

A Kaleidoscope of Play and Learning in Online Spaces during COVID-19 Times: Insights from Early Childhood Educators

Charmaine Bonello*, Josephine Deguara, Josephine Milton, Rosienne Camilleri,
Tania Muscat

Department of Early Childhood and Primary Education, Faculty of Education, University of Malta,
Malta

* Corresponding Author E-mail Address: charmaine.bonello@um.edu.mt

Citation: Bonello, C., Deguara, J., Milton, J., Camilleri, R., & Muscat, T. (2023). A Kaleidoscope of Play and Learning in Online Spaces during COVID-19 Times: Insights from Early Childhood Educators. *International Journal of Childhood Education*, 4(1), 29-49. <https://doi.org/10.33422/ijce.v4i1.401>

ABSTRACT

Through the perspectives of early childhood educators (ECEs) working with under-fives, this article explores how play and learning featured when shifted abruptly to online spaces during COVID-19 in Malta. This work draws on Siemens' connectivism learning theory which sees the integration of technology and social interactions as connections that empower learning in a digital age. The COVID-19 scenario called for immediately available data; consequently, a quantitative methodology was adopted. Two online surveys were held: in 2020 and 2021. Two hundred sixty-three ECEs participated in the first online survey, while seventy-nine the second. Findings locate benefits, challenges, and opportunities for play and learning online, shaped by the development of three key changing patterns in Maltese ECEC: an uneven start for ECEs, e-interactions, and curricula and pedagogies in online spaces – a kaleidoscope of play and learning in COVID-19 times. Implications for pre-service and in-service ECEs' support, monitoring, and training are discussed to facilitate effective play and learning in online environments.

keywords: play, online learning, Early Childhood Educators, under-fives, COVID-19

1. Introduction

As the World Health Organization announced the COVID-19 outbreak in early 2020, most schools in Europe had to close their doors (European Commission, 2021). Having early childhood settings closed might significantly impact young children's overall well-being, learning, and development. The Early Childhood Education and Care (ECEC) sector has been inadequately supported in measures and policy responses, especially compared to other levels within education systems (OECD, 2021a; 2021b; 2021c). Studies revealed inconsistencies in the support provided to Early Childhood Educators (ECEs) compared to primary school teachers - the latter experienced considerable guidance in ICT training adaptive lesson plans (Alban Conto et al., 2020; OECD, 2021c). The UNICEF Report informs that almost all countries introduced remote learning support during school closures, yet 60 percent did so for pre-primary education (Nugroho et al., 2020). The OECD (2020) survey on distance education for young children reports that 50 percent of the participating nations had measures planned to incorporate remote and hybrid teaching and related ICT skills as part of training programs for ECEs. Consequently, it is no surprise that school closure, physical distancing requirements, lack of guidance for the early years workforce (OECD, 2021c), and families kept at home

“dramatically reduced” children’s access to the play and learning experienced during pre-COVID times (UNESCO, n.d., p. 1).

In Malta, ECEC settings closed their doors between March and June 2020, followed by another closure in March 2021. With the set mitigation measures, teachers resorted to various digital learning platforms to offer learning opportunities within online spaces in the Maltese ECEC sector (Spiteri, 2020). Studies show that the rapid shift to online learning spaces during COVID-19 created a unique educational context (Hodges et al., 2021; Vassallo et al., 2021). Although at a somewhat slower pace than their primary, secondary, and higher education counterparts, early childhood online learning spaces began to be set up to keep the home-school channels open.

This article draws on the findings of a larger project that explored the effect of COVID-19 on Education in Malta. The two-phased study was conducted after the first and second waves of the pandemic (September 2020 and September 2021) and resulted in five research reports (Milton et al., 2022; Bonello et al., 2022a; Camilleri et al., 2022; Deguara et al., 2022; Muscat et al., 2022). The key stakeholders' perspectives in each research report are University Students in Initial Teacher Education (University of Malta), Leaders and Educators in early years settings (Childcare centers 0-3 years; Kindergarten settings 3-5 years), and primary schools (compulsory schooling, 5-11 years), and Parents of children attending childcare, kindergarten and primary schools in Malta. In this article, we draw on a selection of the data from the early childhood educators’ report (Bonello et al., 2022a) to explore what can be learned about play and learning within online spaces through their valuable insights.

2. Literature Review

2.1. COVID-19 Lockdown and Early Years Provision

The United Nations Educational, Scientific and Cultural Organization (UNESCO) estimates that school closures touched around 1.6 billion learners across 169 states (The Alliance for Child Protection in Humanitarian Action, 2022). From the onset of COVID-19, national and international institutions used various support systems and resources to help educators, families, and learners strengthen their digital literacy skills and use online teaching and learning toolkits for all educational levels, including the pre-school years (UNESCO, 2020). When early years settings were closed, ECEs tapped into the worlds of synchronous and asynchronous distance learning methods to support families and their children. For example, the use of asynchronous modes such as phone calls, messaging applications, and email to send learning material or instructions to families; recorded audio/visual content and web-based learning environments with games; and live video conferences with families and their children – synchronous modes (European Commission, 2021).

There seems to be a dearth of research on the most commonly used mode of distance education by ECEs during settings closures, yet some studies highlight that asynchronous modes were more often used in comparison to synchronous modes, particularly in the first phase of COVID-19 school lockdowns (Foti, 2020; Steed & Leech, 2021). A survey with kindergarten educators in Italy (Panesi et al., 2021) indicated that online learning assisted with sustaining a bond between educators and young children. Even with the same research study, some activities seemed impoverished because of the need for physical contact.

In the early years, staff needs to partner with families and relate with the microsystem of the home environment to strengthen the foundations for children’s overall well-being, learning, and development (Egan, 2021). In this light, ECEC curricula must be rooted in pathways that

connect links between early years settings and homes to explore more ways where families may be assisted in supporting young children's learning, development, and well-being (OECD, 2021a). During the COVID-19 lockdown, many children experienced physical isolation (Araújo et al., 2021).

2.2. COVID-19, Play, Learning, and the Early Childhood Educator

In this article, learning is understood as prioritizing the affordances for play and exploration (Nilsson et al., 2017) to promote young children's overall holistic development, learning, and well-being rather than learning as prescriptive or formally taught. In a Maltese 21st-century ECEC context, a shift to promoting a more child-centered approach to the curriculum prioritizes learning through play rather than a prescriptive and traditional one (MEDE, 2012). This curricular reform for the early years has brought about several challenges for educators to keep promoting an emergent curriculum with young children during COVID-19 times (Bonello et al., 2022a).

Research shows that an ECE's role is critical to facilitating learning through play (Tsai, 2012). ECEs' in-service training emphasizes the importance of sustaining respectful and reciprocal interactions, building solid relationships, and how to provide meaningful and playful learning opportunities within a shared physical environment (Shorty & Jikpamu, 2021). Hence, an abrupt shift from learning through play experiences in ECEC settings to online early learning raises questions about the impact on the quality of play and learning, children's overall well-being, and their development. Also, as part of the early years' provision, online learning reorients and reshapes 'play,' 'pedagogy,' and 'curriculum' in ECEC and the in-service training programs for ECEs. Shorty and Jikpamu (2021) contend that training programs for ECEs should be rethought, including online early learning strategies.

A systematic review of the implementation of early childhood education during COVID-19 (Gayatri, 2020) transpired that most children experienced online learning and that this engendered challenges concerning young children's self-regulation, digital technology, learning materials preparedness, parents' perceptions of online learning, and the time and knowledge required to be with the children. Gayatri (2020) further concluded that communication between teachers and parents is vital to supporting early childhood online learning. Hodges et al. (2021) assert that sensibly planned online content communicates a research and development process of methods, appropriate resources, and instructional tools for achieving desired outcomes.

A quantitative study by Sánchez-Cruzado et al. (2021), where 4883 Spanish teachers participated, concluded that training programs are an urgent need for teachers to enhance their digital competences by integrating methodology and educational strategies. Such findings question the appropriateness of ECEs' pre-service and in-service training related to digital literacy skills in diverse contexts and whether this supports them adequately to offer positive play and learning experiences in online spaces. The notion that online learning may constrain children's holistic development and the argument that the ECEC curriculum should be reimagined through the integration of virtual instructional strategies are core in the work of Mphahlele and Jikpamu (2021).

The role of ECEs is viewed as psychologically and physically challenging, placing educators of young children at risk of work-related stress (Kelly & Berthelsen, 1995). In pre-COVID times, ECEs experienced troubles that are present to date, such as a lack of recognition, staff shortages, and low salaries synonymous with early childhood education in several countries (Eadie et al., 2021; McMullen et al., 2020; Seo & Yuh, 2021). Seo and Yuh (2021) correlate educators' well-being with their levels of resilience; thus, their abilities to adapt positively to

adverse situations. Such evidence is reflected in policy frameworks and other research indicating the significance of valuing and recognizing the ECEs' role and the provision of quality pedagogical support to ensure that ECEs' professional and psychosocial needs are met at all times (Eadie et al., 2021; United Nations Children's Fund, World Bank and United Nations Educational, Scientific and Cultural Organisation, 2020). The chances for young children to experience optimal play and learning with professional, responsive, caring, and sensitive adults may grow in contexts where educators' well-being is prioritized through continuous support and guidance.

