because they represent retrieval of simple information without the need for manipulation. On the other hand, complicated tasks, like phonological awareness and calculating, were found to have a weaker correlation to RAN skills ($r < 0.35$). It is possible that RAN represents general processing ability (Catts et al., 2002) at kindergarten age, and it seems to be a critical skill in acquiring literacy and numeracy skills. these finding have educational implications in helping to identifying at-risk children for academic difficulty and in developing intervention programs to improve these skills among kindergarten children.

Emergence of gender differences in mathematical competencies in light of mother-child-interactions: Can differences between boys and girls be explained by different levels of literacy and numeracy stimulation?

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Whereas gender differences in mathematical competencies favoring boys are well researched for school age and late Kindergarten age, not much is known about their emergence. Using data from the first wave of the German longitudinal study BiKS-3-10 (N=496), this contribution focuses on children age 3-4 and concentrates on the effects of early numeracy and literacy stimulation during observed mother-child interactions. First analyses using hierarchical regressions show slight and persistent gender differences in mathematical competencies in favor of girls under control of the domains of stimulation, as well as the structural characteristics of the learning environment, child characteristics, parental views and observed general interactions between mother and child. Thus, the specific domains of stimulation within the mother-child interaction cannot explain the advantage of girls over boys. Nevertheless, the analyses show, that there seem to be no different intensity of literacy stimulation for boys and girls, but slightly of numeracy stimulation favoring boys. Since all models controlled for structural characteristics of the family as well as child's characteristics, I conclude that at this early age girls seem to have a small developmental advantage with regard to mathematical competencies.

ECEC Environment and Child Development

How ECEC center quality correlates with scientific interest of preschool children & How to measure it.

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Abstract

Scientific learning and competence development is an important educational goal for preschool children. “Interest” is a specific form of motivation for learning with high quality and specific manifestation according to pedagogical interest theory¹. To date there is little empirical research concerning ways of measuring scientific interest.

In the current study, we used a behavioral observation method and standardized questionnaires to address this question. We developed a novel way to measure scientific interest in 5-6-year-old children. We also describe correlations of the measured scientific interest with structural, process and professional quality of the childcare center.

150 children of 4;5 – 6;5 years of age from 20 German childcare centers and their teachers participated in the study.

Standardized 5-minute behavioral observations with material for “sinking and swimming” were video-recorded and coded for behavior which would be characteristics of scientific interest. Additionally, scientific interest was measured with a valid questionnaire (KOMPIK). Data on the quality of structure and processes as well as professionalism was collected via questionnaires from the head of the childcare center and the teacher responsible for scientific education.

Preliminary analyses show that (1) Early scientific interest as measured with the behavioral observation correlates highly with the scientific interest as measured with the KOMPIK-questionnaire ($n=26$, $p>.002$, $r=.586$); (2) Preliminary results point toward variance explaining effects of the different quality dimensions for degree of scientific interest.

Challenges facing ECE interns regarding their relations with parents, in a culturally diverse society

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Abstract

Communication with parents is a central aspect of the teaching profession. Far-reaching changes in the social reality (such as, cultural heterogeneity, new family structures, integration of special-needs children) have influenced family-school relations, making them particularly challenging. Accordingly, many teachers feel anxiety when communicating with parents and experience difficulties in resolving conflicts.

The present study examines how interns in Early Childhood Education (ECE) interpreted communication with parents, and what challenges faced them. Participants were 143 student teachers in their last year of ECE studies, enrolled in the course “Working with Parents in the 21st Century”, in the Early Childhood Education program at Levinsky College of Education. All participants were interns filling positions of preschool or first and second grade teachers. They were asked to write accounts of social episodes describing a significant event with regard to relations with parents. The accounts were analyzed according to qualitative, content analysis, combined with several quantitative analyses.

Data analysis yielded six central themes. Most of the themes described difficulties in working with parents, centering around two complementary core dimensions: (1) building close and caring relations with parents; (2) setting boundaries for parental behavior. In addition, two meta-categories were revealed to be significant axes, expressed in all of the central themes: (1) cultural diversity and parent-teacher power relations; (2) differences in teachers' communication patterns with fathers, in comparison to mothers. These findings show that there is a need to cultivate cultural competence among teachers and student teachers and to strengthen the educational partnership with fathers.

The use of diversity-related practices in German ECEC centers – Do staff characteristics play a role?

