Early Childhood Educators as COVID Warriors: Adaptations and Responsiveness to the Pandemic Across Five Countries

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Abstract

The ongoing COVID-19 pandemic has seriously impacted countries across the globe. The pandemic has created a completely new teaching–learning environment of interaction for early childhood educators. In many countries, face-to-face teaching has been replaced by remote teaching, while in others, there have been intermittent lockdowns and limited interruptions to regular teaching norms. Given the play-based nature of preschool teaching–learning activities in most countries, educators are required to reimagine the sociocultural relationships to their pedagogical practices in their everyday teaching–learning contexts. This paper sheds light on educators’ experiences and the dramatic shift in their indoor–outdoor teaching–learning environment due to the evolving health measures. The study draws on notions of teachers’ identities and Vygotsky’s cultural–historical concept of social situation of development (Vygotsky, 1994) to capture the new forms of relationships that early childhood educators experienced with their pedagogical environments across different countries during the pandemic. Data were collected from preschool teachers across five countries—Australia, Bangladesh, Norway, Singapore and India using online surveys which included open- and close-ended questions. Findings reveal the on-ground realities and teachers’ adaptations to new pedagogies emerging across the five countries. The new digital environments provided an equally new dimension for change. These changes were seen in interactions, relationships within the everyday pedagogical contexts, as well as the shifting physical and social environment of early years educators.

Keywords Early childhood · COVID-19 · Social Situation of Development · Teacher Identity · Cultural–Historical Theory

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Résumé

La pandémie actuelle de COVID-19 a gravement touché les pays du monde entier. La pandémie a créé un tout nouvel environnement d'interaction enseignement-apprentissage pour les éducateurs de la petite enfance. Dans de nombreux pays, l'enseignement en face à face a été remplacé par l'enseignement à distance, tandis que dans d'autres, il y a eu des blocages intermittents et des interruptions limitées des normes d'enseignement régulières. Étant donné la nature ludique des activités d'enseignement-apprentissage préscolaires dans la plupart des pays, les éducateurs sont tenus de réimaginer les relations socioculturelles avec leurs pratiques pédagogiques dans leurs contextes d'enseignement-apprentissage quotidiens. Cet article met en lumière les expériences des éducateurs et le changement radical de leur environnement d'enseignement-apprentissage intérieur-extérieur en raison de l'évolution des mesures de santé. L'étude s'appuie sur les notions d'identité des enseignants et le concept culturel et historique de Vygotsky de situation sociale de développement (Vygotsky, 1994) pour saisir les nouvelles formes de relations que les éducateurs de la petite enfance ont vécues avec leurs environnements pédagogiques dans différents pays pendant la pandémie. Les données ont été recueillies auprès d'enseignants du préscolaire dans cinq pays—Australie, Bangladesh, Norvège, Singapour et Inde à l'aide d'enquêtes en ligne comprenant des questions ouvertes et fermées. Les résultats révèlent les réalités sur le terrain et les adaptations des enseignants aux nouvelles pédagogies émergentes dans les cinq pays. Les nouveaux environnements numériques ont fourni une dimension tout aussi nouvelle pour le changement. Ces changements ont été observés dans les interactions, les relations au sein des contextes pédagogiques quotidiens, ainsi que dans l'environnement physique et social changeant des éducateurs de la petite enfance.

Resumen

La pandemia de COVID-19 en curso ha afectado gravemente a países de todo el mundo. La pandemia ha creado un entorno de interacción de enseñanza-aprendizaje completamente nuevo para los educadores de la primera infancia. En muchos países, la enseñanza presencial ha sido reemplazada por la enseñanza a distancia, mientras que en otros, ha habido bloqueos intermitentes e interrupciones limitadas de las normas de enseñanza regulares. Dada la naturaleza basada en el juego de las actividades de enseñanza-aprendizaje preescolar en la mayoría de los países, los educadores deben reinventar las relaciones socioculturales con sus prácticas pedagógicas en sus contextos cotidianos de enseñanza-aprendizaje. Este documento arroja luz sobre las experiencias de los educadores y el cambio dramático en su entorno de enseñanza-aprendizaje interior y exterior debido a la evolución de las medidas de salud. El estudio se basa en las nociones de las identidades de los maestros y el concepto histórico-cultural de Vygotsky sobre la situación social del desarrollo (Vygotsky, 1994) para capturar las nuevas formas de relaciones que los educadores de la primera infancia experimentaron con sus entornos pedagógicos en diferentes países durante la pandemia. Se recopilieron datos de maestros de preescolar en cinco países: Australia, Bangladesh, Noruega, Singapur e India mediante encuestas en línea que incluían preguntas abiertas y cerradas. Los hallazgos revelan las realidades sobre el terreno

y las adaptaciones de los profesores a las nuevas pedagogías que surgen en los cinco países. Los nuevos entornos digitales proporcionaron una dimensión igualmente nueva para el cambio. Estos cambios se observaron en las interacciones, las relaciones dentro de los contextos pedagógicos cotidianos, así como en el entorno físico y social cambiante de los educadores de la primera infancia.

