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Trends of Early Childhood Education in Metropolitan City Karachi: A Review

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Abstract:
The study has been designed to analyze the review paper is aimed to analyze the emerging trends, which used and implemented arising in Early Child Education in the metropolitan city Karachi Sindh Pakistan. Early childhood education emerged as an important level of education to cater to the needs of early age children to develop their skills and competencies for their cognitive and psychomotor skills development. The study focuses on the analysis of the papers found in open access by using PRISMA model based on inclusion and exclusion criteria. For this N=10 research papers were selected and reviewed of national and international journals. The results of the study revealed that early childhood education have adopted different emerging approaches and techniques for the betterment of EC, because it is one of the emerging fields of education and market as well. The policy makers, educationists and teachers should make early childhood education as It is also responsibilities of policy makers and Governments to prepare the plan and review the policies.

Key words: Trends, Preschool, Early Child Education, Metropolitan Cities

Introduction

In the bustling metropolis, where the heartbeat of the country's economic and cultural activities resonates, the landscape of education is evolving rapidly, and nowhere is this transformation more evident than in the realm of early childhood education (ECE). As the city continues to grow and diversity, the demand for high-quality education, especially in the foundational years, has become increasingly pronounced. This study analyses the dynamic trends shaping Early Child Education in Karachi, exploring the innovative approaches, challenges, and the overall impact on the young minds navigating their early educational journey.

For many years, early childhood initiatives have been implemented to counteract the impact of poverty on children's development and intellectual advancement. According to Rehman, Lashari and Abbas (2023) that early experiences have a significant impact on results in different areas of development, several programs have been developed to provide training in positive parenting or child-centered intellectual stimulation throughout early stages of life. These programs can be either home-based or center based. Most interventionists have utilized assessments of cognitive ability and academic advancement to assess the efficacy of their programs (Gallagher, 1991; Samejo, Lashari & Mahar, 2023), and numerous programs have shown positive outcomes, albeit in the short term (Currie, 1997; Lee, Brooks-Gunn, Schnur, & Liaw, 1990).

Early childhood education is fundamental for fostering inspiration, structure, motivation, and social development. Therefore, it is important for everyone to exercise caution unless a child is enrolled in elementary school in a suitable manner (Lashari, Umrani & Buriro, 2021). The foundation of character development is in the cultivation of essential attitudes and skills, as emphasised by UNSECO in 2008. Young individuals in any species have a natural inclination to engage in play, since it serves as a means to acquire various abilities, concepts, and behaviours (Samejo, Lashari & Mahar, 2023). The early childhood education period fosters the development

of cognitive abilities, socialisation, and personality growth (Shami, 2009). Children develop their capacity to recognise and categorise items based on many criteria such as shapes, colours, and sizes. However, their knowledge is limited when it comes to determining volume and mass (Shaffer, 1999).

Studies have demonstrated that the early stages of life are crucial for the development of moral behaviour, competence, confidence, IQ, and EQ, as supported by research conducted by Woodhead in 2006. If children receive sufficient care and motivation during their early years, tailored to their own needs, they will excel in both their academic and social lives (Suhag et al., 2017). If children do not show concern throughout their early years, their academic performance may suffer, leading to a higher likelihood of dropping out of school and engaging in criminal activities and negative behaviours (Schweinhart, 2002).

It is well recognized that the early years of a child's life are crucial for achieving primary and fundamental educational objectives. Implementing a focus on skill-based literacy and math can hinder student advancement (Magsi et al., 2023; Noorani & Lashari, 2023). The organization is commonly referred to as the National Association for the Education of Young Children. Modifying inherent assets can yield benefits for offspring (Lawrence et al., 2016; Bukhari et al., 2023). According to Buettner et al. (2016), professional and researcher college to university programs often lack emotional engagement, advancement, and professionalism. The change in curriculum that focusses on science topics may not be beneficial for children because parents do not support it (Sackes, 2014). The utilisation of forbidden educational aspirations and self-centred teaching approaches has the potential to undermine the rights of children (Samejo, Lashari & Mahar, 2023; Buriro et al., 2023).

Furthermore, researchers and studies have provided evidence that children living in urban areas face significant challenges related to pollution and the environment (Fayyaz et al., 2023, Lashari et al., 2023). Students have a variety of challenges and illnesses as a result of the aforementioned factors (Calderón-Garcidueñas et al., 2020).

Urbanisation is seeing tremendous growth, with a rate of only 2 percent in 1800, but reaching 54 percent in 2014. It is projected to reach 72 percent by 2050. As a result, the level of variety is also on the rise. The significant influx of migrants has resulted in substantial impacts on the economy, society, and environment (Zhang, 2016; Samad & Lashari, 2022). The escalating population ratio poses a significant challenge for urban cities, as it has a detrimental impact on temperature, literacy rate, and growth (Ahmed, Lashari & Golo, 2023). Multiple studies have demonstrated that in order to provide early childhood education, a smart city is essential. A smart city is defined by the presence of specific facilities and needs. Intelligent individuals, intelligent economy, intelligent governance, intelligent transportation, intelligent management of sustainable resources, intelligent building and quality of life, Internet of Things (IoT), big data, and cloud computing.