2.3. COVID-19 and Reshaped ECEC Learning Spaces

The COVID-19 pandemic transformed the learning spaces used by educators and learners across the globe (Bennett & Jowallah, 2022). This implies that significant changes in ECEC provision led most young children to experience sudden shifts in their daily routines and inaccessibility to ECEC services (Squires et al., 2021). Recent neuroscientific evidence shows that abrupt transitions and attachment loss between young children and their primary caregivers in early years settings and homes impact the developing brain (Centre on the Developing Child, Harvard, 2016). As specified in UNICEF (2021), the early years are a critical phase where brain connections take shape rapidly, determining the children's cognitive, social, and emotional development and thus impacting their future lives. Given such evidence, it can be concluded that it was essential to maintain primary caregivers-child connections through online spaces during the closure of early years settings to mitigate the aftermath of unexpected sudden transitions and loss of attachments.

Research brought to light several challenges that countries had to face when provision for online ECEC was introduced during COVID-19:

Digital infrastructure in ECEC and homes - Limited access to adequate internet connection and equipment in homes was described as a “major” to “moderate” challenge (OECD, 2021). Surfaced inequalities in access to online learning spaces in 70% of the OECD, G20, and its partner countries were also reported (OECD, 2021). Maltese schools and students were relatively well equipped with ICT resources, particularly in primary schools (82% vs. 35% - EU level) (European Commission, 2020a). Nonetheless, Malta's 2014-2020 Digital Education Agenda focused more on Grade 4 children and upper levels in the education system (Government of Malta, 2019; Ministry for Education and Employment, 2016).

Families and Children's engagement in online learning - Parents' skills, motivation, availability, and the challenges to efficiently use technology were key factors in early years settings during COVID-19 (European Commission, 2021). A survey by Vassallo et al. (2021) indicated that most parents (3 to 11-year-old children in Malta) had to share technological devices with multiple family members. This had an undesirable effect on the regularity of their children's attendance in online sessions. This was further compounded by the parents experiencing difficulties coping with multiple responsibilities and having less time to ensure that children attended and were supported during online sessions (Vassallo et al., 2021).

Effective online learning for young children – Inadequate provision of training, monitoring, and ongoing support for ECEs in the area of technology and how it can be efficiently used with young children is reported in several studies (Ford et al., 2021; OECD, 2021b; Steed & Leech, 2021). Although the circumstances brought about by COVID-19 leaked several challenges for adapting an ECEC curriculum to online learning, European Commission's 2021-2027 Digital Education Action Plan missed out on including actions for early years settings – yet, it includes action plans for primary and secondary school levels (European Commission, 2020b).

Given the above, we needed to capture how play and learning experiences were promoted when early years settings closed for the under-fives in Malta. Considering the rapid fame of online learning in a changed reality within educational arenas, this study's theoretical frame draws on Siemens' (2004) contemporary learning theory, that of connectivism. This theory acknowledges the value of technology in learning, thus promoting learning outside the individual (e.g., through cloud-based video conferencing platforms). For Siemens (2004), learning in a digital age occurs when connections in external networks occur and are sustained for knowledge creation. Grounded in this learning theory, the presented work sought to answer this research question:

How did play and learning feature in the content and approaches offered for 0 to 5-year-olds when settings were closed during the COVID-19 pandemic?

3. Methodology

This article draws on the findings from a more extensive study (Bonello et al., 2022a) to objectively capture the realities experienced by ECEs in Maltese education during the first and second waves of COVID-19. Considering the urgent need for available data and the time this study was conducted when social distancing measures had to be followed, the authors adopted a positivist epistemological stance that allowed them to stay physically detached from the participants and employed a primarily quantitative research design.

Educators working in kindergarten and childcare settings (0 - 5 years) in Malta were the participants of this study. The participants were recruited by disseminating two online surveys via social media platforms (September 2020 and September 2021). In the first survey, a total of 263 participants participated. The majority, 99.2% (n=261), were Maltese nationals. Most were females, and only one educator identified as male. The age range for participants was 18 to 64 years, with an average age group of 36.1 years. In the second survey, 79 educators participated. Most - 97.5% (n=77) - were females, and only 2.5% (n=2), were males. An average age group of 40.2 years was the outcome for Survey 2, yet the total participants ranged from 18 to 64 years. As with Survey 1, most of the participants, 89.9% (n=71), were Maltese nationals. Table 1 below presents the participants as per their role in education:

Table 1.

Participants as per their role in education (Surveys 1 & 2, Q1)

Participants' Role	Scholastic Year 2019/2020		Scholastic Year 2020/2021	
	1st Run		2nd Run	
	N	%	N	%
Kindergarten Educator (Educator working with 3 to 5-year-olds)	201	76.4	58	73.4
Childcare Educator (Educator working with 0 to 3-year-olds)	30	11.4	0	0
Learning Support Educator (Educator supporting access to learning and assessment in a class or an individual learner on a one-to-one basis).	29	11.1	11	13.9
Other	3	1.1	10	12.7
Total	263	100	79	100

Survey 1 generated a higher response rate. This outcome may be due to increased social media usage rates by the participants and perhaps the need for ECEs to express themselves in a time of uncertainty. Despite the advantages of an online survey, one major disadvantage is sampling,

given that participants may be restricted to a group who are frequent users of social media and the internet (Wright, 2005). Nonetheless, Survey 1 and Survey 2 denote a fair distribution regarding the participants' age groups.

The online surveys, developed by the research group, were made available to participants in English as in a Maltese educational context, it is a language in which all educators understand and are fluent. Survey 1 consisted of 46 items, including two open-ended questions allowing respondents to answer in open-text format and share their experiences, feelings, and understandings. Most of the closed-ended questions were multiple-choice and 5-point Likert scales. The second survey included 30 items, of which four questions were open-ended. Some items were retained from Survey 1 to Survey 2, several items were adapted to reflect the changes in the situation since the previous year, and other new items were added.

For this article, a few survey items were selected from the more extensive study (Bonello et al., 2022a) to be explored in more depth through a focus on how play and learning featured in online spaces when early years settings were closed (March - June 2020; March 2021). Thus, 16 items were chosen: 10 from Survey 1, 5 from Survey 2, and a common item to present the demographics related to the role of the educator in both surveys. Given that Survey 1 consisted of more items related to the provision of online learning and also due to a more extended period of settings closure (March - June 2020 – Survey 1; March 2021 – Survey 2), more items from this survey were chosen. The criteria for selecting these specific items were elicited from the research question. These included data on when early years settings were closed and data indicating how play and learning featured in online spaces. An overview of the selected questions from Surveys 1 and 2 for this article is provided in Table 2 below:

Table 2.

Overview of selected questions from Surveys 1 and 2 to be included in this article

Question No.	Survey No.	Overview of the chosen questions from Surveys 1 and 2 that respond to this article's key question: <i>How did play and learning feature in the content and approaches offered for 0 to 5-year-olds when settings were closed during the COVID-19 pandemic?</i>
1	1 & 2	The role in early childhood education of the participants of both runs of the survey.
2	1	How ECEs were directed/encouraged by their leadership teams at the beginning of the physical closure of early years settings and how this influenced the implementation of online learning.
3	1 & 2	Compares the access to home broadband between Surveys 1 and 2.
4	1	The role of ECEs during the first closure of early years settings.
5	1	How ECEs supported families and children remotely during the first physical closure of early years settings.
6	1	How ECEs used real-time online session.
7 & 8	1 & 2	Compare children's participation during live online sessions.
9	2	The children's satisfaction and participation within online spaces.
10	1	The use of worksheets and how this influenced early learning during the first closure of early years settings.
11 & 12	1 & 2	Compares the learning opportunities offered by ECEs within online spaces.
13	1	The online learning experiences where children seemed more motivated and engaged.

Surveys 1 and 2 were field-tested with some educators before dissemination. The outcomes ensured that the questions were well-defined and some possible technical difficulties were resolved before the respondents filled these in. The surveys were launched online using

SurveyMonkey. Data from this study were extracted and imported into SPSS for analysis purposes.

The research ethics committee at the Ministry of Education and the University of Malta Research Ethics Committee approved the more extensive research study that this article draws on. The surveys consisted of an introductory page highlighting the aim of the study and a data protection statement explaining the procedures set up, ensuring potential respondents that data would be collected, stored, and used ethically. This page in the surveys also reassured anonymity, that IP addresses would not be collected, and that the data would be used solely for the study. Educators were also notified about voluntary participation, and that submission of the online survey would be considered as granting informed consent (Allen & Roberts, 2015). In the next section, the results drawn from the questions selected from both surveys will be presented and discussed as separate and woven strands unfolding three key emerging patterns.

4. Results and Discussion

Similar to a Kaleidoscope – creating new colored patterns – the presented work captures three developed patterns (see Figure 1 below), brought about by changes and innovations due to the sudden shift to online ECEC provision during COVID-19, that influenced and may continue to influence play and learning with under-fives.