Introduction

The World Health Organization (WHO) defines a pandemic as “the worldwide spread of new disease”. On March 11, WHO declared COVID-19 a pandemic (World Health Organization [WHO], 2020). Before COVID-19, the world has been hit by numerous pandemics such as the Spanish flu in 1918 across most of the countries in Europe and Asia, Cholera in 1817 mainly in Indian subcontinent and Europe; SARS in 2003 mainly in Asia, Europe, North and South America. Apparently, Covid-19 and the Spanish Flu pandemic appear similar in terms of duration, magnitude of outbreak, death tolls and mitigation measures. To mitigate the damages caused by pandemics, many countries implement policies and guidelines intending to provide their citizens with health infrastructure, awareness and transmission reduction strategies. And thus, make efforts in achieving the goal of protecting the citizens from the health and economic distress the pandemic may impose (Madhav, Oppenheim, Gallivan, Melumbakani, Rubin, & Wolfe, 2018). Demands for continuing education for children during the pandemic cannot be ignored and felt strongly during previous global pandemics. For example, a century ago, during the Spanish flu pandemic in 1918–1919, while in many cities in the USA the schools remained closed, in two of the major cities, the schools were kept open with enhanced medical surveillance as the health commissioners believed that students are better off in schools, under the supervision of teachers than playing in the streets (Stern et al., 2009). However, as authors in the study had pointed out, many parents were hesitant to send their children to schools and thus kept their children at home. The World Organisation for Early Childhood and Development [OMEPE, (2020)] suggests although the global coronavirus pandemic is largely impacting the global community, early childhood education and care needs to continue protecting child rights.

In the current global COVID-19 crisis, many countries have experienced months-long lockdowns that have heavily disrupted children’s continuous education and care services, especially in the early years. For example, in India and Bangladesh, preschools remained closed physically during months-long lockdown (Mekki & O’Haggan, 2021). Park, Logan, Zhang, Kamigaichi and Kulapichitr (2021) broadly documented the country responses and impacts of the pandemic in early childhood education sector in Australia, Japan, Korea, China and Thailand. Samuelsson et al. (2020) presented cases from Norway, Sweden and the USA and reported the various challenges that preschool teachers faced during the first few month of the pandemic. In Australia, Norway and Singapore, preschools remained open; however, with implications for classroom attendance during the first wave of COVID-19. All of these countries required alternatives to continue

teaching–learning activities for children. Except Norway, a dramatic shift to virtual modes of delivery of teaching–learning activities were reported across all of these countries. The sudden shift left the preschool teachers in a paramount load of adapting to entirely new ways of delivering lessons and meeting the learning outcomes using digital technologies on top of their traditional roles and responsibilities (Crawford et al., 2021; Jalongo, 2021; Timmons et al., 2021).

This study is part of a larger study investigating early years educators' pedagogical innovations during the COVID-19 pandemic. The current paper focuses on exploring the impact of the pandemic on the indoor and outdoor teaching–learning practices of preschool educators. More specifically, the study seeks to investigate the new forms of relationship in early years educators' everyday pedagogical environment due to the pandemic. We discuss India, Bangladesh, Singapore, Norway and Australia as examples given the different structures, policies and frameworks for early years education in these countries. This range of contexts allows a wider understanding on the varied experiences of the early childhood educators shifting teacher identity as COVID warriors across multiple contexts regarding the change of the new rules and responsibilities in this whole new situation.

Early Childhood Education Across the Five Countries

Countries like Singapore, Norway and Australia have long recognised the importance of formal early childhood education (Cheeseman & Torr, 2009; Tan, 2007). In Singapore, the early childhood education landscape has received increased attention since 1999 (Tan, 2007) with implications for policy on the preschool curriculum, and paving the way for a more child-centred play-based approach to learning that enabled meaningful experiences for the young children (Ng, 2011). Australia introduced the early years learning framework (EYLF) in 2009 (DEEWR, 2009). The EYLF was designed for early childhood teachers to provide them with directions in planning their teaching practices. Traditionally in Australia, the field of ECE has laid importance on play, experiential learning, children's choice and teachers as facilitators. Norway has a long tradition of early childhood education through its kindergarten programs that is strongly influenced by Froebel with play as its central ethos (Norwegian Directorate for Education & Training, 2017). Even before the pandemic, the field of early childhood education was at a nascent stage in some countries like India and Bangladesh. In India, the National Policy on Early Childhood Care and Education, the key curriculum document, was first formulated only in 2013 (Ministry of Women & Children Development [MWCD], 2013). In Bangladesh too, the Comprehensive Early Childhood Care and Development Policy was created as late as 2013 (Ministry of Women and Child Affairs [MWCA], 2013).

Everyday Teaching–Learning Practices in Early Years

Both indoor and outdoor environments are integral for creating opportunities for fun, creativity and social interactions among children in early years. Informed by

the policy and curriculum frameworks, preschool activities are generally play based in Norway, Australia and Singapore. In contrast, India and Bangladesh follow a structured routine with greater emphasis on academic learning activities although in recent times there has been a slow and steady shift towards play-based approaches. Children have play-time in their daily routine rather than having every activity designed as play-based in the latter two contexts. In Norway, apart from the daily routine activities like mealtime, sleeping and group circle times, in play-based early years context children engage in various indoor activities but are not limited to art and craft activities, play with toys, role-play, construction activities, science experiments, dancing, music, singing activities and reading books. Outdoor activities include sandpit play, water play, climbing fences, physical obstacles, swings and often excursions in some Norwegian contexts (Kallestad & Ødegaard, 2013). Many of these activities are spontaneous and planned by the teachers, involve intentional teaching, and play by children solitarily or in groups.