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Abstract

In Germany, almost every third child in ECEC (29%) has at least one parent who is born outside of Germany and 66,6% of those children do not primarily speak German in their family (Autorengruppe Bildungsberichterstattung 2020). Without doubt, not only in Germany, ECEC settings are linguistically, culturally and ethnically diverse environments. Many ECEC curricula address this issue and provide guidance on how ECEC professionals can foster intercultural understanding among children. It raises the question: what type of practices are ECEC staff actually employing to increase children's awareness for differences and commonalities between people? Data from the newly released OECD TALIS Starting Strong Survey 2018 sheds light on this aspect and shows that the perceived use of diversity-related practices can differ a lot between countries. But what role do staff's characteristics play – specifically 'country of birth' and 'participation in diversity-related professional development (PD)'? Empirical findings already point to associations between staff's PD experience and self-reported pedagogical practices (e.g. Slot, Leseman, Verhagen & Mulder 2015), but have not yet focused on diversity-related practices. Therefore, using self-reported data from OECD TALIS Starting Strong Survey, this paper investigated whether staff judge the extent to which diversity-related practices are taking place in their centre differently depending on their background. Group comparisons showed that with regard to staff's perceptions of diversity-related practices in their centre, staff's birth country did not seem to play a role but staff's participation in diversity-related PD activities did. Possible interpretations and implications for pedagogical practice will be discussed.

Learning language during outdoor play in ECEC-settings

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Abstract

In recent years a lot of schools greened their school schoolyards. Playing in a natural environment helps to reduce stress levels and to enhance concentration. It also shapes children's motor skills and enriches their play. The question arises whether the cognitive, i.e. the language development of children also would benefit from being outside in a natural environment.

In this study 50 children (2-6 yrs) play in two different play environments. The paved schoolyard of the school and a park in the vicinity of the school. We record their speech during play and report their play activities. In a within subject design these data are compared to each other to find out how the physical environment in which the children play, shapes their language use and their play activities.

Preliminary results show that children tend to use the natural play environment more in their play activities whereas the paved schoolyard is used mostly as a surface to play upon. We are now finding out if this also results in using more words and more word types when the children are in the natural play environment, because there is more need to negotiate the roles the children play themselves or the roles the natural materials play in the play activities the children perform.

Implications are discussed with regard to how to use outdoor play time more for language educational purposes.

Lest Talk! – Promoting Meaningful Communication through Authentic Teacher- Child Dialogue

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Abstract

The heart of this study is an analysis of teacher–child dialogue in a classroom environment. An authentic dialogue enables children to express their real thoughts and ideas, to present insights, to ask questions, to make comments and to argue about different interpretations (Bakhtin,1981; Peled & Bloom-Kulka ,2006). The research methodology was a discourse analysis of 20 transcripts of preservice teacher's conversations with Israeli Jewish and Moslem children from ages 4 – 6 years old. The analysis revealed that as teachers provided open conversational spaces with children, authentic dialogue emerged. Both voices were expressed and the child's world was heard (Strickland & Marinak, 2015).

Characteristics of musical interactions during preschool group-time

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Abstract

The main objective of the current research was to describe and analyze a preschool teacher's musical interactions during morning group time. The research aimed at characterizing musical activities in terms of length, contents and observed developmental domains which were identified during the musical sessions. The qualitative multiple-case research, comprises observations at five different kindergartens. Two of them included children aged 3-4 and the others, children aged 5-6. Five to seven morning group-time sessions were videotaped in each kindergarten, 30 in all, accompanied by a semi-open interview with each teacher. The findings show that the teachers averagely devote around 23% of the group-time sessions to musical activities which appeared to be plentiful and varied, including activities such as singing, reciting, playing instruments, listening to recorded music, and movement in response to music. The most frequent activity was listening to recorded music. The most frequent genre were game songs and recitations followed by Hebrew songs and children's songs. Contrarily, instrumental music, such as classical music, was less a frequent activity. Great diversity with regard to musical repertoire was found among the kindergartens. The musical interactions served the kindergarten teachers more as a tool for developing extra-musical skills than as an aesthetic goal in itself. Cognitive, linguistic, motor, social, emotional, and musical skills were identified during the musical sessions. The conclusions point at the need to develop and highlight the following elements in training programs for early-childhood teaching and professional training for kindergarten teachers: (a) The importance of using teacher's natural resources—voice, movement, and, if possible, playing an instrument—all of which provide flexible accommodation to the situation; (b) Reinforcing teacher confidence in presenting a plentiful and varied, carefully-chosen repertoire, exposing the children to greater musical complexity. (c) Promoting teacher's awareness to musical skills and extra-musical skills which can be observed and nurtured during musical interactions.