Method & Procedure

In order to conduct an analysis of the trends in early childhood education, the study utilized a review of the publications. The review of papers, which are open access and used to analyze scholarly publications and academic collaborations in the relevant literature. This rising issue in education is examined using this methodology. For this purpose, inclusion and exclusion criteria was used to analyze the research papers which are open access. There were 20 papers were reviewed for the study. The selection criteria of the papers were the keywords search from google scholar, Scopus and Elsevier. The key words were trends in early childhood education.

Mindfulness

Mindfulness has been defined as both a characteristic and a condition that may be cultivated via regular training (Brown et al., 2007). Mindfulness encompasses two fundamental processes: the ability to consciously direct and control one's attention, and the capacity to observe and acknowledge one's experiences without passing judgement (Bishop et al., 2009). The regulation of attention facilitates the conscious recognition of one's emotional, cognitive, and physical experiences in real-time. Non-judgmental awareness, which involves being curious, open, and accepting of one's experiences, might enhance coping by reducing reactivity (Kabat-Zinn, 1994). Early childhood education helps to develop the characteristics of mindfulness among the learners. Attention and mental awareness on the part of the students and their parents are required, depending on the conditions (Becker et al., 2017; Jennings, 2015). Research and studies on mindfulness have shown that it not only reduces stress and brings about positive transformation, but it also demonstrates focus and enthusiasm on the part of both pupils and their parents.

Nature Based Early Child Education

This is the stage where child learn and grow naturally, where students spend life more and happily, everything takes naturally. Basically this is growing schools, provide happy, stress less and active learning stage. It also brain storming stage (Rymanowicz et al., 2020). When children are allowed to explore environments freely, they experience nature with their whole bodies and emotions, typically in the context of social interactions.

Social Emotional Learning

Presently, educators and researchers have a keen interest in assessing and advancing socio-emotional learning (SEL) from a young age. SEL skills in early childhood undergo rapid development, possess a high degree of flexibility, and have a significant correlation with future social, academic, cognitive, and health results (Zins et al., 2007). Social Emotional Learning refers to the cognitive and emotional development that enables individuals to effectively manage their thoughts, emotions, and actions in order to accomplish significant life objectives. Social and Emotional Learning (SEL) refers to the development of children's skills in forming strong and safe connections, managing and expressing emotions in ways that are suitable for their social and cultural context, and exploring and learning from their surroundings. This occurs within the framework of their family, community, and culture (Yates et al., 2008). It is the source of emotions, expressing, making relationships and maintain healthy and ready to go for school (Blewitt et al., 2018). There is chance to create behavior issues. (Yang et al., 2019). Research conducted over an extended period of time has demonstrated that children who experience difficulties with their social, emotional, and behavioural development during their primary school years are less likely to perform well academically (Patalay et al., 2016). Additionally, these children are less likely to obtain higher education qualifications, more likely to engage in criminal activities, and face an increased risk of experiencing poor health, drug addiction, depression, and other mental health issues (Carneiro et al., 2007). According to Gutman and Vorhaus (2012), children who are proficient in social skills are associated with higher levels of school engagement and favorable friendship clusters.

Technology Based Learning

Several governments have implemented initiatives to incorporate technology into their educational institutions based on the belief that technology may positively influence student learning. This learning tendency is highly significant, dynamic, rapid, and captivating in early childhood education. It is also a potent instrument for acquiring knowledge. Amidst the COVID-19

pandemic, it has provided students with significant opportunities and platforms to reaffirm themselves. There were one billion students engaged in online learning. Technology has revitalised our approach to studying. Since the outbreak of the Covid-19 pandemic, this trend has become prevalent in educational institutions worldwide. According to Bales et al. (2020), parents and students have become closely connected and familiar with each other and their instructors through online learning.

Science Technology Engineering and Math

According to Johnson (Buriro et al., 2023), STEM education is an instructional method that combines the teaching of science and mathematics subjects by incorporating the practices of scientific inquiry, technological and engineering design, mathematical analysis, and 21st century interdisciplinary themes and skills. Science technology engineering and math STEM is provide critical thinking to the students and it's also challe]nge for teachers and parents (Tippet & Milford, 2017; Simming, Asad & Lashari, 2015). These are also the indicator of future of the students (Kermani & Aldemir, 2015).