Both indoor and outdoor activities are indispensable for young children. Studies have outlined the significance of indoor and outdoor activities in children's social, emotional, physical and overall holistic development. Children in the early years have been identified to display higher activity levels during outdoor play than indoor play (Baranowski et al., 1993; Cosco et al., 2010; Hinkley et al., 2008). Teachers can create effective outdoor learning opportunities for children by providing them time, space, a range of learning materials and experiences (Blanchet-Cohen & Elliot, 2011; White, 2011). Outdoor play in early years has a long-standing tradition in European and Scandinavian countries and has become part of regular programs in many other countries, including Australia, the UK, New Zealand and Canada (Howe, Perlman, Bergeron and Burn, 2020). Studies from Norway and Scotland (Sandseter & Sando, 2016; Howe et al., 2020) reported that despite the risks and challenges in the outdoor environment, both countries place a higher emphasis on outdoor play for offering a rich learning environment. In contrast, Australian educators perceive a less positive attitude for outdoor play activities due to weather conditions. Scottish educators believe outdoor play activities enhance resilience, reduce stress, cater for children's well-being, help children develop confidence and build relationships with nature and each other (Howe et al., 2020).

The nature of regular everyday indoor–outdoor activities in preschool contexts leaves little or no scope for using digital technology tools for pedagogical purposes, for example, in Norway only in 1% cases digital tools were observed to be used in teaching amidst various other indoor–outdoor activities (Kallestad & Ødegaard, 2013). Alelaimat et al. (2020) reported that early childhood educators feel less prepared to use digital technology in their teaching practice. Not all but in some preschools in Australia, Norway and Singapore, one of the major use of digital tools for educators is mostly for communicating children's daily reflections and informing individual child development with parents through some digital portals. Tezci (2011) reported that application of technology skills are limited in most cases given that various technology is not available in many preschools.

Remote Teaching and COVID-19 Pandemic

COVID-19 pandemic has forced the global population into adopting new measures like social distancing and lockdown. Early learning centres in the USA and many other countries were closed for an uncertain period and recalled for reimagining post-pandemic early childhood education (Wasmuth, 2020). During the first wave of the COVID-19 pandemic, many early learning institutions moved to remote teaching across many countries over the world. For example, a qualitative study in the USA analysed 50 zoom sessions conducted by three early childhood teachers for toddlers and preschool age children (Szente, 2020). The online session for the toddlers covered topics, for example, colours, shapes, stories and for preschoolers weather report, pledge, stories and literacy content. According to Jalongo (2021), in the early childhood context where most programmes follow children's interest based philosophies, a 360 shift to remote learning has totally changed the early years teaching–learning context. A number of studies highlight the need to include new content on improving technology skills and use of technology in teacher education programs to prepare better early childhood teachers to deliver programs in future crisis conditions (Alelaimat et al., 2020; Jalongo, 2021).

Children's regular indoor and outdoor play activities shifted to many new forms due to the new rules of maintaining social distancing, health and hygiene issues. In Canada, all teaching–learning activities were moved online from March 2020 and continued indefinitely, calling it Learn at Home Initiative (Government of Ontario, 2020). A wave of stark inequality has become predominant in the field of education, particularly for access to digital tools and technologies (Jalongo, 2021; Wasmuth, 2020). Facilitating children's learning by considering individual differences, learning styles and interests through technology has been a challenge for many educators (Kim, 2020; Jalongo, 2021). Many teachers have constantly been innovating and designing strategies to facilitate students' learning efficiently. For example, in addition to the synchronous learning (e.g. live lesson), asynchronous learning experiences (e.g. worksheet to complete at home) are also being designed for students to share their reflections and queries on the virtual classes (Kim, 2020). On the national level, some countries like the USA extended support to their teachers in dealing with the challenges related to technology and provided training sessions for teachers to adapt to the numerous digital platforms (Crawford et al., 2021; Kim, 2020). Equity and access to online education were highlighted as a significant issue in western contexts, for example, in the USA and Canada (Jalongo, 2021; Timmons et al., 2021; Wasmuth, 2020). Other than this, places where the preschools opened soon after the lockdown, as in Norway, teachers were supported in implementing safe indoor and outdoor play activities with the help of guidelines imposed by the health department (Norwegian Directorate of Health, 2020; Ødegaard & Hu, 2020).

Research Question

The early childhood education contexts across the five countries inform that Singapore, Norway and Australia have a long-standing history of formal ECE, whereas India and Bangladesh are working towards developing a robust formal ECE sector. The present study particularly seeks to fill the gap identifying how educators from the participating countries improvised regular teaching–learning activities, adapted to online teaching and how it reshaped their teacher identity and interaction with the environment due to the elevated social situation caused by the pandemic.

The research questions of this study investigate:

- In what ways did the early childhood educators reimagine their relationship with the pedagogical environment during COVID-19?
- How were early childhood educators' identities shaped and reshaped in response to the challenges of COVID-19 within their pedagogical environments?