Incorporating the ITERS-3 and CLASS into Israeli early childhood care settings

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Abstract

Interactions between adults and children are a key mechanism through which learning and development are supported in early years. There is a steady increase in the number of children attending group care settings for many hours a day. Studies conducted in Israel show that the quality of day care centers is characterized by low levels of structural and process aspects. Moreover, it has been found that support of young children's learning and language development is low.

CLASS toddlers and ITERS-3 are assessment tools for evaluating quality of care and education in early childhood group settings. These tools emphasize the importance of the caregiver's role in supporting learning in young children through high quality daily interactions, with a focus on the ways in which adult interact with children to facilitate learning and support language development. The CLASS and ITERS-3 can serve as new models of pre and in-service training that can provide caregivers guidelines how to promote high quality interactions with children.

Over the past year, academic and applied team from the Center for Child Development at the University of Haifa translated and adapted the English version of ITERS-3 into Hebrew and were qualified to train professionals using this tool. Furthermore, CLASS based programs were constructed to guide caregivers and preschool teachers on how to effectively promote children's learning and thinking processes. During the lecture these programs and the rationale behind them will be presented, as will their method of implementation.

Social-Emotional Development

Repeated Narrative Writing (RNW) of emotionally loaded incidents as a teacher's coping tool with children's behavior problems

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Abstract

The purpose of this presentation is to show how repeated narrative writing (RNW) of emotionally loaded episodes has helped teachers cope with multiple behavior problems in their preschool classes.

Expressive writing of emotionally loaded episodes as a coping tool was discovered and studied by Pennebaker (Pennebaker & Evans, 2014) and suggested as a teacher's coping tool with behavior problems by Tal (2005).

This study is based on a multiple case study methodology (Yin, 2003). It included three cases: two preschool and one elementary school teacher. The data included the narratives of the episodes (35 in case 1 and 25 in case 2 and 28 in case 3). Methods of analyzing the data were mixed: quantitative and qualitative. Each episode was analyzed using Pennebaker & Evans' (2014) criteria: frequency of positive and negative emotional words, frequency of causal and insight words; in addition, as suggested by Tal (2005) reports related plans and actions focused on direct and indirect coping with behavior problems were counted and content analyzed.

Findings show :-1. Teachers using RNW underwent a transformative process focused on "replacing" frequent feelings of helplessness to developing self-efficacy and self-direction; 2. Teachers consciously acknowledged their responsibility for assuring the children's wellbeing and learning.; 3. Teachers seemed to have improved their Classroom Management competencies: in addition to leadership more proactive and ecological perceptions of the class, improved self-regulation skills as expressed in their decisions, and improved relationships with children, staff and parents.

Emotional exhaustion in German preschool teachers: The role of personal, structural, and social conditions at the workplace

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Abstract

Research has shown that preschool teachers are especially prone to develop work-related stress symptoms, such as burnout. However, the specific underlying factors at the workplace associated with emotional exhaustion—generally perceived as the core dimension of job burnout—in early childcare professionals are widely unknown. Hence, this study aims at identifying personal and structural (pre)conditions as well as social experiences associated with emotional exhaustion. Further, we want to disentangle center-related versus teacher-specific predictors. We draw on data collected from a nation-wide sample of early childhood professionals participating in the German federal program Sprach-Kitas [language day care centers]. We used structural, personal, as well as social variables from 1394 early childhood professionals in 204 centers. A multilevel analysis demonstrated that center differences explained only 5.8 % of the overall variance in levels of emotional exhaustion. Further, our findings revealed that emotional exhaustion in preschool teachers was strongly associated with social working conditions, such as perceived teamwork and collaboration with parents, but hardly with any personal or structural conditions. This has important practical implications for interventions, which should strongly focus on social experiences at the workplace, such as team cohesion and communication with parents, as to merely regulate structural conditions

The association between child-teacher interaction, social information processing and social behavior among preschooler

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Abstract

A major theoretical assumption is that social information processing (SIP) is the result of schemas arising from the child's representations of relationships. This may also include the relationships with the teacher. According to the literature, SIP also predicts social behavior and school adjustment problems. In the present study, we aim to connect these assumptions by examining the relationship between the quality of the child-teacher interaction (as measured by the Classroom Assessment Scoring System; CLASS), social information processing and social behavior among Israeli preschoolers.