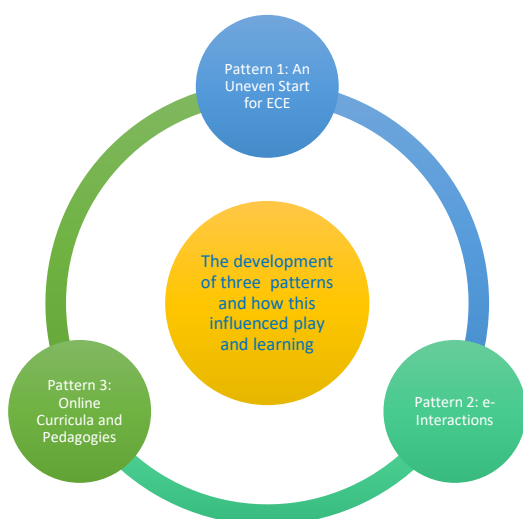


Figure 1. The Development of Three Key Patterns: A Kaleidoscope of Play and Learning

4.1. Pattern 1: An Uneven Start for ECE

Data revealed that an unsupported and reactive response for ECEs during the first lockdown of schools and centers in Malta engendered an uneven start compared to educators at other levels of education (Busuttil & Farrugia, 2020; Camilleri et al., 2022; Alban Conto et al., 2020). Lack of guidance, monitoring, and support led to the fear of the unknown, and this was one of the main channels that impacted how play and learning featured in online spaces.

Figure 2 below shows how ECEs were guided by their leadership teams during the first settings closure (March 2020; Survey 1). The ECEs stated that 49.2% of the leaders recommended that the online platform and social media pages be used to communicate with parents, whereas 47.2% urged ECEs to go for whichever method they prefer. 37.9% of the leaders suggested using emails to communicate with parents, but only 13.8% supported ECEs in developing a daily policy to do real-time online sessions. Half of the educators in Survey 1 asserted that they

had to respond to the situation without any direction. In Survey 2, only 6.7% of the respondents specified that they received support in 2020-2021. Undoubtedly, as this results section will show, the lack of guidance, monitoring, and support impacted how play and learning are featured in online spaces. Similarly, recent research reports on the lack of guidance, and disempowerment of ECEs, leading to reduced access to meaningful and playful learning opportunities for young children during COVID times (Alban Conto et al., 2020; OECD, 2021c; UNESCO, n.d).

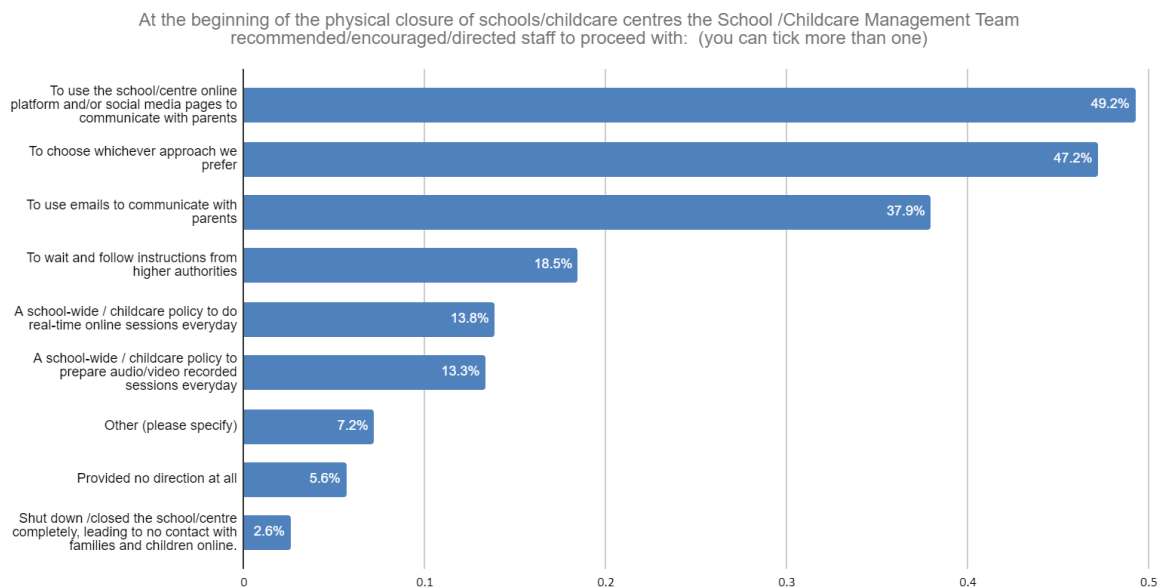


Figure 2. How ECEs were directed/encouraged by their leadership teams at the beginning of the physical closure of early years settings in Malta (Survey 1, Q2)

In Survey 1 (Q3), 30% of the respondents stated that they could not organize an online session due to a lack of confidence in using online technology (50%), limited access to digital devices (30%, Survey 1, increasing to 61.8% Survey 2, Q 3), and limited access to home broadband (50% Survey 1, increasing to 70% Survey 2, Q3). This lack of knowledge and skills and surfaced digital divide left many ECEs feeling disempowered to offer play and learning experiences to the children in their care.

4.2. Pattern 2: e-Interactions

The quality of interactions between young children and their primary caregivers is essential to maximize children's learning in the early years (Dalli et al., 2011; Fisher, 2016; Trevarthen, 2009). This section transpires the benefits and challenges of interaction between adults and young children within online spaces – e-interactions – and how this can hinder or promote play and learning. Figure 3 below shows that during the closure of early years settings, ECEs spent *less time* observing children (81.5%), interacting with children (77.4%), and engaging in assessment processes that capture significant moments in children's learning and development (72.6%). Open-ended comments in both surveys supported these findings:

No child or parent ever sent feedback when I sent the learning opportunities every week. I felt sad and useless.

(Respondent, Survey 1)

It is very difficult to take notes and observations during online sessions when you have to control 3-year-olds accompanied by their grandma/parent.

(Respondent, Survey 2)

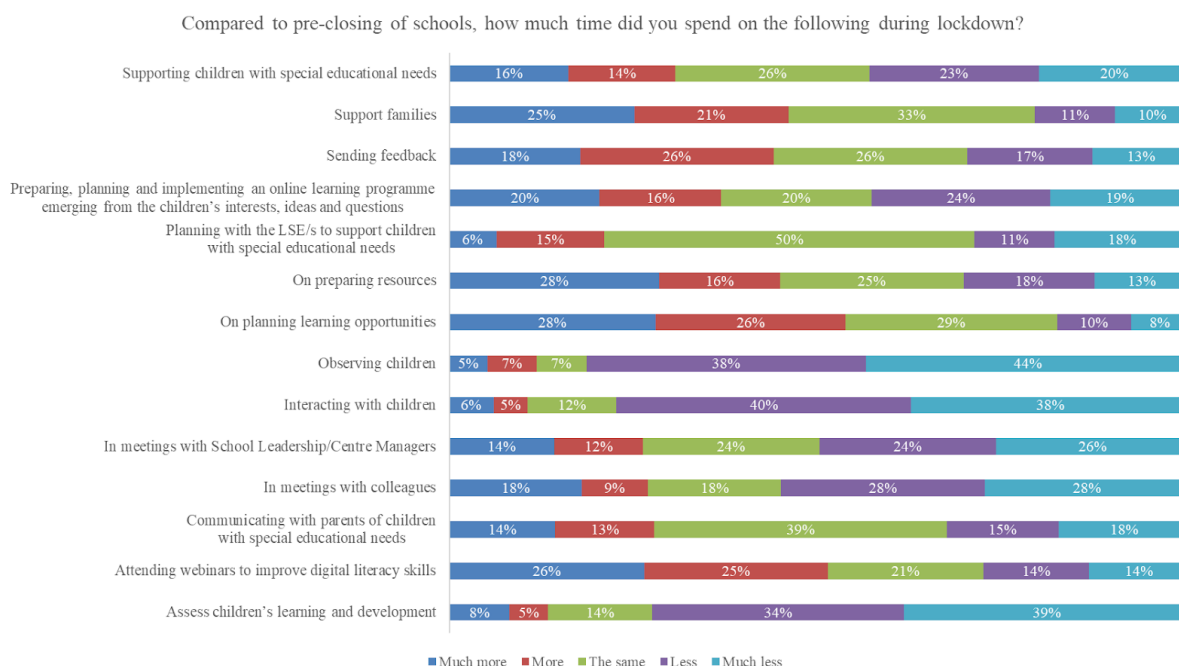


Figure 3. The role of ECEs during the closures of early years settings (Survey 1, Q4)

The modes used did not support optimal play, learning, and the flow of interactions that maximize learning during the first school/center closures. Figure 4 below demonstrates that most ECEs (Survey 1) emailed parents with instructions and links to learning opportunities (89.1%). Also, other ECEs sent PowerPoints (75.1%) and worksheets (75%). 59.6% of the respondents shared video-recorded learning opportunities to support families and children. Most ECEs claimed that they “rarely or never” conducted live sessions with parents (66.9%) or live sessions with small groups of children through video conferencing (59.9%). Instead, half of the respondents used live videoconferencing whole-group sessions with children either often/very often (26.2%) or sometimes (22.7%). However, 38.4% of the ECEs declared that they “never” planned for live whole-group sessions with the children in their care during the first closures of early years settings.