Theoretical and Conceptual Framings

The theoretical framework of this study is framed incorporating Vygotsky's cultural–historical concept of social situation of development (Vygotsky, 1994) and theory of identity first proposed by Erikson (1968).

Social Situation of Development

To understand the human development environment cannot be separated from their everyday learning context. According to Hedegaard and Fler (2008, p. 5), "It is children's intentional activities and the interactions in which they take part in their everyday social situation- and how other participants contribute to these situations through their interactions- that should be studied." Therefore, the role, meaning and influence of the environment (Vygotsky, 1994, p. 338) is significant to consider. Further, Vygotsky mentioned that the environment is not an absolute marker of development. It has a relative relationship to development. The relationship between the

Fig. 1 Links between SSD and Confluence of Identities (Adapted and modified from Barnes, Moore & Almeida, 2021)

teacher and the environment is therefore important to understand the conditions created in everyday context. Vygotsky discussed that each individual relates to the surrounding environment based on their personal characteristics hence interprets the everyday environment. Multiple children in the same environment may interpret a particular moment differently. As Vygotsky discussed, a child's response to a particular situation above their biological age explains the maturity and awareness of the child beyond their biological age and, in particular, is mentioned as a social situation of development (SSD). This concept is unique in explaining the relationship between a person and their environment at a given time.

Limited studies are available exploring the concept of social situation of development in a pedagogical context involving educators. For example, Gomes & Fleeer (2018) identified that preschool teachers working in the same environment but with heightened awareness interprets the physical environment conceptually than from an everyday level of understanding. Such difference in interpreting the environment matters in their pedagogical practice. Worldwide, the COVID-19 pandemic has been marked as a crisis period. The social and physical environment in early years pedagogical context has been heavily impacted due to the pandemic. According to Vygotsky (1994), the relationship between the environment and the person at a given period needs to be considered while studying development. This pandemic is considered a significant time of development for early years educators that enforced the educators to conceptualise pedagogy and their relationship to the environment at a new level in terms of use of technology, social distancing and heightened hygiene issues.

Confluence of Identity

Teacher identity is a core component of an individual; it is 'a way of defining, describing, and locating oneself' (Clayton, 2012, p. 2)—giving us a sense of who we are (Erikson, 1968). Identity defines the most vital attributes of human distinctiveness through assimilating the simultaneous experiencing of self-sameness on the one hand and self-distinction on the other (Erikson, 1956). Erikson's identity formation postulates multiple physical and social factors along with the influences of cultural contexts (Erikson, 1968). Identity, therefore, brings together many aspects of an individual's being, a sum of various parts (Barnes, Moore & Almeida, 2021). In particular, for teachers, personal, professional and environmental identities play a significant role in individual decision-making and prioritizing issues in everyday practices. Identities are also complex and fluid, constantly evolving based on individual circumstances, knowledge, opportunities and many other factors (Hall, 1990). The constant evolving and maturing of identities is critical to consolidate and build teacher's identities. Maximizing our individual functioning requires us to be clear in our minds about our goals, values and beliefs (Waterman, 1985). Opportunities for reflection and building identities need to be a critical component of an individual's everyday life.

The different components of an individual's identity need to be in sync with each other to support well-being and a sense of accomplishment, as shown in

Almeida et al. (2021). This confluence of various streams of identities supports and strengthens the final flow (identity), allowing for individuals to find fulfilment. In addressing the fluidity of identities, we also need to consider the physical and social influences as promoted by Vygotsky's unique concept of the social situation of development. This understanding compliments the above-mentioned notion of fluid and changing identities, with opportunities to build them coming across as essential, especially in this time of crisis. Therefore, the current paper seeks to use the cultural–historical concept of social situation of development (Vygotsky, 1994) and confluence of identity (Erikson, 1968) for analysing early childhood educators' reshaping the pedagogical relationship with the environment due to the pandemic. Figure 1 presents our conceptualisation of the relationships between these two main theoretical concepts that frames the study. It shows the interplay and influence of various factors, that impact the key identities highlighted in this study, eventually nourishing the core at the confluence of where they merge.

Table 1 Demographics of the participants from the five countries

Characteristic	Australia (<i>n</i> = 21)	Singapore (<i>n</i> = 26)	Bangladesh (<i>n</i> = 42)	India (<i>n</i> = 128)	Norway (<i>n</i> = 67)
Role/position					
Assistant teacher	1	–	20	23	6
Teacher	12	15	11	76	3
Senior teacher	6	8	6	–	51
Others (e.g. Principal)	2	3	5	29	7
Educational qualification					
Diploma	2	11	1	11	12
Bachelor's degree	14	13	11	60	50
Others (e.g. graduate diploma, Master's)	5	2	30	57	5
Age group of children mostly work with					
18 months–2.5 years	1	2	–	–	0–2/3 years, 29
2.5–4 years	3	9	3	49	2/3–5 years 28
4–5 years	17	2	5	40	0–5 years 9
5–6 years	–	13	33	39	
Working in early childhood/preschool setting					
Less than a year	–	6	–	2	0–2 years 4
1–5 years	1	3	8	39	3–4 years 6
6–9 years	2	6	8	22	5–6 years 4
10 years +	18	11	23	65	More than 6 years, 53

Methodology

Given the current context where access to early childhood settings and conducting observations and/or personal interviews pose several challenges, the multinational research team opted for an entirely web-based survey that offers the advantage of reaching participants who are otherwise hard to reach (Wright, 2005). Furthermore, this mode also serves as a time and cost-effective option, a critical factor during these uncertain times.