Early Language and Literacy Development

Language is the means by which we convey emotions, thoughts, and information, hence it is crucial that it is acquired at an early stage. Early childhood education consistently fosters the development of innate ideas and critical thinking (Barnett et al., 2010; Lashari & Umrani, 2023). The mother tongue is the sole language that can adequately meet this requirement and establish the basis for students' studies. Improve vocabulary, writing skills, and pronunciation (Foulin, 2005; Justice & Ezell, 2001). Children that possess strong language abilities tend to excel in other topics and assignments, and they are also likely to have strong social skills (Dickinson & Porche, 2011)

Constitutes 'Digital Technology' In Education

In the rapidly evolving technological landscape, teachers often feel overwhelmed by the range of available educational technologies. According to the Victoria State Government (2018), digital technologies include tools and resources that generate, store, or process data, such as social media, online games, applications, multimedia, productivity tools, cloud computing, interoperable systems, and mobile devices. Digital learning is any learning facilitated by technology or instructional practices that effectively use technology, encompassing practices like blended and virtual learning, game-based learning, accessing digital content, online collaboration, and online assessment and reporting (Shaikh et al., 2023).

The Australian curriculum, as outlined by ACARA (2015), emphasizes the competencies required by teachers to implement digital technologies. Teachers need to understand digital systems and data representations, manage data, and create digital solutions (Siddiqui, Lashari Dahani, 2024). They must guide students in developing digital literacy and computational thinking, understanding the relationship between real and virtual worlds, using technology for communication, and solving digital problems (Pervaiz et al., 2024; Jillani, Lashari, Bukhari et al, 2022).

Falkner and Vivian (2015) argue that teachers should possess similar competencies, demonstrating capable and critical use of digital technologies in ICT and problem-solving. White and Le Corn (2011) suggest that teachers should engage with the digital world both personally and professionally to better prepare for teaching digital technologies. Albion, Campbell, and Jobling (2018) claim that teachers who create digital solutions in their lives are better equipped to engage their students.

In Europe, a framework developed by the European Commission (2017) clarifies teachers' digital competencies, covering professional engagement, digital resources, digital pedagogy, digital

assessment, empowering learners, and learners' digital competence across a continuum of increasing capability.

Digital Aspects of Early Childhood Education

For over 30 years, research has explored young children's ability to code, starting with Seymour Papert's Logo Turtle, designed to enhance children's problem-solving skills (Albion et al., 2018). The digital revolution has significantly influenced early childhood (EC) education, making digital technologies a key part of young children's learning (Berson & Berson, 2010). In the U.S., 98% of young children had access to digital devices in 2017 (Miller et al., 2017), although some educators restrict this access due to concerns about its impact on play-based learning (Highfield, Paige & Donohue, 2018; Edwards & Bird, 2015).

Research indicates that digital play might limit children's imagination (Bird & Edwards, 2016), and electronic toys may reduce the quality and quantity of language development in babies (Radesky & Christakis, 2016). Parental concerns also contribute to the restriction of technology in EC centers, with parents wary of the risks versus benefits of digital technology use (Chaudron, 2015).

Overcoming these barriers involves integrating digital play into traditional play-based learning environments. Computer science is seen as suitable for early education, allowing children to "play to learn while learning to play" (Bers et al., 2014). Activities like simple coding can foster problem-solving, computational thinking, and mathematical reasoning when supported by appropriate technologies. Programs like CS Unplugged engage children in computer science concepts through hands-on, non-digital activities, positively influencing attitudes toward computer science (Bell, 2016; Lambert & Giuffre, 2009; Blum & Cortina, 2007).

Developing Educators' Competencies in Digital Pedagogies

Many early childhood educators lack confidence and knowledge in using digital technologies and integrating them into teach (Campbell et al., 2018). However, educators with positive attitudes and high self-confidence towards technology are more likely to incorporate it into their teaching (Holden & Rada, 2011). Programs like CS Unplugged help educators understand computational thinking without needing to learn programming languages, increasing their confidence in teaching these concepts (Blum & Cortina, 2007). Thus, well-designed professional learning is essential for building educators' competencies in digital pedagogies.

Global Monitoring of ECCE: Trends and Present Efforts

Access to quality Early Childhood Care and Education (ECCE) is achieved through coordinated governance, finance, and workforce systems spanning public and private settings and integrating sectors such as nutrition, health, and child protection (Britto et al., 2014). Since the adoption of the Sustainable Development Goals (SDGs) in 2015, particularly Target 4.2, many countries have expanded ECCE investment. By 2019, 76 countries had adopted national, multispectral Early Childhood Development (ECD) policies, including ECCE (Vargas-Barón et al., 2022). Progress includes national laws on free preschool education (Earl et al., 2018).

A review of 13 sub-Saharan African countries found that almost all had ECCE quality standards and half conducted household inspections (Raikes et al., 2021). Many countries have developed early learning and development standards (ELDS) to guide ECCE programs, focusing on cognitive, social-emotional, language and physical development (UNICEF, 2017). Staffing systems are also in place to train and certify ECCE teachers, provide professional development and monitor service quality.

Discussion

Research discussed relates to various aspects of early childhood development, including brain structure, the impact of stress and poverty, social learning, nutrition, and STEM education. Advances in the study of brain development have highlighted the importance of engaging in meaningful language and meaningful social interactions for young children. Warm and nurturing experiences improve memory and focus on work, while toxic stress - such as prolonged separation from a caregiver, abuse or abuse - is harmful. Studies have shown that poverty can shrink the brain in areas related to stress and emotion regulation, but this effect can be mitigated by supportive care and less stressful events. A lack of stimulation, such as a lack of communication in adults, can hinder brain development.