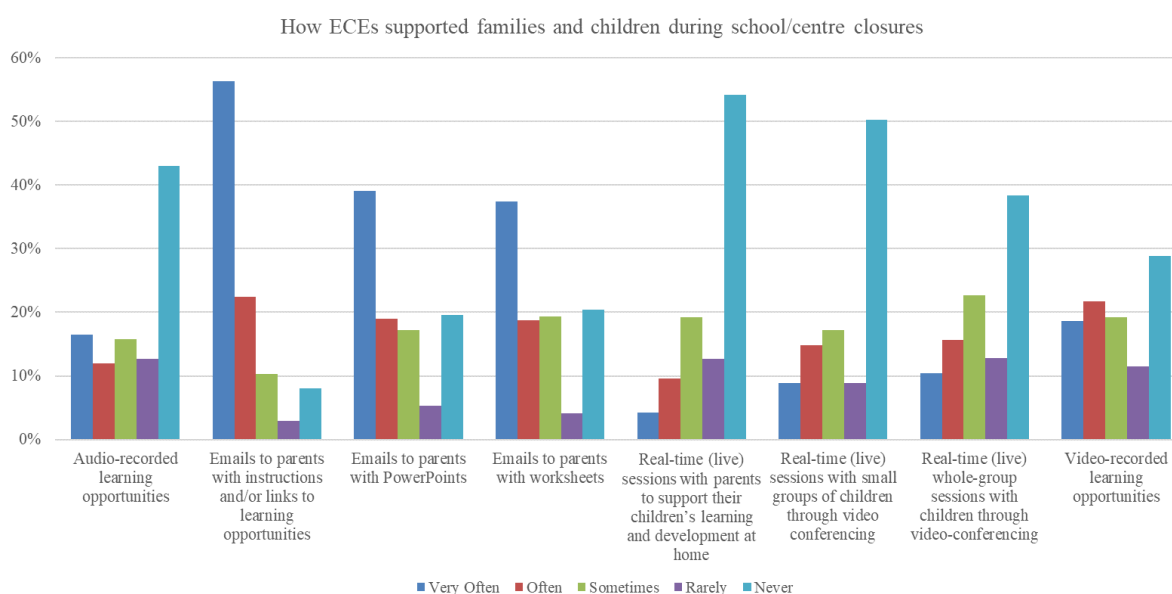


Figure 4. How ECEs supported families and children remotely during the first physical closure of schools/centers in Malta (Survey 1, Q5)

Figure 5 below (Survey 1) shows how ECEs used online real-live sessions. More than half of the educators said they enjoyed the e-interactions with the children (66.1%). Educators also indicated that it felt like a more natural communication (51.8%). They claimed that the children interacted with their peers, and active participation was witnessed (50%). 40.2% stated that synchronous sessions allowed parents to ask questions and follow up with their children. Given the ongoing efforts to implement the emergent curriculum in 21st-century Maltese early years settings (MEDE, 2012), 22.3% stated that live real-time sessions allowed them to adapt to an emergent approach to the curriculum online. 34.8% stated that depending on the outcomes of the learning experiences offered and the children's level of participation and interest, they could inform their planning in more purposeful ways.

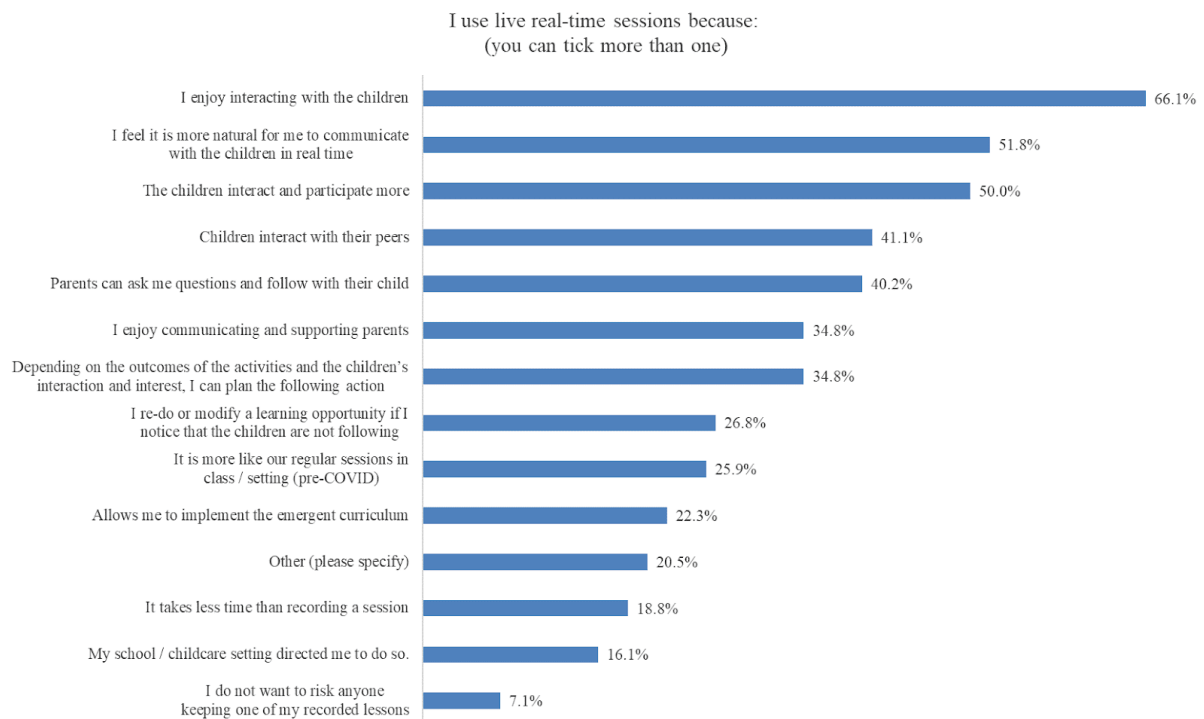


Figure 5. How ECEs used real-time online sessions (Survey 1, Q6)

An interesting finding in this study is how the new reality of interacting remotely with parents and children brought about a surge in child participation through relationship-driven remote learning; a finding supported by Deguara et al., (2022). As presented in Figures 6 and 7 below, almost half of the ECEs in Survey 1 and the majority of ECEs in Survey 2 indicated that the children's level of participation increased when their parents supported them.

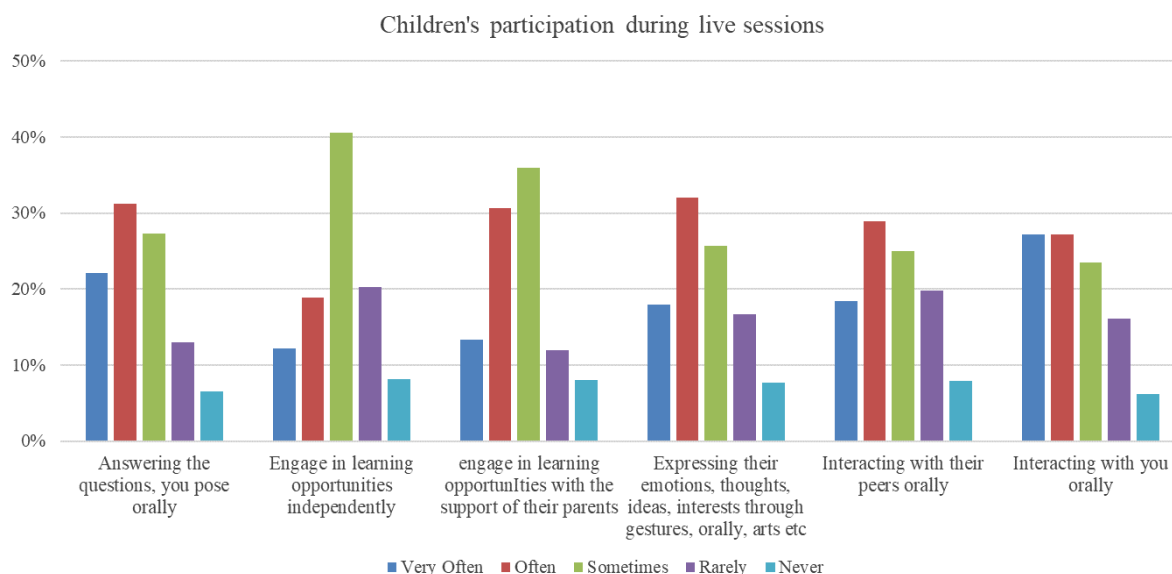


Figure 6. Children's participation during live sessions (Survey 1, Q7)

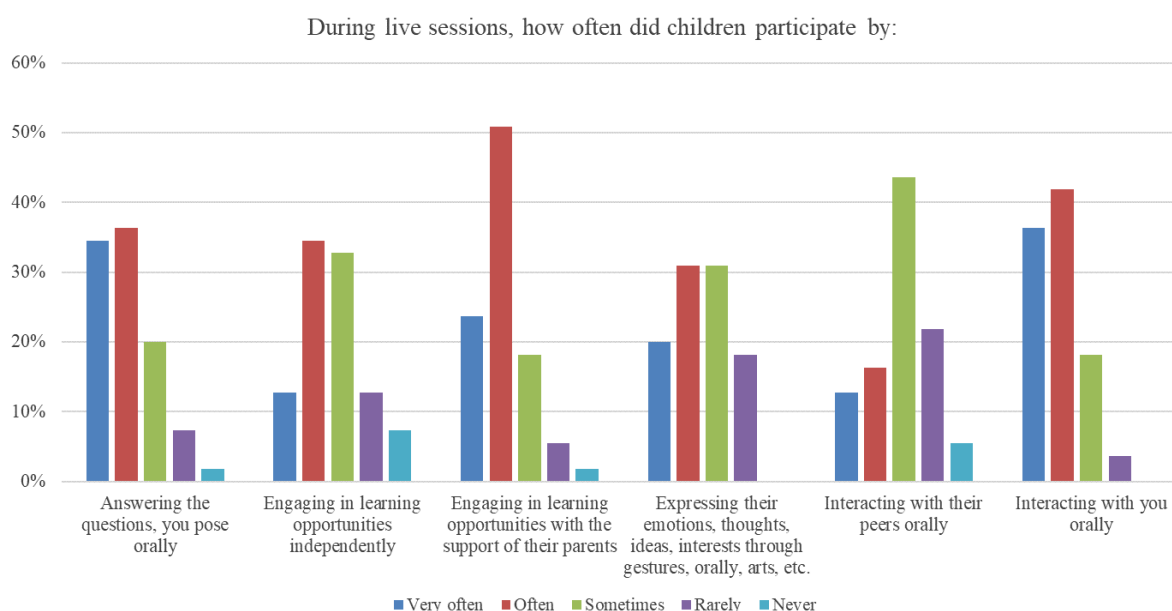


Figure 7. Children's participation during live sessions (Survey 2, Q8)