Data Collection

Following ethics approval from the researchers' institutions, early childhood educators were invited to respond to an online survey through social media like Twitter, Facebook early childhood teacher/educator network groups and emails. The online survey, administered through Qualtrics, was open between 01 October 2020 and 30 March 2021. The survey consisting of open- and closed-ended items, gathered data on participants' demographics and their experiences of providing education during the pandemic.

Open-ended items specifically asked participants to describe (a) the key features of their outdoor play experiences/engagement before and during the pandemic; (b) how the pandemic has reshaped their teaching and learning experiences at present and implications for future classroom practices; and (c) the large scale implications of the pandemic on their role. We ensured the survey instrument was asking similar questions but ensured cultural considerations. One of the pit falls would have been 'One size fits All' approach. We used the term early childhood settings to refer to all settings that provide care and/or education for children between 0 and 8 years of age, and early childhood educators for those who currently work with young children as teachers/educators, caregivers and/or administrators interacting with children.

Data Analysis

Quantitative data were analysed using descriptive statistics employing SPSS25. Qualitative data (responses to the open-ended items) were analysed using a deductive method in a team-based approach. Data for each country were assigned to a pair of researchers who did the analysis independently and then discussed as a pair to come up with an agreement of the initial themes identified. The theoretical concepts of social situation of development and confluence of identity informed the thematic analysis to unpack and reflect the reality of the multiple social contexts explored throughout the dataset (Braun & Clarke, 2006). We followed the rigorous six step procedure of thematic analysis suggested by Braun and Clarke (2006). Firstly, the researchers familiarised them with the open-ended responses in the data set. At the second step codes were generated and categorised under the theoretical concepts. For example, responses related to physical and social environment were coded such

as indoor and outdoor activities, use of digital technology, teacher professional development, change of teacher–child/child–child interaction. At the fourth step, when data for all participating countries were analysed using this approach, a number of online meetings were conducted by the larger team to compare, contrast and review the emerging themes for each country. At the fifth stage, a common understanding of the key themes identified from the analysis were named for example, on-ground reality and new rules of engagement which also had sub-themes and were reported in this paper as the final step of the analysis.

Findings

Participants' demographics are presented in Table 1.

Total 284 participants from the five countries responded to the questionnaire. The respondents hold various positions for example—teacher, senior teacher, assistant teacher and some others hold a principal role in their respective institutes. Most of the educators from all the five countries hold a Bachelor degree. We found most of the respondents from Australia working with 4–5-year-old children, for India and Singapore with 2.5–4-year-old children, and for Bangladesh 5–6-year-old children. In India and Bangladesh early childhood care is institutionalised from 2.5 years old onwards. Therefore, no participants were available working with that age group. Only a few participants from Singapore and India had less than one year's experience. Most of the participants hold more than 10 years of work experience.

Norway is a little bit different from the others, since all kindergartens are mixed-aged and are often divided into two age groups, with children aged 1–3 being placed in one group and children aged 2.5–5/6 in another group (Ødegaard, & Hu, 2020) while some small kindergartens have only one group mixing children of all ages together. Most respondents are degree holders with more than 10 years of experience and the number of teachers working with the two groups of children are more or less the same.

Findings are clubbed under the two main themes identified from the qualitative analysis: (a) on-ground reality and (b) new rules of engagement.

Theme 1: On-ground Reality

Due to the differences in the modalities of operation, the different countries showed varied responses to the pandemic. Responses from all the five countries showed a divergence of major aspects regarding the on-ground realities—differences in mode of conducting regular activities, digital divide and professional development opportunities.

Differences in mode of conducting regular activities: Both India and Bangladesh saw a steep rise in the number of COVID-19 cases—with closing down of educational institutes as a major response to curtail the spread of the pandemic. This meant there was a complete shift to online teaching in these two countries. In Bangladesh, public schools delivered teaching through government dedicated TV channels, and

private schools conducted lessons through online platforms. In contrast, Singapore faced minimal lockdown measures, and educational settings experiencing minimal disruptions. Australian early childhood centres also stayed open, especially for essential service workers continuing both online and onsite activities. However, the Australian participants responded less about their online teaching issues and were more focused on the issues with face-to-face teaching during the pandemic. Norwegian kindergartens were closed for most children for about 5 weeks (16 March to 21 April 2020) and then from 21 April on they have been open for all children. Like Australia, kindergartens stayed open for children of essential service workers, especially those who provided medical service to the public during the 5-week lockdown. There were no online teaching issues since teaching was not really conducted in Norwegian kindergartens. At the same time, some educators have pointed out that they used digital platforms to get and keep in touch with children during the lockdown period.

However, educators' adaptive flexibility was visible when addressing these challenges. While most educators saw online teaching as a challenge in India, with time, they adapted to it quite quickly. Digital literacy and educators' confidence in engaging in the virtual mode increased. Educators mentioned their learnings in making online sessions lively and interactive and using visual aids effectively, thereby becoming '*techno savvy*'. At the same time, they learned skills around creating and uploading videos, zoom which came out as a preferred medium for online teaching, as well as sourcing digital resources from mediums like YouTube, Powerpoints, online games, annotations, websites and Apps.