These findings emphasize the need for active stimulation and support to promote neural growth. There is a growing movement in the medical field to recognize the importance of early childhood experiences for long-term health, with an emphasis on addressing toxic stress. The ecological developmental framework, proposed by Schoenk off et al., emphasizes the relationship between early experiences, brain development, and long-term health, suggesting that many diseases age that is rooted in the world's problems. Proper nutrition is important, as micronutrients support overall health and interact with the environment, promoting brain development. In response to this view, current trends are improving the quality of food served to children. In addition, research on social learning (SEL) shows its important role in academic success and well-being. Adaptive and reactive interactions help make the necessary neural connections SEL-focused programs have been shown to enhance academic performance, school attendance, positive attitudes, engagement, and the ability to form friendships.

Many states have implemented early learning standards for social-emotional learning (SEL) due to increased awareness of its importance. However, assessing young children's social-emotional skills is not universally practiced, even though there are reliable observational tools available. This infrequent assessment is exacerbated by a lack of professional development and teacher training focused on SEL.

Globally, progress in preschool access varies. By 2014, 40 countries had made preschool compulsory, and about 68 countries had high enrollment rates. Yet, enrollment disparities persist, with Sub-Saharan Africa at 20% and Eastern and Central Europe at 72% in 2014. Worldwide enrollment in pre-primary education reached 54% in 2014, a significant increase from 33% in 1999. However, public preschool availability remains limited, leading to a rise in private providers. For instance, in Ghana, 40% of poorer children attend preschool, while 98% of wealthier children do so through private institutions. Government initiatives can lead to substantial improvements, as seen in Algeria, where enrollment surged from 2% in 1999 to 75% in 2011 due to increased public education funding and curriculum changes.

The United Nations Sustainable Development Goals (SDGs) aim to ensure all children have access to quality early childhood education by 2030. However, critiques have noted that the SDGs do not specify that pre-primary education must be free and compulsory, nor do they address issues of equity, quality, or affordability.

Similar challenges are observed in the U.S., where access and equity in early education are influenced by government action and funding. Following the 2008 recession, funding for universal pre-kindergarten decreased but began to rise again by 2013–2014, though it has not returned to pre-recession levels. State spending per preschool child fell from $5,129 to $4,121 between 2002 and 2014, and only 42% of children are enrolled in state-funded preschool programs. In response

to funding shortfalls, some cities, like Philadelphia, have pursued local funding measures, such as a soda tax, which faced significant opposition and legal challenges.

Despite these funding and policy challenges, efforts to improve preschool quality and professionalize the field continue, with various states adopting policy recommendations to enhance public preschool standards.

Governments have adopted at least eight quality standards and policy recommendations for early childhood education, including: (1) establishing early learning standards, (2) requiring teachers to have a bachelor's degree, (3) providing specialized training for Pre-K teachers, (4) ensuring assistant teachers hold a Child Development Associate (CDA) Credential, (5) offering at least 15 hours of annual professional development for teachers, (6) capping class sizes at 20 children, (7) maintaining staff-to-child ratios of 1:10, (8) providing on-site screening and support services (such as vision, hearing, and health checks), (9) offering at least one meal per day, and (10) conducting site visits to monitor compliance every five years.

While funding for expanding early care and education remains inconsistent, research into the benefits of high-quality early education has increased. High-quality public preschool has been linked to better school readiness, improved cognitive and social skills, higher lifetime earnings, and lower crime and teen pregnancy rates. For parents, access to quality child care has led to improved parenting skills, better job retention, and higher wages. The growth of funding and research into evidence-based early childhood programs is evident, with various journals, organizations, and research centers emerging.

The Child Care and Early Education Research Network provides free access to the latest research findings, publications, datasets and other online resources. As advocates become increasingly involved in child development and well-being, there is a growing need for coordinated efforts among all stakeholders. Entrepreneurs are encouraged to adjust their priorities to support inclusive development, as the solutions that are broken today are the result of financial constraints. In order to make significant progress, spatial and integrated solutions, similar to the innovative approaches found in the corporate sector, are necessary. This inclusion is pursued through examples such as local schools and "Neighborhood of Promise" programs. It is important to overcome past political divisions and focus on the comprehensive development of the child, as many debates divide between different aspects of development rather than promoting a single vision. Using a holistic approach that emphasizes participation from all stages of development is essential to promoting the well-being of the child, family and community. The new field of human ecology, which represents all systems of thought by including natural-environmental practices such as psychology and general human-environmental solutions, including the side- social, economic, and ecological. Education plays an important role in improving the well-being of individuals and the ecological balance of the world. Focusing on the whole development of the child requires a global and integrated approach. By spreading this idea, it encourages the creation of all relationships, generations and society.