Research hypotheses:

- 1- The quality of the teacher-child relationships will be associated with the child's SIP.
- 2- The child's SIP will be associated with his/her social behavior.
- 3- SIP will mediate the Link - between the quality of the teacher-child relationships and the child's social behavior.

This study was conducted in 50 Jewish preschool kindergartens in Haifa in Israel.

The findings of this study shed light on the importance of the child's relationships in preschool and the formative influences on children's academic, social and emotional abilities. They can be used to develop intervention programs that emphasize the quality of interactions between the preschool teacher and the child, through training, and guidance for preschool teachers.

In addition, the research findings on social information processing as related to the child's social behavior may help professionals working in the field to build intervention programs to develop children's social skills and improve their social adjustment.

When playstore knows how to deal with your child - A counselling app all about socio-emotional development

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Abstract

The development of social emotional competence is a central task for children at the age of four to six years. A key competence here is emotion regulation, which includes not only experiencing emotions consciously but also expressing them in a socially acceptable way. Developmental psychological studies show that emotion regulation is related to the ability to establish good relationships with others and to participate successfully in educational tasks. Children develop the ability to regulate emotions in interaction with their caregivers – for example their parents. This process, which is particularly important for further development, often leads to emotional situations in everyday life that can be challenging not only for the children themselves but also for their parents. When looking for advice in these situations parents tend to look for approachable and personal solutions. This brings up the question how to communicate developmental psychological content in such a way. Based on these findings in this poster a concept for an interactive counseling app for parents will be presented. The app helps parents dealing with those challenging situations in a positive and developmentally supportive way. It is assumed that trust plays an important role for the decision to whom parents turn with questions and concerns about child education – which is a very critical topic with high personal relevance and perceived risk.

Teacher's Training in Early Childhood Education

Enhancement of Moral Classroom Management (MCM) competencies in Early Childhood Education

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Abstract

The aim of the presentation is to show how the implementation of moral classroom management (CM) model in teacher education has impacted student teachers' and teachers' CM competencies and the children's learning and well being.

In this the study, CM is defined as a core meta-competency that integrates cognitive mindsets (moral leadership, proactive, ecological-systemic) self-regulation skills, and interpersonal relationships with children and staff. CM is also perceived as a cyclical process that includes advance planning, implementation, assessment during the implementation, and a final evaluation that takes into account factors related to the children and their environment, intended to bring about progress in the activities carried out for the learning and emotional well-being of the children in the class.

This is a multiple case study (Yin, 2009) including ten cases: two cases focused on coping with behavior problems, two cases focused on coping with diversity (one cultural and one dealing with inclusion of a girl diagnosed with ASD) and six cases focused on literacy and social learning in the context of heterogeneous small group work. Data included observations, diary writing, interviews, transcripts of discourse es with children, parents and staff, children's drawing and writing samples. All participants were enrolled in preparation or graduate studies in ECE.

Findings show improvement in the children's emotional and social well-being and behavior, participation in learning encounters, creativity, and inquiry-based learning. In all cases, we found mental transformations in the student-teachers and teachers conducting the action research associated with taking responsibility and leadership in preschools, and ecological and proactive thinking.

Student Teachers Promote Learning and Participation Using iPads in Inclusive Kindergartens

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Abstract

Active learning and the incorporation of assistive technology are the foundation of meaningful learning in the 21st century. The use of open and closed applications when using an iPad facilitates cognitive and social emotional development. The purpose of this study is to characterize the contribution of the iPad in promoting inclusion of children with special needs in inclusive kindergartens. Thirteen first year students studying early childhood and special education accompanied kindergarten children with special needs to inclusive kindergartens. The students used iPads in the context of educational activities in groups of 4-5 children. At the end of each activity three reflective questions were addressed by the student teachers. The questions were: How did using an iPad in an educational activity contribute to the child with special needs? How did using an iPad in an educational activity contribute to children with typical development? What was the contribution of using the iPad to the student teacher in her development as an educator? Thematic analysis of the student's reflections was used. Preliminary results indicated the following contributions. For the child with special needs: Easing adaptation to the regular kindergarten, acquisition of learning habits and social skills. For the children with typical development: Increased curiosity for learning, knowledge and conceptualization. For the student teachers: Empowerment, self-efficacy, diversity in teaching methods, increased ability to maintain motivation and attention in the group and facilitating the child and student teacher relationship.