Engaging with children online and ensuring the communication and interactions meet the children's needs while meeting learning outcomes. For example, as one of the educators mentioned, "*Effective methodologies, strategies and usage of material and apps for online teaching so as to make teaching learning more interesting and interactive, cater online to differentiated learning and styles in children, and to create a backward design plan to achieve the learning outcomes.*" This was done alongside building a rapport with the children so they do not feel disconnected.

Similarly, in Bangladesh, teaching using digital online platforms and getting used to the various features was very challenging for most educators. According to the educators, online teaching was more challenging than teaching face-to-face for preschool children. The nature of the activities for preschool children which is primarily hands-on and activity-based, is much more challenging to deliver online. One of the Bangladeshi educators mentioned, "*Firstly, home-schooling for pre-primary levels is much harder than the primary students... preschool is more about activities, while online classes are fewer activities. Educators don't get the chance to teach the children practically...that's why it's hard to hold up their concentration for such a long time. The communication is getting poorer between the children and the educators.*" However, over time, most of the educators felt confident to deliver online lessons since sufficient support was provided. Most of the educators mentioned that they "*feel more competent than before to deliver lessons in a new crisis if the support is given properly.*"

In contrast, Australian educators showed fewer issues in digital confidence but worked harder in developing competency towards adapting to the new rules and

regulations around social distancing, sanitisation and hygiene. *“we found we were constantly finding new ways to conduct outdoor group times and to bring indoor activities outdoors, more so as the term progressed. It was both rewarding and demanding to make these changes.”*

Norwegian educators expressed their feeling stressed and burnt out due to lack of staff since many educators got sick because of the extra workload brought by the pandemic. Similar to Australian educators, though they did not have issues with the use of digital devices, they worked hard to develop competence to organize activities for children under the new rules and regulations around social distancing, sanitation and hygiene. One educator said, *“the increased sanitation task has been a heavy burden on top of all.”*

Professional development opportunities: Professional development opportunities varied widely across the countries. All the educators surveyed in India mentioned that they had received some training to move to virtual teaching mode. In Bangladesh, educators from both private and public sectors received training on distance and online teaching. The professional development was mainly linked to using trainings on using various online platforms like Google meet, Zoom for online teaching, developing skills on using digital teaching–learning materials, involving parents during online sessions, strategies on how parents can carry on the online session activities with their children at home and a range of resources to create online teaching content. This translated into heightened digital confidence in educators in these two countries.

In Australia, educators reported an overall lack of support, especially from the government. They had minimal opportunities for professional development both for teaching online and for understanding and implementing the increased sanitisation, hygiene and social distancing rules. Educators felt increasingly stressed and additionally burdened with having to address face-to-face and online teaching simultaneously. This was reflected in the following quote, *“I felt that EC educators were thrown to the wolves by the government and I felt expendable.”* Singapore did not show a complete shift to online teaching. However, there was increased emphasis on access, behaviour and classroom-related practices as recommended by the Early Childhood Development Agency (ECDA), resulting in modifications to existing classroom practices for young children.

As mentioned previously, there was no online teaching in Norway. Similar to Australian findings, Norwegian educators also mentioned that they had minimal opportunities for professional development in terms of organising activities for children because time was used to implement the hygiene, sanitation and social distancing rules. One of the educators wrote *“we have to be creative about what activities to organize for children under the new rules”*. Some educators reported that they had online training and were informed of the hygiene, sanitation, and social distancing rules.

New Rules of Engagement

Apart from adapting to digital environments, educators demonstrated a new pattern of interaction with the regular physical and social environment. It is important to note the overlap with the earlier theme of On-ground realities—the data presented in this theme connects and furthers the previous theme too.

Changing nature of indoor–outdoor play activities: Outdoor play is a key feature of regular activities in Australia, Norway and Singaporean preschools. Particularly in Norway, children spend a significant portion of their time in kindergarten playing outdoors. Some examples of regular outdoor play in preschools in these countries mentioned by the educators include- water, sand and mud-pit play using varieties of equipment and utensils, physical obstacle courses, incursion sports activities, outdoor kitchen play, outdoor Yoga, imaginary play in cubby house, playing with natural loose part materials, free play like tiggy or ring a rose, weekly excursions in neighbourhood playground, park and bushland. According to the Bangladeshi and Indian participant educators, early years outdoor play mainly features cricket, soccer, traditional games like ha-du-du, physical exercise, annual sports, etc. Educators from all the participating countries believe outdoor play activities significantly contribute to developing children's social, emotional skills together with physical development. One of the Australian educators mentioned, outdoor play provides children with *“agency to engage in all weather conditions.”*

Due to the pandemic the countries experienced a varied change in outdoor play opportunities for preschool children. For example, the pandemic caused an over-emphasis on outdoor play in Australia and Norway. Educators realised the need to *“bring the indoors outdoors”* as they were aware that *“indoors it was easier to spread germs.”* The government especially recommended outdoor play in Norway, and in some kindergartens, children spend the whole day outside. Some educators showed their concerns about the youngest ones, especially those aged one and two. This was reflected in the following quote, *“it is difficult to motivate the younger children to play in the winter time because it is hard for them to play with the outdoor winter toys limited by their physical development of the age.”* At the same time, some educators mentioned that they became more creative at using natural materials for outdoor play and increased the number of role-play and fantasy play.