Stakeholders can then align their efforts towards a unified goal: the holistic well-being of both human and ecological systems, recognizing the interdependence of child, family, society, and environment. Terms such as "eco bio developmental" and "bioecological" capture this integrative and holistic approach. Early childhood conditions serve as a key indicator of social-ecological health, reflecting current equity levels and predicting future socio-economic and ecological outcomes. Focusing on holistic child development by combining the expertise of various specialists and agencies within comprehensive, community-based systems will support the needs

of children, families, and neighborhoods, and help achieve the 2030 Agenda's vision of "action for people, planet, and prosperity."

Regarding teacher preparation and development, challenges persist in adequately preparing teachers to educate all children, especially as demographics become more diverse. According to Ray et al. (2006), the key issue is ensuring teachers are well-equipped to meet the needs of a diverse student population. High-quality early childhood education is crucial for realizing the "American Dream," as it serves as the first social system to recognize children's strengths and potential, introduces them to diverse cultures and backgrounds, and helps shape their understanding of freedom and democracy. Early education programs, therefore, play a vital role in confirming each child's value through choice, listening, and support. Ensuring high-quality experiences in early childhood programs depends significantly on effective in-service and pre-service teacher preparation and professional development.

1. A solid understanding of both typical and atypical child development is essential. Knowledge of atypical development should also encompass how social, political, and physical environments can impact developmental pathways in children
2. A deeper grasp of each curriculum area is necessary to effectively make cross-curriculum connections. This includes familiarity with relevant national, state, and local standards.
3. An appreciation of the cultural, linguistic, and socioeconomic diversity among children is crucial. This awareness helps teachers respond appropriately to each child's unique strengths.
4. Recognizing the impact of risk, resilience, and protective factors on children's learning potential is important. This understanding can help teachers identify and nurture each child's abilities, setting high expectations for all students.
5. An emphasis on extensive field and clinical experiences, starting early and involving guided observation, is important for effective teacher preparation.

Conclusion

Specifically, the purpose of this study is to investigate and assess the developing tendencies in early childhood education in metropolitan studies. An investigation of the content of the papers serves as the foundation for this study. Following the use of the PIMS model of analysis and the adoption of inclusion and exclusion criteria, the study has conducted an analysis of twenty research papers. The findings of the study indicate that the trends that have been embraced are based on social and emotional learning, game-based learning, and the utilisation of information technology for the purpose of instructing and learning effectively. All new developments have been incorporated into the curriculum in order to maintain students' interest in active learning and involvement. This is because urban centres are the epicentre of diverse learning, intellect, and education that is driven by technology. The demand in metropolitan areas is distinct from that of other types of cities on the planet. For instance, buildings, furniture, teachers who have received adequate training, appropriate grounds, instruction in mother tongues, high-quality technologies, the utilisation of laboratories or Montessori aids that are structured according to age, etc. It is crucial to preserve the benefits of conventional play-based, exploratory learning while simultaneously integrating critical academic abilities. This can be accomplished through the use of balanced approaches. For the purpose of educating children to deal with complex social and economic difficulties in the future, it is essential to maintain a curriculum that encourages holistic development through integrated and experiential learning.

REFERNCES

Ahmed, I., Lashari, A. A., & Golo, M. A. (2023). Evaluating primary-level English textbooks of single national curriculum through the lens of Bloom's Taxonomy. *Pakistan Languages and Humanities Review*, *7*(3), 352-361.

Aram, D., & Bar-Am, O. C. (2016). Mothers helping their preschool children to spell words: A comparison between interactions using the computer vs. pencil and paper. International Journal of Child-Computer Interaction, 7, 15-21. https://doi.org/10.1016/j.ijcci.2016.03.001

Bales, D., Dalsemer, K., Blagojevic, B., Hartle, L., Chung, N., Gardner, K., MaCleod, K., & RodriguezVazquez, J. (2020). Using technology to enhance children's learning at home and at school: Building relationships is key. https://www.naeyc.org/resources/blog/using-technology-enhance-childrens-learninghome-and-schoo

Barnett, W. S., Epstein, D. J., Carolan, M. E., Fitzgerald, J., Ackerman, D. J., & Friedman, A. H. (2010). The State of Preschool 2010: State Preschool Yearbook. National Institute for Early Education Research

Becker, B. D., Gallagher, K. C., & Whitaker, R. C. (2017). Teachers' dispositional mindfulness and the quality of their relationships with children in Head Start classrooms. Journal of School Psychology, 65, 40-53. https://doi.org/10.1016/j.jsp.2017.06.004

Bennett, S. V., Gunn, A. A., Gayle-Evans, G., Barrera, E. S., & Leung, C. B. (2018). Culturally responsive literacy practices in an early childhood community. Early Childhood Education Journal, 46(2), 241-248. https://doi.org/10.1007/s10643-017-0839-9

Bierman, K.L., Morris, P.A., & Abenavoli, R.M. (2016). Parent engagement practices improve outcomes for preschool children. Edna Bennett Pierce Prevention Research Center, Pennsylvania State University https://www.rwjf.org/en/library/research/2017/02/parent-engagement-practices-improve-outcomes-forpreschool-child.html

Bishop, D. V., & McDonald, D. (2009). Identifying language impairment in children: combining language test scores with parental report. *International Journal of Language & Communication Disorders*, *44*(5), 600-615.