Adults' beliefs regarding adult intervention in fostering number concepts among young children

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Abstract

Fostering number development during the preschool years is important, not only in school, but also at home. This study (supported by The Israel Science Foundation, grant No. 1631/18) focuses on adults' beliefs regarding their own intervention in young children's (ages 3-6) learning of number concepts. Thirty adults answered two questions: (1) In your opinion, is it important for an adult to be involved in developing preschool (ages 3-6) children's quantitative reasoning? Explain. (2) In your opinion, is it important for an adult to receive guidance so that he/she can help foster quantitative reasoning among young children (ages 3-6)? Explain.

All participants, except two, claimed that it was important for an adult to be involved in developing preschool children's quantitative reasoning. Reasons for this positive claim included mostly cognitive aspects of learning, such as the necessity to correct children's mistakes, but also some affective aspects, such as raising children's motivation to learn number concepts. Out of these 28 participants, 19 (68%) also claimed that it was important for an adult to receive guidance in order to foster children's quantitative reasoning. Reasons for needing guidance included the recognition that there must be special methods for fostering mathematical thinking at a young age. Reasons for not believing in the need for guidance included a belief that helping children comes natural to most adults, and that only professional early childhood educators need guidance. These results can help educators wishing to encourage adults to be meaningfully involved in children's early number development.

School of Early Childhood Professions

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Abstract

The first childhood years are critical for language development, learning patterns, social skills, and emotional adjustment. Development in infancy has significant implications for the life of the adult and society. The State of Israel's investment in ages birth-three is relatively low compared to other developed countries. This is expressed in the high child-caregiver ratio, lack of investment in staff training, poor employment conditions, and the edu-carers' low self-image in the eyes of the media, the parents, and themselves. Quality training for edu-carers is a vital step toward changing this reality. The School of Early Childhood Professions established at Oranim Academic College provides training to all professionals who educate and care for children of tender age. It is working to elevate the status of early childcare education and place it at the center of public discourse in Israel, out of a recognition of its importance to the individual and the society. One of its training programs, "Educators in the Infancy Years" (MESHI in Hebrew), was designed in association with early-childhood experts. Its goal is to deepen edu-carers' theoretical and practical knowledge. Preliminary research, conducted with 24 students, indicated a medium-low self-perception and capability of working with parents and a medium-high sense of professional identity.

Creativity

Emergent Musical Creativity in People Suffering from Dysmusia

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Abstract

In this proposal, I seek to observe, through a musical prism, musical creativity that might emerge from deficiencies in reading and decoding musical score. I will attempt to present the difficulties and creativity that might emerge, via the media itself – the language of music.

One of the central objectives of musical education in the Western world is enhancing literacy and developing the ability to read musical scores fluently. It is customary to begin teaching score reading in early childhood, during the years that are often referred to as the "halcyon days" for human creativity.

In my efforts to comprehend this issue, I will present evidence from research in the field of my own case study: composing original musical works, using computerized technology, that enhances sonority possibilities beyond the acoustic experience similar to the complex internal world of the dyslexic score reader.

Questions to be discussed at the conference:

- How can phenomena such as blindness, helplessness, blacking-out, sudden confusion, or lack of control be conceptualized through music?
- How can the audience be provided with a sense of syntactical disruption, the unraveling of a contextual system, or distraction?
- How can we deal with the gap between 'writing' that blocks the nonsense, censorship, creates a hierarchy (much like a classic staging), and music performing that reveals the thoughts in tandem with the tongue?

I'll observe, through a musical prism, the creativity that could possibly emerge from reading disabilities and difficulty in decoding musical score. I'll present this creativity and difficulty retrospectively through the media itself. Please listen to an example at https://www.youtube.com/watch?v=-CTbqU_JWvI.