In contrast, Singapore showed a shift towards bringing the outdoors indoors which was similar to India/Bangladesh. As one educator noted, *“So far, all outdoor play for children of the age group 2–3 year old is still replaced with indoor exercise. Children are engaged in moving their limbs to songs such as ‘freeze dance’ and ‘walking walking hop hop hop’ as well as games such as ‘musical chairs’ and ‘duck, duck, goose’.”*

Adapting new pedagogies: Educators were constantly learning and remodeling their teaching to address the need of the hour. They used a range of innovative approaches to handle the many challenges posed by the pandemic. While a shift to digital learning was a dominant feature for India and Bangladesh; Singapore, Norway and Australia saw pedagogical practices taking different forms keeping children's optimal development in the context of new regulations.

A marked decline in some learning experiences, particularly group-based cooperative learning experiences, was observed across the five countries. Singapore educators reported a reduction in sensory learning experiences. Educators shared that they have entirely suspended water and sand play or individualised them by providing materials such as the sensory play tub. This in particular, was the case for sand and water experiences which are key features of children's play experiences during early years. Prior to the pandemic, educators were able to engage children in group-based learning experiences during which children explored such materials and problem solving with peers. In addition to providing a creative learning experience, sensorial play facilitated cooperative learning skills in young children. However, the introduction of the CovidSafe ABC framework saw the adoption of classroom practices that maintain hygiene and minimise the risk of transmission across classes (Ministry of Social and Family Development, 2020). With regard to outdoor play, Singapore educators noted a decline in both the duration and frequency of outdoor play. Some of the outdoor experiences were compensated by outdoor walks and indoor gross motor activities such as indoor dance and obstacle course with social distancing measures.

For Singapore, restrictions on access, behaviours and classrooms (Covid-Safe ABC) led to children participating in classroom experiences during which they were generally assigned to designated spaces. For example, children were required to use allocated furniture and materials and adhere to social distancing measures during activity time. Staggered timing also meant that children sometimes were left to play amongst themselves instead of mixing with others. Children were discouraged from mingling at the play table or from sharing toys; in some cases the educators also reduced shared play equipment and enforced hand washing after each time playing in the sand or mud-pit area. One educator mentioned that, *"In relation to new rules for play, I had to create new rules to adhere to social distancing. Nonetheless, such new rules of not sharing materials and not in larger group size discourage cooperative play. It becomes more solitary play which may suit one or two children but not those who are more social beings."* Similarly, an educator from Norway mentioned that *"Play is organized to ensure safety and hygiene instead of what children wish to play."* Besides, children could neither play wherever they wish to nor play with whoever they wish to as they used to. The varieties of toys and artefacts for play have been reduced as well because of the sanitation restriction.

In contrast to Singapore, the Australian educators saw an increased emphasis on outdoor learning experiences. According to one of the participants, *"Outdoor sessions have gained more emphasis, thus intentionally taking indoor sessions outdoors. New play rules incorporate social distancing rules. Home based remote learning incorporated ample opportunities for outdoor play and outdoor sessions."* The educators also used new approaches to teaching, including yoga, active play and imaginary outdoor activities as children were playing indoors, bringing indoor dance activities outdoors using Bluetooth music. Educators adopted several covid-safe practices to stay within government regulations of mask-wearing, social distancing and increased sanitisation. Likewise, the early childhood educators in the Australian settings planned and implemented play themes that prioritised the safety and hygiene of children. *One of the educator participants from Australia mentioned*

“New play themes involve building more awareness of and consciousness of hygiene.” Norwegian educators expressed exactly the same opinion as Australian educators, as one educator noted *“we have to be creative and bring indoor plays outdoors.”*

Different from the other countries, some Norwegian educators mentioned that a tighter relationship was built between educators and the children because educators could spend more time with children doing different activities together. However, one educator also pointed out that it was challenging for some children to play with the same group of children saying *“the children have generally played with the same children in the pandemic period and we have seen that it has been very difficult for increasing numbers of children.”*

While the children across the five contexts experienced outdoors and indoors differently, what was clearly evident was that the participants across the contexts in general shared the emergence of new rules of play primarily with hygiene and safety measures as the top priority. Educators also noted that children were constantly encouraged to keep themselves and their equipment and surroundings clean which sometimes hampered their play and social engagement. According to one Australian participant, *“New rules such as having to be one metre apart, or that children have to stay within the provided boundaries, not to engage in pair or group play. Our preschool stood by the preplanned play themes, the duration and venue for outdoor play to our very best, so as to not disrupt opportunities provided for the children within the given regulations enforced by the local authorities for education centres.”*

Overall, the five countries showed a range of similar issues and approaches in adapting to the pandemic while also offering an understanding of how varied contexts can raise very different issues.

Discussion

The findings reflected a shift in educators' identities which were reshaped and redeveloped by the social situations arising from a dramatically changed pandemic environment. Despite the variations in the cultural contexts and approaches to containing the pandemic in various contexts, there was uniformity in how educators' identities shifted in these times.