Interestingly, it can be concluded that during live sessions (synchronous), children's level of involvement augmented when they were supported by their parents (44% - Survey 1; 74.5% - Survey 2) as opposed to when they were engaged in learning opportunities independently (31% – Survey 1; 47.3% - Survey 2). The level of children's involvement is central to quality learning experiences (Laevers, 1994).

In Survey 2 (see Figure 8 below), most respondents claimed that under-fives were willing to participate actively during the real-time/video-recorded online sessions (65.5%). ECEs also reported the children's satisfaction with the frequency of the online sessions (63.6%) and the regularity in the children's attendance (61.8%). As stated earlier in this article, 61.8% of the children had the necessary device/s, and according to some ECEs (58.2%), the children were satisfied with the quality of the real-time online sessions. Around half of the ECEs in Survey 2 noted that the children were willing to follow real-time/video-recorded online sessions

(52.7%). However, only 16.2% indicated that children found real-time/recorded online sessions challenging to follow. In the section “other responses,” three ECEs indicated that for some young children learning hours and length of real-time sessions resulted in challenges, so they opted to rearrange the timing, duration, or the process of the learning experience offered.

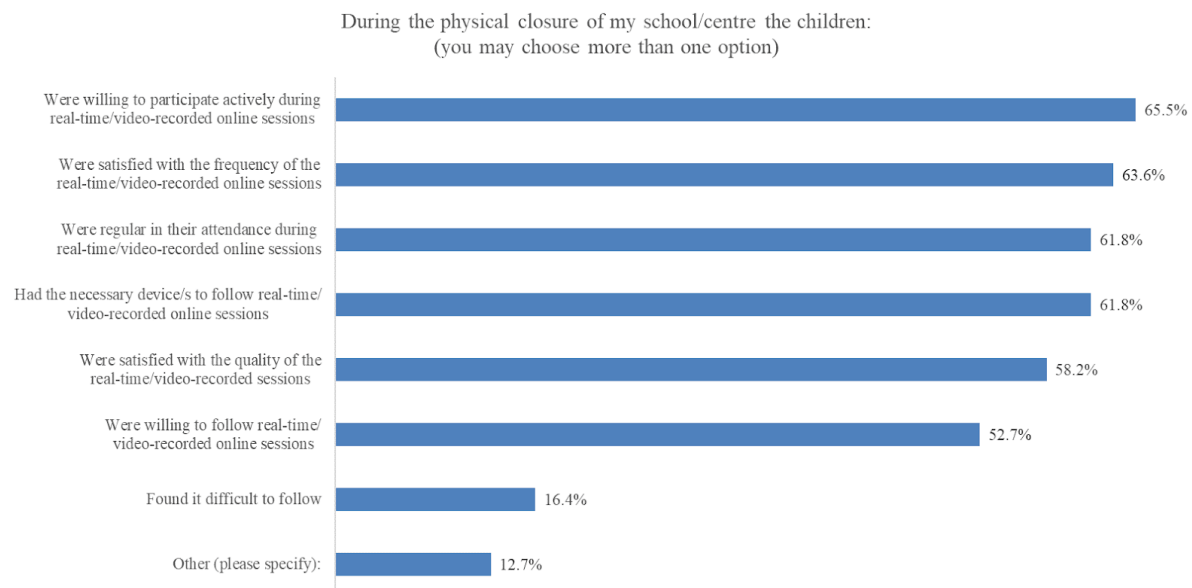


Figure 8. Young children’s satisfaction and participation within online spaces (Survey 2, Q9)

The critical finding of engendered connections between primary caregivers and young children within online spaces backs the theory of Siemens (2004) – connectivism – recognizing the value of technology and learning as a connecting process. This study formed connections between families, educators, and children, revealing an increase in children’s participation within online spaces. This study transpired connectedness through e-interactions links to *relationship-driven learning environments* grounded in the globally renowned Italian Reggio Emilia (Malaguzzi, 1993) approach. The philosophy underpinning this approach sheds light on learning as socially constructed between people (Vygotsky, 1978) – preceding cognitive development. It emphasizes the foundations of strong relationships between individuals in a group. Malaguzzi (1993) reminds us that young children learn through active participation in their immediate environments and not from transmitting knowledge through teaching. To this, we argue that the discovered increase in children’s participation when connected with their parents and educators in online spaces may assist in sustaining triad e-interactions between families, educators, and young children, subsequently allowing for developing shared understandings about the way young children learn best and extended affordances of play and learning in homes, settings and online spaces – when used effectively.

The data above signals a storyline of detachments and attachments between the actors in online ECEC spaces and how this influenced play and learning. In the first lockdown, ECEs made less use of online live sessions with children and families. Emails sent to families were a commonly used one-way tool to resort to during the first settings closure, creating a sudden loss of attachment between children and their primary caregivers at the setting. Attachments and detachments concerning relationships are vital in determining the well-being and mental health of adults and young children (Bowlby, 1969). The need to avoid the recurrence of sudden detachments in ECEC is to be addressed – for well-being and to avoid limiting play and learning opportunities in the first phase of a child’s life.

As reported in the work of Panesi et al. (2021), the developed pattern of e-interactions in the presented study reveals that the extension of early learning experiences to online spaces may be a new pathway for primary caregivers in homes and early years settings to connect and build stronger bonds in the best interest of the young children entrusted in their care. This study also shows that engaging in remote triads between families, educators, and young children, facilitated new e-interactions with peers. The developed e-interactions should be remembered in a post-COVID era as these may serve as an additional tool for ECEs to support the idea of elevating and supporting parents as primary educators.

4.3. Pattern 3: Online Curricula and Pedagogies

The study surfaces a ‘play’ and ‘work’ quandary, resurfacing a longstanding traditional approach to the education of young children (Bonello, 2022a; 2022b). In Survey 1, most educators stated that they made use of worksheets (see Figure 9 below) for families to view at their convenience (60.7%) and for flexibility purposes (43.6%). Only 5.1% of ECEs were directed by their leaders to use worksheets. 18.8% of the educators stated that parents expected them to send work/worksheets at home. 23.9% of the respondents declared that worksheets are easy to find on the Internet and develop (35%). 31.6% of the ECEs considered worksheets with letters and numbers as an essential tool to prepare under-fives for formal schooling, whereas 26.5% reported that worksheets were pre-planned to form part of the learning program they provide within their settings.

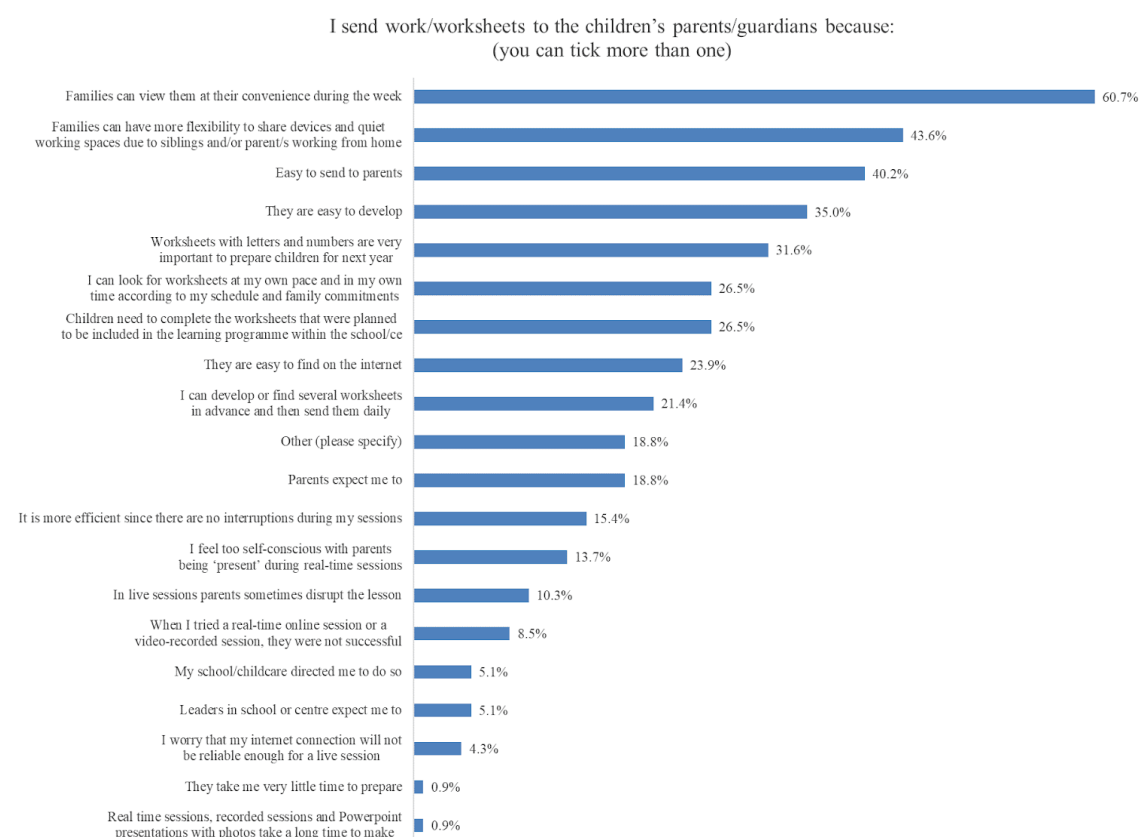


Figure 9. Use of worksheets in the early years during schools/centers closure (Survey 1, Q10)