The Neural Underpinnings of Cross-Cultural differences in Creativity

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Abstract

Whereas Western individualistic cultures emphasize uniqueness, collectivistic East-Asian cultures discourage it. Here we examined whether cross-cultural differences in creativity as measured by a task of divergent thinking (DT) are explained by enhanced activity in brain regions that mediate inhibitory control (e.g., the left inferior frontal gyrus [L-IFG]). We therefore predicted that the L-IFG would be “hyperactive” among individuals from East-Asian cultures compared to Western ones. In Study 1, Israeli and South Korean participants were compared on a classic DT task (AUT; “Alternate uses: Manual of instructions and interpretation”). Israelis generated more original ideas compared to South Koreans. In Study 2, Israeli participants and South Korean participants currently living in Israel were scanned while performing the AUT. In line with previous studies, the results indicate that generation of original ideas across cultures is associated with activation of the posterior cingulate cortex (PCC), which is part of the default mode network (DMN). As hypothesized, South Koreans showed enhanced activation of the LIFG compared to Israelis. This enhanced activation was associated with lower originality scores. The cultural dimension of traditionalism, being higher in the South Korean sample than in the Israeli Sample, was related to enhance L-IFG activity, further supporting our hypothesis regarding cultural influences on inhibitory control. Furthermore, functional connectivity analysis indicated that activation of the L-IFG was positively coupled with PCC activity among Israelis and with preSMA activity among South Koreans. The results suggest that cross-cultural differences in creativity might be explained by variations in inhibitory control.

Symposium - Mindfulness Based Interventions in Educational Settings

Chairperson: Joy Benatov jbentov2@gmail.com

Presentation 1: Benatov Joy (University of Haifa), Berger Rony (Tel-Aviv University)

Presentation 3: Berger Rony (Tel-Aviv University), Tarrasch Ricardo (Tel-Aviv University),

Presentation 2: Berkovich-Ohana Aviva (University of Haifa), Lavy Shiri (University of Haifa), Shanbour Kholoud (University of Haifa)

Discussants: Berkovich-Ohana, Berger Rony, Benatov Joy, James Kirby (The University of Queensland, Australia)

Abstract

Mindfulness is “the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003). It’s origins stem from Buddhist philosophy, but the practice has been secularized and adapted to Western society. Mindfulness based interventions within educational settings have shown to be effective in enhancing self-regulation, pro-social behaviors, academic performance and decreasing aggression among school aged children from western societies. Potentially these beneficial effects may be extended to additional developmental stages and different cultural contexts.

This symposium will present a sequence of studies that have created and tested the efficacy of Mindfulness Based Interventions adapted to unique contexts. Specifically, the first presentation will focus on a program adapted for the early developmental stage of pre-school aged children. The second presentations will present a program conducted with teachers and the third presentation will show a holistic school-based program combining pupil and teacher intervention.

Following the presentations, the benefits and limitations of applying Mindfulness practices across different educational settings will be discussed.

Paper1:

Enhancing pro-social behavior and compassion among pre-school children through a mindfulness and compassion-based social-emotional program.

Benatov Joy, Berger Rony, Tarrasch Ricardo

This study evaluated the effectiveness of a mindfulness and compassion-based social-emotional intervention, Call to Care-Israel (C2C-I) adapted for pre-school children. The C2C-I program combines social-cognitive and social-emotional driven mindfulness and compassion practices adapted for young children aimed to create a community of care and cultivate compassion toward the self and others. Seventy four pre-school children from three pre-schools in central Israel were assigned by partial randomization to the C2C-I or an active control or wait-list control groups. Children's pro-social and disruptive behaviors were assessed via observations and parents' and kindergarten teachers' ratings. Compassion was evaluated using the compassionate response task. Measures were obtained before, after and six months following termination of the program. Results showed a significant decrease in disruptive behaviors and an increase in pro-social behavior and compassionate response compared to the control groups. Importantly, the significant effects found in the C2C-I group were maintained at the 6-month follow-up. These results have significant implications for implementing C2C-I mindfulness and compassion-based practices with pre-school children in order to promote pro-social skills and self-regulation.

Paper 2:

Studying the effects of a mindfulness intervention among Arab teachers

Aviva Berkovich-Ohana, Shiri Lavy, Kholoud Shanbour

While mindfulness-based interventions (MBIs) in educational setups are becoming wide-spread in the world, especially USA and Europe, the exploration of mindfulness effects in the Arab education system is still scarce, and there is no report on the effect of MBIs for Arab teachers to the best of our knowledge. This study investigated the effectiveness of an MBI for Arab teachers in an elementary school in Israel.

Our participants were 20 teachers who underwent the MBI (but only 12 completing it), and 19 teachers from another Arab school who underwent another cognitive intervention as a control group. In a pre-post design, the participants completed several questionnaires, testing for Mindfulness, Decentering, Emotion regulation, and Stress.