One of the key shifts was seen in how educators faced the challenges and interacted with their changed physical and social environments. This was seen by their rapid adaptations to online learning and teaching pedagogies, an almost instant shift in their attitudes towards remote learning, and also the quick turnaround in how they increased their digital competencies (Timmons et al., 2021; Jalongo, 2021, Crawford et al., 2021). A shift to the virtual mode of teaching changed the nature of interaction between students and educators, and our participants showcased the willingness and drive to make this change happen across all countries in varying magnitudes. The other major shift was seen in how educators displayed adaptability and responsiveness to the social situation, going beyond their regular roles as educators.

Fig. 2 Social situation of development: Digital environment and the new forms of pedagogical relationship reshaping early childhood teacher identity

Figure 2 captures the new digital component of interaction along with the new factors contributing to the social and physical environment of the everyday practices of the educators.

Adaptability: Firstly, Educators saw the pandemic as an opportunity to learn and adapt, and meet demands, despite the many constraints. They played an active role and were proactive in learning new technologies, modelling innovative pedagogical approaches and displaying creativity in dealing with different situations.

Overall, most educators faced challenges in terms of interacting with both the physical and social environment. Due to the shift to the virtual mode of teaching, the nature of interaction shifted. The educators feel that the challenges are waning over time and make them more confident and competent to face new challenges in the future (Crawford et al., 2021).

Educators kept their personal and environmental identities submerged, while their professional identities were magnified as they adapted to the situation of the pandemic. A third dimension of the digital environment emerged through data analysis. This aspect of the digital environment took over a large part of the social and physical interaction with the children and their families. Although the digital elements are part of both physical and social environments, they appear as a strong component in the early childhood context in all these countries in a new way than they used to be. Generally, there is almost no or minimal use of digital devices in everyday activities to communicate with children (Kallestad & Ødegaard, 2013). In contexts like India and Bangladesh, there was hardly any use of digital devices or platforms used for

conducting regular teaching–learning activities for early years level. For Singapore, Norway and Australia, use of digital technology appeared magnified than usual. Teachers in these three contexts juggled between online and face-to-face teaching during pandemic. Therefore, interacting with the digital component became a significant aspect of reshaping educator professional identity by providing stimulus to enhance their professionalism.

Responsiveness: Educators were proactive and constantly responsive (not reactive), showcasing their professionalism in addressing the needs of the pandemic. Changing new rules-taking indoor to outdoor in Australian and Norwegian context while incorporating outdoor to indoor in Singapore. For Australia, bringing indoor to outdoors is a contrast to the pre-pandemic early years pedagogical context (Howe et al., 2020). In relation to the physical environment, reduction of play materials to reduce contact with common play materials were observed across the preschools in Singapore, Australia and Norway. Reducing regular major play activity materials and replacing them with alternative approaches heightened educator awareness and responsiveness to the crisis situation.

In terms of social interaction, new play rules like social distancing, small group or solitary play activities and new play themes were introduced in Australia, Singapore and Norway. Due to dramatic changes in physical and social engagement rules, educators must go beyond and above their traditional roles that resonate with a conscious awareness about the new social situation indicating teacher professional development (Vygotsky, 1994) and shift in teacher identity recognising the new forms of engagement with the pre-existing pedagogical environment.

The adaptation and responsiveness displayed by the educators was not based on choice but need. This however, does not take away the inner strength and capability showcased by the educators to not buckle under pressure but rise up to the challenges of COVID as true warriors would. The COVID-19 pandemic is the hardest hit of any previous pandemic. No matter from what geographical locations the early childhood educators participated in this study, a common shift in their professional identity have been resonating throughout the challenges faced at different contexts, adaptation techniques, heightened competencies and overall responsiveness to the social situation observed - sketched one big picture of the collective shift of teacher professional identity. Early childhood education culture has always promoted adaptation as a means of working with a range of children with diverse learning needs. It has been the hallmark of early childhood educators' professional identities. Further, the ways the educators in this study demonstrated adaptability to the need of the hour showcases ways teacher identity was reshaped somewhat permanently to bring into fold young children's needs beyond learning that includes well-being. The findings of this study has larger implications on the future changes in the Early Childhood Education policies in each of the participating countries as well as in other contexts. The informed insights from this study suggests future policy changes in enhanced use of digital technology in EC contexts for education and communication purpose, professional support on continuing teaching during crisis situations and ongoing support for teachers' mental health and well-being.

Conclusion

Educators across the five different countries demonstrated a new level of competence for interacting with the digital environment. Also, the pattern of interaction changed in terms of interacting both with the pre-pandemic social and physical environment in everyday pedagogical context of the early childhood educators. The whole new social situation contributed to reshaping teacher identity in terms of the changes within the vital components of everyday teaching–learning environment no matter what level of maturational history of early years education each country holds. The heightened awareness and capability to cope with the dramatic shift in sociocultural environmental factors enabled the educators to face future crisis situations with elevated confidence.

Declarations

Conflict of Interest There is no conflict of interest.

Ethical Approval The study was approved by the Monash University Human Research Ethics Committee. Approval No. 26146.

Consent to Participate The study secured informed consent from the participants.

Consent to Publication The study findings were consented to be included in journal articles, conference papers, education presentations and public information sessions.

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