Also, a tendency to prioritize the teaching of letters and numbers as preparation for compulsory schooling is featured in this study. The findings (see Figure 10 below) show that giving instructions to promote mathematical learning was the most common approach in online spaces

with young children. 93.5 % of the respondents gave instructions for mathematical learning at least once a week. Educators also reported sending online resources (90.5%); giving instructions for creative learning (88.9%), learning numbers (88,6%), physical education (86%) and sensory learning experiences (84%); storytelling in English (85.1%), singing nursery rhymes (78.4%), and giving instructions to teach letters (77%). These were among the most popular approaches used by most ECEs at least once a week. Most ECEs claimed they never used “eating lunch together” or “developing a children’s web” to develop project-based learning to implement an emergent approach. It can be argued that while online sessions assisted with the bonding between educators, families, and young children, meaningful play and learning experiences for the under-fives seemed to be impoverished - given the use of worksheets, limited online learning, and lack of guidance, monitoring, and support for ECEs to improve their knowledge and skills in this area. These results validate findings from a survey conducted with kindergarten teachers in an Italian context. The quality of play and learning opportunities seemed poor due to the sudden shift to online learning (Panesi et al., 2021).

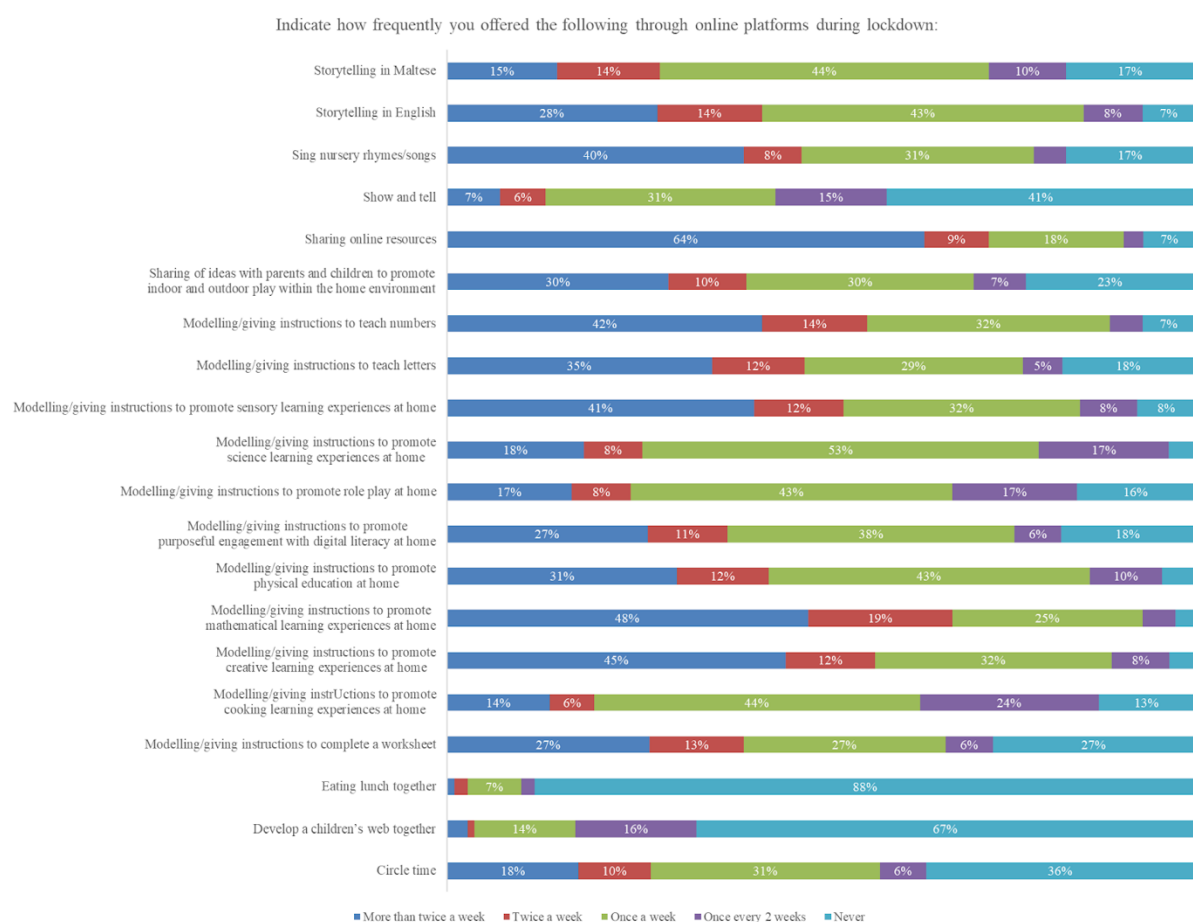


Figure 10. Learning opportunities offered by ECEs within online spaces (Survey 1, Q11)

In Survey 2 (see Figure 11 below), storytelling (98%) was the most popular activity during online sessions as opposed to the Mathematics learning area in Survey 1. Mathematics (87%), singing nursery rhymes activities (96%), and sharing online resources (95%) seemed to be less popular during the second closure of early years settings. It was noted that circle-time learning experiences (94%) were conducted more often (65% - Survey 1). A drop in the provision of sensory and creative learning experiences within online spaces is evident in Survey 2. ECEs (40%) stated that they developed a children’s web as a tool to implement the emergent curriculum through project-based learning within online spaces. This may indicate an increase

in ECEs (Survey 1 – 33%) trying to offer learning experiences that emerged from the interests and ideas of the children in their care.



Figure 11. Learning opportunities offered by ECEs within online spaces (Survey 2, Q12)

In Survey 1 (Q13), ECEs had to mention (open-ended question) an online experience when the children seemed more engaged and motivated. From 71 responses, the most common were storytelling (n=14), science experiments (n=7), cooking (n=12), and others where children had to create/experiment using readily available material at home (n=12). The suddenly reshaped pedagogies and curricula in online spaces are underpinned by contradicting progressive and traditional education philosophies, promoting a kaleidoscope of learning that promotes play and exploration and traditional and more formal learning experiences for children under the age of five. This study shows that online spaces resurfaced traditional early learning methods yet unveiled new avenues for possible extensions to develop more meaningful play and learning in homes and early years settings through the connections between the primary caregivers and the children within online spaces.

5. Conclusion

The presented work focused on how play and learning in early years provision (0-5 years) featured within online spaces during the two school lockdowns in 2020 and 2021 in Malta through the lens of ECEs. Three critical patterns developed and captured insights into the benefits, challenges, and opportunities that transpired by the sudden shift of play and learning to online spaces.

The first pattern tells about an uneven start for ECEs in Malta, with a lack of guidance, monitoring, support, and the necessary digital infrastructure compared to upper-level educators. The fixed and fragile policy infrastructure for the Maltese early years context, placed ECEs in uncharted waters – where they had to react unequipped for and defenseless to the rapid shift of play and learning experiences to online spaces when schools and settings were closed. This *challenge* echoes the Cinderella story of the workforce in early years sectors across

the globe, synonymous with terms such as ‘undervalued’ and ‘low pay, status, and profession’ (Eadie et al., 2021; McMullen et al., 2020).

The second pattern shows how some parents became more visible and engaged through the developed e-interactions during real-time (synchronous) sessions. Similar findings were reported through the parents’ perspectives in the broader COVID-19 study (Deguara et al., 2022; 2023). We view this as an *opportunity* for the early years sector, where online platforms may serve as new bridges to connect (Siemens, 2004) homes and settings and a tool to support family engagement in young children’s play and learning journeys. Such connectedness in the process of play and learning online is critical to further strengthening and promoting the ‘triangle of care’ between families, ECEs, and children in ECEC (Brooker, 2010; Egan, 2021) and *benefitting* from equal partnership.