We hypothesized that for the MBI group, the levels of Mindfulness, Decentering, and Emotional Regulation will enhance, while reducing Stress. For the control group no such differences were hypothesized.

The comparison between post and pre intervention showed that the MBI training raised the level of Mindfulness in three subscales (Acting with awareness, Non-reactivity, and Observe) only among the MI group, and similarly the Decentering scores, and for Emotion Regulation – only the Cognitive Reappraisal strategy. No such changes were seen in the control group, as hypothesized. In addition, only the MI group reported reduced Stress, in contrast to the control group.

This study provides initial support to the feasibility and efficacy of MBI in the Israeli Arab teachers.

Paper 3:

The impact of mindfulness and compassion-based program on pupils inter and intra-personal abilities

Rony Berger, Ricardo Tarrasch

Several mindfulness and compassion-based programs have been implemented in the educational system, during the last decade. The practice of these programs in the education system could follow three approaches: a direct approach, in which the intervention is delivered directly to students; an indirect one, in which the teacher develops a personal mindfulness practice, or a combination of both. It our assumption that a whole school program will be more effective in utilizing a combined approach to delivering these interventions. In the present study we compared the effects of indirect and combined approaches as compared to a control group, implementing a mindfulness and compassion-based intervention. Two-hundred students were allocated into three experimental groups. They filled self-report questionnaires before the intervention, after its end and six months later, and performed a behavioral measure assessing pro-social behavior, before and after the intervention. Hierarchical Linear Models revealed that both the indirect and combined approaches were effective in improving anxiety, well-being, attention and teacher availability and acceptance, while only the combined approach was effective in somatization, mindfulness, classroom atmosphere and pro-social behaviour. Our results support the benefits of the combined approach, however, given its scalability and cost drawbacks, we will discuss how a whole-school program can also benefit from an indirect approach.

Learning Disabilities

The Neural Underpinings of Cross-Cultural differences in Creativity

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Abstract

The purpose of the study was to examine the effect of a Robot-based intervention on spatial ability (mental rotation and visual memory) among children at risk for learning disabilities (LD). More specifically the aim of the study was to examine the added value of a robot to each of the mentioned spatial skills. Eighty-four children ($M = 5.8$; $SD = .49$) participated in the study. The sample was randomly assigned to three groups: intervention with robot, traditional intervention, and control group. The findings indicate that children exposed to the robot-based intervention exhibited the greatest improvement in mental rotation test when compared to children who participated in the traditional intervention or were in the control group. No significant differences were found in the visual memory test between the groups after the intervention. Findings indicate that the robot-based intervention makes a unique contribution to fostering mental rotation. The implications of these findings for young children at risk for LD will be discussed during the conferences.

Learning and Automaticity Phases of the Invented Letter Learning Task Predict Probable Risk of Written-Language Disorders among Second-Graders

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Abstract

This study tested associations between children's procedural motor-skill learning and probable risk of literacy disorders on the basis of theoretical models proposed by Ullman (2004), Nicolson and Fawcett (2019), and Berninger, Richards, and Abbott (2015). Children's procedural skills were assessed using a grapho-motor letter-writing task that served as the first of three developmental linguistic stages: Children's abilities at the levels of the subword (grapho-motor writing of letters), the word (reading/spelling) and probable risk of literacy disorder at the syntax/text level (reading comprehension and text-copying rate). One-hundred fifty-one Hebrew-speaking second-graders of a low socioeconomic background were tested in written language abilities at three stages of development. A grapho-motor Invented Letter Task (ILT) was assessed at the beginning of second grade. Subsequent cognitive (verbal/non-verbal) and literacy measurements at the word level were assessed in the middle of second grade. Probable risk of literacy disorder at the syntax/text level was assessed at the end of second grade (reading comprehension) and at the beginning of third grade (text-copying rate). Structural equation modeling (SEM) was used to analyze measurements among the three stages. The results of the final model indicated direct and mediated associations between the procedural skill learning (ILT) phases and probable risk of literacy disorders, strengthening the notion of an association between procedural motor skill learning and difficulties in literacy acquisition. Probable risk of reading comprehension disorders was directly predicted by the ILT learning phase. In addition to the well-established associations between cognitive and literacy measurements, cognitive measures primarily predicted children's level of reading comprehension while literacy measures mainly predicted text-copying rate abilities.