Blewitt, C., Fuller-Tyszkiewicz, M., Nolan, A., Bergmeier, H., Vicary, D., Huang, T., ... & Skouteris, H. (2018). Social and emotional learning associated with universal curriculum-based interventions in early childhood education and care centers: A systematic review and meta-analysis. JAMA network open, 1(8), e185727-e185727. https://doi.org/10.1001/jamanetworkopen.2018.5727

Burchinal, M., Howes, C., Pianta, R., Bryant, D., Early, D., Clifford, R., & Barbarin, O. (2008). Predicting child outcomes at the end of kindergarten from the quality of pre-kindergarten teacher–child interactions and instruction. Applied Development Science, 12(3), 140-153. https://doi.org/10.1080/10888690802199418

Burgess, E., & Ernst, J. (2020). Beyond Traditional School Readiness: How Nature Preschools Help Prepare Children for Academic Success. International Journal of Early Childhood Environmental Education, 7(2), 17- 33.

Buriro, S. A., Mirjat, M. A., Pathan, R. L., Chandio, I., Lashari, A. A., & Gul, H. (2023). Eco-Friendly pedagogies for STEM education: A review. *Journal of Namibian Studies: History Politics Culture*, *34*, 3018-3044.

Buettner, C. K., Jeon, L., Hur, E., & Garcia, R. E. (2016). Teachers' social–emotional capacity: Factors associated with teachers' responsiveness and professional commitment. *Early Education and Development*, *27*(7), 1018-1039.

Bukhari, S. U. P., Kalhoro, I. A., Lashari, A. A., Soomro, I. A., Batool, S., & Amur, A. (2023). The communication barriers and their impacts on the academic performance of the graduate students. *Journal of Positive School Psychology*, *7*(5), 605-612.

Byrd, C. M. (2016). Does culturally relevant teaching work? An examination from student perspectives. Sage Open, 6(3), 1-10. https://doi.org/10.1177/2158244016660744

Calderón-Garcidueñas, L., Torres-Jardón, R., Kulesza, R. J., Mansour, Y., González-González, L. O., Gónzalez-Maciel, A., ... & Mukherjee, P. S. (2020). Alzheimer disease starts in childhood in polluted Metropolitan Mexico City. A major health crisis in progress. *Environmental research*, *183*, 109137.

Carneiro, P., Crawford, C., & Goodman, A. (2007). The impact of early cognitive and non-cognitive skills on later outcomes.

Cordiano, T. S., Lee, A., Wilt, J., Elszasz, A., Damour, L. K., & Russ, S. W. (2019). Nature-Based Education and Kindergarten Readiness: Nature-Based and Traditional Preschoolers Are Equally Prepared for Kindergarten. International Journal of Early Childhood Environmental Education, 6(3), 18-36.

Cornelius-White, J. (2007). Learner-centered teacher-student relationships are effective: A meta-analysis. Review of Educational Research, 77(1), 113-143. https://doi.org/10.3102/003465430298563

Crescenzi, L., Jewitt, C., & Price, S. (2014). The role of touch in preschool children's learning using iPad versus paper interaction. Australian Journal of Language & Literacy, 37(2), 86-95.

Currie, J. M. (1997). Choosing among alternative programs for poor children. *The Future of Children*, 113-131.

de Brey, C., Musu, L., McFarland, J., Wilkinson-Flicker, S., Diliberti, M., Zhang, A., ... & Wang, X. (2019). Status and Trends in the Education of Racial and Ethnic Groups 2018. NCES 2019-038. National Center for Education Statistics. https://nces.ed.gov/pubs2019/2019038.pdf

Dickinson, D. K., & Porche, M. V. (2011). Relation between language experiences in preschool classrooms and children's kindergarten and fourth-grade language and reading abilities. Child Development, 82(3), 870- 886. https://doi.org/10.1111/j.1467-8624.2011.01576.x

Gavalas, D., Nicopolitidis, P., Kameas, A., Goumopoulos, C., Bellavista, P., Lambrinos, L., & Guo, B. (2017). Smart cities: Recent trends, methodologies, and applications. *Wireless Communications and Mobile Computing*, *2017*, 1-2.

Ece Demir-Lira, Ö., Applebaum, L. R., Goldin-Meadow, S., & Levine, S. C. (2019). Parents' early book reading to children: Relation to children's later language and literacy outcomes controlling for other parent language input. Developmental Science, 22(3), e12764.