The third pattern discloses how the offered online learning opportunities during the closure of settings were primarily prescriptive and teacher-led, thus impoverishing learning through play and exploration. This was a significant *challenge* for ECEs, given the need for more monitoring and support during the closure of settings. The captured traditional trend or emphasis on teaching numbers and letters in early years provision is indicative of an empiricist view of ‘school readiness’ where learning is measured with what children know (e.g., shapes, color, and the alphabet), and a re-surfacing of a legacy of colonial imposition where the narrow focus on numeracy and literacy remains valued as a high-status curricular domain in a postcolonial Maltese ECEC sector (Baldacchino, 2018; Bonello, 2022a). Conversely, some ECEs indicated their efforts in transforming a challenge into an opportunity as they explored the implementation of the emergent curriculum using project-based learning in an online space to promote learning and play led by the children’s wonderings, ideas, and interests. Similarly, in a local study, one educator tells about the learning benefits that overshadowed the challenges when integrating the emergent curriculum and the eTwinning concept in a Kindergarten classroom (Bonello et al., 2022b). The children’s increased involvement in online spaces was more evident during storytelling, science experiments, cooking, and other creative learning opportunities. Albeit the ECEs’ initial resistance and absence of the required knowledge and skills in the provision of play and learning experiences within online spaces, this study shows a gradual increase in the use of online learning spaces and some cases, a sense of empowerment as educators in Survey 2.

The generated key findings, like a kaleidoscope, portray three emerging patterns that influenced how play and learning featured in online spaces when Maltese early years settings were closed. The results unmasked several challenges, benefits, and opportunities concerning play and learning in online spaces. The located benefits and opportunities strengthen the theoretical foundations of this study – Siemens’ (2004) connectivism learning theory grounded in the value of technology and the created connectedness that broadens learning repertoires if used skillfully, meaningfully, and effectively between families, educators, and young children. In this light, the following are some implications for policy, future research, and practice:

- A reactive response – the authors argue that a shift from a programmatic to a systemic approach (Urban et al., 2012) in ECEC that embraces multisectoral collaboration and strategic action planning is urgently needed to avoid reactive responses in times of crisis. As proposed in the current national policy framework for the early years in Malta (MFED, 2021), a proactive systemic approach would also help leaders and educators in ECEC to make informed pedagogical decisions for optimal play and learning at all times (offline and online) – whatever the challenge that needs to be faced.
- Generate capacity building by strengthening the digital literacy skills of ECEs through continuous training, monitoring, and support that has the required policy infrastructure.

Such ongoing support would help ECEs gain more confidence to promote meaningful and effective play and learning experiences in their settings, in online spaces, and support families in this endeavor within home environments using the physical and online spaces available.

- Create ongoing opportunities for dialogue amongst stakeholders in ECEC to develop a shared understanding of play and early learning in online and offline spaces through a community of practice;
- Address digital divides in ECEC service provision and young children’s homes to avoid sudden detachments between primary caregivers and young children in the event of future global times of crises;
- Research and initial teacher training should focus more on eLearning modules and how these can support ECEs in learning more about the multiple pathways that can promote play and learning, child agency, and partnership with parents (also through e-interactions) within online learning arenas. Studies have recently highlighted the need to rethink pre-service and in-service teacher training to promote meaningful online and offline learning with the young (Hodges et al., 2021; Shorty & Jikpamu, 2021).

This article argues that an ECE’s ability to use online and offline pathways effectively is essential to increase the affordances for play and learning in ECEC provision and homes and sustain parents’ engagement in their children’s learning journeys. Thanks to the insights from ECEs in Malta during COVID-19, we learned how new patterns were developed during the closure of early years settings, reshaping the Maltese ECEC context and generating a kaleidoscope of benefits, challenges, and opportunities for play and learning within online spaces. Let us hope that the gifts discovered through this kaleidoscope do not get stuck in a ‘learning’ zone but make it to the post-COVID ‘action’ zone.

References

- Alban Conto, C., Akseer, S., Dreesen, T., Kamei, A., Mizunoya, S., & Rigole, A. (2020). *COVID-19: Effects of School Closures on Foundational Skills and Promising Practices for Monitoring and Mitigating Learning Loss* (Innocenti Working Paper 2020-13). UNICEF Office of Research – Innocenti. <https://doi.org/10.18356/25206796-2020-13>
- Allen, P. J., & Roberts, L. D. (2015). Exploring ethical issues associated with using online surveys in educational research. *Educational Research and Evaluation*, 21(2), 95-108. <https://doi.org/10.1080/13803611.2015.1024421>
- Araújo, L. A. de, Veloso, C. F., Souza, M. de C., Azevedo, J. M. C. de, & Tarro, G. (2021). The potential impact of the COVID-19 pandemic on child growth and development: A systematic review. *Jornal de Pediatria*, 97(4), 369–377. <https://doi.org/10.1016/j.jped.2020.08.008>
- Bennett, L., & Jowallah, R. (2022). Preparing Teachers for the Post-COVID Era: A Practical Framework for Teaching Within New Learning Spaces. In *Redefining Teacher Education and Teacher Preparation Programs in the Post-COVID-19 Era* (pp. 132–155). IGI Global. <https://doi.org/10.4018/978-1-7998-8298-5.ch008>
- Baldacchino, A. (2018). Early childhood education in small island states: A very British story (Ph.D. thesis). University of Sheffield.
- Bonello, C. (2022a). *Boys, Early Literacy and Children’s Rights in a Postcolonial Context: A Case Study from Malta*. Routledge. <https://doi.org/10.4324/9781003125525>

- Bonello, C. (2022b). Democracy or legacy? Boys' views on early literacy in three Maltese state schools. *Journal of Early Childhood Research*, 20(2), 144–158. <https://doi.org/10.1177/1476718X211051330>
- Bonello, C., Camilleri, R., Deguara, J., Milton, J. & Muscat, T. (2022a). *The COVID-19 and Education in Malta (Cov-EM) Study: Perspectives of Early Childhood Educators. Research Report 2*. Malta University Publishing.
- Bonello, C., Camilleri, R. A., & Attard, C. (2022b). The Emergent Curriculum 'Marries' eTwinning in the Early Years: A Rediscovery of Froebel's Kindergarten Through One Transformative Learning Experience in 21st Century Malta. *Curriculum and Teaching*, 37(2), 15-38. <https://doi.org/10.7459/ct/37.2.03>
- Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books
- Brooker, L. (2010). Constructing the triangle of care: Power and professionalism in practitioner/parent relationships. *British Journal of Educational Studies*, 58(2), 181–196. <https://doi.org/10.1080/00071001003752203>
- Busuttil, L., & Farrugia, R. (2020). Teachers' response to the sudden shift to online learning during COVID-19 pandemic: Implications for policy and practice. *Malta Review of Educational Research*, 14(2), 221-241. [https://www.um.edu.mt/library/oar/bitstream/123456789/66444/1/MRER14\(2\)A4.pdf](https://www.um.edu.mt/library/oar/bitstream/123456789/66444/1/MRER14(2)A4.pdf)
- Camilleri, R., Bonello, C., Deguara, J., Milton, J., & Muscat, T. (2022). *The COVID-19 and Education in Malta (Cov-EM) Study: Perspectives of Primary School Educators. Research Report 3*. Malta University Publishing.
- Center on the Developing Child. (2016). *Serve & return interaction shapes brain circuitry*. <https://developingchild.harvard.edu/resources/serve-return-interaction-shapes-brain-circuitry/>
- Dalli, C., White, J., Rockel, J., Duhn, I., Buchanan, E., Davidson, S., Ganly, S., Kus, L., & Wang, B. (2011). *Quality early childhood education for under-two-year-olds: what should it look like? A literature review*. Ministry of Education. https://www.educationcounts.govt.nz/_data/assets/pdf_file/0009/89532/965_QualityECE_Web-22032011.pdf
- Deguara, J., Bonello, C., Camilleri, R., Milton, J., & Muscat, T. (2022). *The COVID-19 and Education in Malta (Cov-EM) Study: Perspectives of Parents with Children in Early and Primary Education. Research Report 4*. Malta University Publishing.
- Deguara, J., Milton, J., Camilleri, R., Bonello, C., & Muscat, T. (2023). Uncovering and tackling educational inequalities caused by the pandemic: Parents' perspectives for equitable education in Malta. *Journal of Education and Practice*, 14(12), 13 – 25. DOI: 10.7176/JEP/14-12-02
- Eadie, P., Levickis, P., Murray, L., Page, J., Elek, C., & Church, A. (2021). Early Childhood Educators' Wellbeing During the COVID-19 Pandemic. *Early Childhood Education Journal*, 49(5), 903–913. <https://doi.org/10.1007/s10643-021-01203-3>
- Egan, S. M. (2021). Missing Early Education and Care During the Pandemic: The Socio-Emotional Impact of the COVID-19 Crisis on Young Children. *Early Childhood Education Journal*, 49(5), 925–934. <https://doi.org/10.1007/s10643-021-01193-2>
- European Commission. (2020a). *Digital Education Action Plan 2021-2027*. [European](https://ec.europa.eu/digital-storytelling/en/digital-education-action-plan-2021-2027)

- Commission. https://education.ec.europa.eu/sites/default/files/document-library-docs/deap-communication-sept2020_en.pdf
- European Commission. (2020b). *Education and Training Monitor 2020* [Official]. Education and Training Monitor. <https://op.europa.eu/webpub/eac/education-and-training-monitor-2020/countries/malta.html>
- European Commission. Directorate General for Education, Youth, Sport, and Culture. (2021). *Early childhood education and care and the Covid-19 pandemic: Understanding and managing the impact of the crisis on the sector*. (ISBN 978-92-76-36205-0). Publications Office of the European Union. <https://data.europa.eu/doi/10.2766/60724>
- Fisher, J. (2016). *Interacting or Interfering? Improving Interactions in the Early Years*. Open University Press.
- Ford, T. G., Kwon, K.-A., & Tsotsoros, J. D. (2021). Early childhood distance learning in the U.S. during the COVID pandemic: Challenges and opportunities. *Children and Youth Services Review*, 131, 106297. <https://doi.org/10.1016/j.childyouth.2021.106297>
- Foti, P. (2020). Research in distance learning in Greek Kindergarten schools during the pandemic of COVID-19: Possibilities, Dilemmas, Limitations, 5(1). <https://doi.org/10.5281/ZENODO.3839063>
- Gayatri, M. (2020). The implementation of early childhood education in the time of COVID-19 pandemic: A systematic review. *Humanities & Social Sciences Reviews*, 8(6), 46–54. <https://doi.org/10.18510/hssr.2020.866>
- Government of Malta. (2019). *Digital Malta. National Digital Strategy 2014-2020*. <https://digitalmalta.org.mt/en/Pages/Home.aspx>
- Hodges, C., Moore, S., & Lockee, B. (2021, November 25). *The Difference Between Emergency Remote Teaching and Online Learning*. Educause Review. <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>
- Kelly, A. L., & Berthelsen, D. C. (1995). Preschool teachers' experiences of stress. *Teaching and Teacher Education*, 11(4), 345–357. [https://doi.org/10.1016/0742-051X\(94\)00038-8](https://doi.org/10.1016/0742-051X(94)00038-8)
- Kerkhoff, S., Paul, C., & Spires, H. (2018). Digital literacy for the 21st century. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology*: Cu-ed (pp. 2235–2242). IGI Global. <https://doi.org/10.4018/978-1-5225-2255-3.ch194>
- Laevers, F., (Red.), (1994). *The Leuven Involvement Scale for Young Children. Manual and video. Experiential Education Series, No 1*. Leuven: Centre for Experiential Education. (pp. 44).
- Malaguzzi, L. (1993). For an education based on relationships. *Young Children*, 49(1), 9–12.
- McMullen, M. B., Lee, M. S. C., McCormick, K. I., & Choi, J. (2020). Early Childhood Professional Well-Being as a Predictor of the Risk of Turnover in Child Care: A Matter of Quality. *Journal of Research in Childhood Education*, 34(3), 331–345. <https://doi.org/10.1080/02568543.2019.1705446>
- Milton, J., Bonello, C., Camilleri, R., Deguara, J., & Muscat, T. (2022). *The COVID-19 and Education in Malta (Cov-EM) Study: Perspectives of University Students in Initial Teacher Education. Research Report 1*. Malta University Publishing.

- Ministry for Education and Employment [MEDE] (2012) *A National Curriculum Framework for All [NCF]*. Gzira, Malta: Salesian Press.
- Ministry for Education and Employment. (2016). *One Tablet Per Child Malta | Education portal for parents, teachers & pupils*. Malta Digital Education Portal. <https://www.digital.edu.mt/>
- Ministry for Education (MFED) (2021). *National Standards for Early Childhood Education and Care Services (0-3 years)*.
- Mphahlele, R., & Jikpamu, B. T. (2021). Re-imagining Pedagogy for Early Childhood Education Pre-service Curriculum in the Face of the COVID-19 Pandemic. *Journal of Interdisciplinary Studies in Education*, 10(1), 118-138.
- Muscat, T., Bonello, C., Camilleri, R., Deguara, J., & Milton, J. (2022). *The COVID-19 and Education in Malta (Cov-EM) Study: Perspectives of Leaders in Primary Schools, Kindergartens and Childcare Centres. Research Report 5*. Malta University Publishing.
- Nilsson, M., Ferholt, B., & Lecusay, R. (2018). 'The playing-exploring child': Reconceptualizing the relationship between play and learning in early childhood education. *Contemporary Issues in Early Childhood*, 19(3), 231-245. <https://doi.org/10.1177/1463949117710800>
- Nugroho, D., Lin, H.-C., Borisova, I., Nieto, A., & Ntekim, M. (2020). COVID-19: Trends, Promising Practices and Gaps in Remote Learning for Pre-Primary Education (No. 2020–36). UNICEF Office of Research-Innocenti.
- OECD. (2021a). *Starting Strong VI: Supporting Meaningful Interactions in Early Childhood Education and Care*. OECD. <https://doi.org/10.1787/f47a06ae-en>
- OECD. (2021b). Trends shaping early childhood education and care. In OECD, *Starting Strong VI*. OECD. <https://doi.org/10.1787/aadb7c1e-en>
- OECD. (2021c). *Using Digital Technologies for Early Education during COVID-19: OECD Report for the G20 2020 Education Working Group*. <https://doi.org/10.1787/fe8d68ad-en>
- Panesi, S., Fante, C., & Ferlino, L. (2021). Online learning in kindergarten during Covid-19: Teachers' experience and perception in Italy. Qwerty. *Open and Interdisciplinary Journal of Technology, Culture, and Education*, 16(2). <https://doi.org/10.30557/QW000044>
- Sánchez-Cruzado, C., Santiago Campi3n, R., & S3nchez-Compa3a, M. T. (2021). Teacher digital literacy: The indisputable challenge after COVID-19. *Sustainability*, 13(4), 1858. <https://doi.org/10.3390/su13041858>
- Seo, S., & Yuh, J. (2021). Mindfulness and Resilience as Mediators in the Relationship Between Job-Related Stress and Teacher-Child Interaction Among Early Childhood Educators. *Early Childhood Education Journal*. <https://doi.org/10.1007/s10643-021-01250-w>
- Shorty, M. R. S., & Jikpamu, B. T. (2021). Re-imagining Pedagogy for Early Childhood Education Pre-service Curriculum in the Face of the COVID-19 Pandemic. *Journal of Interdisciplinary Studies in Education*, 10(1), 118–138.
- Siemens, G. (2004). Connectivism: Learning theory for the digital age. *International Journal for Instructional Technology and Distance Learning*, 2, 1–6.
- Spiteri, J. (2020). Assessing the usefulness of outdoor learning in the early years during the COVID-19 pandemic in Malta. *Malta Review of Educational Research*, 14(2), 141–161.

- Squires, K., van Rhijn, T., Harwood, D., & Coghill, M. (2021). Outdoor Learning and Experiences as a Way Forward During the COVID-19 Pandemic and Beyond. *Association of Early Childhood Educators of Ontario (AECEO)*, 5(2), 21–33.
- Steed, E. A., & Leech, N. (2021). Shifting to Remote Learning During COVID-19: Differences for Early Childhood and Early Childhood Special Education Teachers. *Early Childhood Education Journal*, 49(5), 789–798. <https://doi.org/10.1007/s10643-021-01218-w>
- The Alliance for Child Protection in Humanitarian Action. (2022). ‘What will happen to our children?’: The Impact of COVID-19 School Closures on Child Protection and Education Inequalities in Three Humanitarian Contexts. [https://reliefweb.int/report/colombia/what-will-happen-our-children-impact-covid-19-school-closures-child-protection-and-education-inequalities-three humanitarian-contexts](https://reliefweb.int/report/colombia/what-will-happen-our-children-impact-covid-19-school-closures-child-protection-and-education-inequalities-three-humanitarian-contexts)
- Trevarthen, C. (2009). *Why attachment matters in sharing meaning*. Glasgow: IRIS. <http://www.iriss.org.uk/resources/why-attachment-matters-sharing-meaning-colwyn-trevarthen>.
- Tsai, K. C. (2012). Play, Imagination, and Creativity: A Brief Literature Review. *Journal of Education and Learning*, 1(2), 15–20. <https://doi.org/10.5539/jel.v1n2p15>
- UNESCO n.d. Play and Early Learning during COVID-19 https://en.unesco.org/sites/default/files/unesco-covid-19_ed-webinar-14-right_to_play.pdf
- UNESCO. (2020, March 5). *Distance learning solutions*. UNESCO’s COVID-19 Education Response. <https://en.unesco.org/covid19/educationresponse/solutions>
- United Nations Children’s Fund, World Bank, and United Nations Educational, Scientific and Cultural Organization. (2020). *Global-guidance-on-reopening-early-childhood-education-settings.pdf*. UNICEF. <https://www.unicef.org/media/82946/file/Global-guidance-on-reopening-early-childhood-education-settings.pdf>
- Urban, M., Vandenbroeck, M., Van Laere, K., Lazzari, A., & Peeters, J. (2012). Towards competent systems in early childhood education and care. Implications for policy and practice. *European Journal of Education*, 47(4), 508-526. <https://doi.org/10.1111/ejed.12010>
- Vassallo, J., Meagher, G. L. D., Zammit, N., Grech, L., Refalo, E., & German, E. J. (2021). Students and parents’ perspectives on emergency e-learning in kindergarten and compulsory education. *Malta Journal of Education*, 2(1), 167–196.
- Vygotsky, L. (1978). *Mind in society: the development of higher psychological processes*. Harvard University Press.
- Wright, K. B. (2005). Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services, *Journal of Computer-Mediated Communication*, 10, 3, 1. JCMC1034, <https://doi.org/10.1111/j.1083-6101.2005.tb00259.x>