Epstein, J. L. (2010). School, family, and community partnerships: Preparing educators and improving schools. Boulder, CO: Westview Press

Flewitt, R., Messer, D., & Kucirkova, N. (2015). New directions for early literacy in a digital age: The iPad. Journal of Early Childhood Literacy, 15(3), 289-310. https://doi.org/10.1177/1468798414533560

Fayyaz, S., Lashari, A. A., Rafiq, K., & Jabeen, N. (2023). Montessori teachers' communication effects on cognitive development of children. *Journal of Namibian Studies: History Politics Culture*, *33*, 115-131.

Foulin, J. N. (2005). Why is letter-name knowledge such a good predictor of learning to read?. Reading and writing, 18(2), 129-155. https://doi.org/10.1007/s11145-004-5892-2

Gay, G. (2000). Culturally responsive teaching: Theory, research, and practice. Teachers College Press.

Gay, G. (2002). Preparing for culturally responsive teaching. Journal of Teacher Education, 53(2), 106-116. https://doi.org/10.1177/0022487102053002003

Gutman, L., & Vorhaus, J. (2012). The impact of pupil behaviour and wellbeing on educational outcomes.

Gallagher, J. J. (1991). Prospective and practicing secondary school science teachers' knowledge and beliefs about the philosophy of science. *Science education*, *75*(1), 121-33.

Jennings, P. A. (2015). Early childhood teachers' well-being, mindfulness, and self-compassion in relation to classroom quality and attitudes towards challenging students. Mindfulness, 6(4), 732-743. https://doi.org/10.1007/s12671-014-0312-4

Jilani, S. A. A. S., Lashari, A. A., & Bukhari, S. S. H. (2022). Organizational culture of successful secondary school in district Larkana: Ethnographic research. *Global Educational Studies Review*, *7*, 626-634.

Jilani, S. A. A. S., Bukhari, S. S. H., Lashari, A. A., Rasool, A., Khoso, T. A., & Shah, S. A. A. (2024). The role of heads' leadership styles in public sector secondary school teachers' commitment in Sindh. *Migration Letters*, *21*(S2), 1629-1642.

Justice, L. M., & Ezell, H. K. (2001). Word and print awareness in 4-year-old children. Child Language Teaching and Therapy, 17(3), 207-225.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: past, present, and future.

Kermani, H., & Aldemir, J. (2015). Preparing children for success: integrating science, math, and technology in early childhood classroom. Early Child Development and Care, 185(9), 1504-1527. https://doi.org/10.1080/03004430.2015.1007371

Kuo, M., Barnes, M., & Jordan, C. (2019). Do experiences with nature promote learning? Converging evidence of a cause-and-effect relationship. Frontiers in Psychology, 10, 1-9. https://doi.org/10.3389/fpsyg.2019.00305

Lashari, A. A., Mahar, S. S., Solangi, M. A., Buriro, S. A., & Chang, S. H. (2023). Music education in language and cognitive development: A critical review. *PalArch's Journal of Archaeology of Egypt/Egyptology*, *20*(2), 2101-2111.

Lashari, A. A., Umrani, S., & Buriro, G. A. (2021). Learners' self-regulation and autonomy in learning English language. *Pakistan Languages and Humanities Review*, *5*(2), 115-130.

Lashari, A. A., & Umrani, S. (2023). Reimagining self-directed learning language in the age of artificial intelligence: A systematic review. *Grassroots (17260396)*, *57*(1).

Lawrence, S., Smith, S., & Banerjee, R. (2016). Preschool Inclusion: Key Findings from Research and Implications for Policy. Child Care and Early Education Research Connections. *National Center for Children in Poverty*.

Ladson-Billings, G. (2014). Culturally relevant pedagogy 2.0: aka the remix. Harvard Educational Review, 84(1), 74-84. https://doi.org/10.17763/haer.84.1.p2rj131485484751

Lee, V. E., Brooks-Gunn, J., Schnur, E., & Liaw, F. R. (1990). Are Head Start effects sustained? A longitudinal follow-up comparison of disadvantaged children attending Head Start, no preschool, and other preschool programs. *Child development*, *61*(2), 495-507.

Lerkkanen, M. K., Kiuru, N., Pakarinen, E., Poikkeus, A. M., Rasku-Puttonen, H., Siekkinen, M., & Nurmi, J. E. (2016). Child-centered versus teacher-directed teaching practices: Associations with the development of academic skills in the first grade at school. Early Childhood Research Quarterly, 36, 145-156. https://doi.org/10.1016/j.ecresq.2015.12.023

Magsi, S. A., Khaskheli, P. N., Soomro, A. R., & Lashari, A. A. (2023). Error analysis in academic writing of post graduate engineering students of Sindh. *Journal of Positive School Psychology*, 1185-1191.

Murcia, K., Campbell, C., & Aranda, G. (2018). Trends in early childhood education practice and professional learning with digital technologies. *Pedagogika*, *68*(3).

Nicole M. Ardoin a,* , Alison W. Bowers b, Early childhood environmental education: A systematic review of the research literature, https://doi.org/10.1016/j.edurev.2020.100353.

Noorani, Z., & Lashari, A. A. (2023). Narratives on the digital leadership practices in Pakistan-issues, challenges, opportunities, needs and constraints in the changing paradigm through the lens of marginalized community members. *Global Sociological Review*, *8*(2), 63-69.

Patalay, P., Giese, L., Stanković, M., Curtin, C., Moltrecht, B., & Gondek, D. (2016). Mental health provision in schools: priority, facilitators and barriers in 10 European countries. *Child and Adolescent Mental Health*, *21*(3), 139-147.

Pervaiz, A., Lashari, A. A., Khan, A., & Bushra, A. (2024). Exploring the challenges of noisy areas faced by teachers in teaching and learning in urban schools. *Pakistan Journal of Humanities and Social Sciences*, *12*(1), 525-536.

Raikes, A., Rao, N., Yoshikawa, H., Cohrssen, C., Behrman, J., Cappa, C., ... & UKRI GCRF Harnessing the power of global data to support young children's learning and development research group. (2023). Global tracking of access and quality in early childhood care and education. *International Journal of Child Care and Education Policy*, *17*(1), 14.

Rymanowicz, K., Hetherington, C., & Larm, B. (2020). Planting the seeds for nature-based learning: Impacts of a farm-and nature-based early childhood education program. *International Journal of Early Childhood Environmental Education*, *8*(1), 44-63.

Rehman, M. A., Lashari, A. A., & Abbas, S. (2023). Analysis of sustainable academic performance through interactive learning environment in higher education. *Global Economics Review*, *8*(2), 129-139.

Saçkes, M. (2014). How often do early childhood teachers teach science concepts? Determinants of the frequency of science teaching in kindergarten. *European early childhood education research journal*, *22*(2), 169-184.

Samad, A., & Lashari, A. A. (2022). Analysis of administrative and educational experience of school principal in enhancing school performance. *Journal of Positive School Psychology*, *6*(11), 3442-3452.

Samejo, A. K., Lashari, A. A., & Mahar, S. S. (2023). A study of developing a prototype of Sindhi primer of early childhood education level in Sindh. *Global Social Sciences Review*, *8*(2), 225-237.

Schweinhart, L. J. (2002). Making Validated Educational Models Central in Preschool Standards.

Shaffer, H. J., Hall, M. N., & Vander Bilt, J. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: a research synthesis. *American journal of public health*, *89*(9), 1369-1376.

Shami, P. A. (2009). Early Childhood Education in Pakistan--Progress and Challenges. *Journal on Educational Psychology*, *2*(4), 98-104.

Shaikh, K., Ghaffar, S. A., Ujjan, A. A., & Lashari, A. A. (2023). A perspective of general education teachers and special education teachers: Inclusive education in Pakistan. *Journal of Positive School Psychology*, *7*(5), 52-66.

Siddiqui, A., Lashari, A. A., & Dahani, A. B. (2024). A critical appraisal on perspective relations between modernism and postmodernism: Highlighting the case of ELT pedagogical practices. *Journal of Arts and Linguistics Studies*, *2*(1), 325-341.

Siming, I. A., Asad, M. M., & Lashari, A. A. (2015). A pilot study on a cross-sectional investigation of science and engineering undergraduates: Motivation towards learning English in Pakistan. *Journal of Education and Vocational Research*, *6*(1), 61-67.

Susan Edwards, Ana Mantilla, Susan Grieshaber, Joce Nuttall & Elizabeth Wood, Converged play characteristics for early childhood education: multi-modal, global-local, and traditional-digital, https://doi.org/10.1080/03054985.2020.1750358

Suhag, A. K., Lashari, A. A., Malik, A., & Memon, F. A. (2017). Analyzing the effects of science teaching methods on students' achievements: A study of secondary school teachers of district Khairpur Mir's. *Journal of Social Sciences and Media Studies*, *1*(2), 27-33.

Michael J. Haslip & Dominic F. Gullo, The Changing Landscape of Early Childhood Education: Implications for Policy and Practice, https://link.springer.com/article/10.1007/s10643-017-0865-7

Tippett, C. D., & Milford, T. M. (2017). Findings from a pre-kindergarten classroom: Making the case for STEM in early childhood education. *International Journal of Science and Mathematics Education*, *15*, 67-86.

Yates, T., Ostrosky, M. M., Cheatham, G. A., Fettig, A., Shaffer, L., & Santos, R. M. (2008). Research synthesis on screening and assessing social-emotional competence. *The Center on the Social and Emotional Foundations for Early Learning*, 1-19.

Zhang, X. Q. (2016). The trends, promises and challenges of urbanisation in the world. *Habitat international*, *54*, 241-252.

Zins, J. E., & Elias, M. J. (2007). Social and emotional learning: Promoting the development of all students. *Journal of Educational and Psychological consultation*, *17*(2-3), 233-255.

Zohra Nisar Hunzai (2007) Early years education in Pakistan: trends, issues and strategies, International Journal of Early Years Education, 15:3, 297-309, DOI: 10.1080/09669760701516975