Enabling Community Engagement to Support Literacy, Digital Literacy, and Numeracy Development for All Children

A Review of the Literature

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Summary

This literature review focuses on engaging communities in children and young people's learning, in particular establishing engagement between early childhood education and care (ECEC) settings, schools, teachers, and library services to promote literacy/digital literacy and numeracy (LDLN) development in the community. The literature evidences the adage that 'it takes a village to rear a child'. The concept of community engagement is complex and recognises that such engagement is a reciprocal process underpinned by "the aspirations, concerns, needs and values of citizens and communities … in policy development, planning, decision-making, service delivery and assessment; and by which governments … involve … communities and other stakeholders in these processes (United Nations, 2005, p.1). We therefore recognise that community engagement is a two-way process.

- The literature is consistent in recognising learning as a collective endeavour, with spaces, places and people in the community playing central roles in supporting early literacy and numeracy (Shrestha Krolak, 2015; Kelly, 2006). However, community engagement and initiatives have not maintained a policy profile or priority in Ireland. Equally, the role of community (initiatives and agencies) in supporting literacy and numeracy does not emerge strongly across the literature. Nevertheless, there are initiatives with great potential. See 'One book, one community' scheme (O'Brien Press, 2013); shared reading experience on a picture book that encourages math talk (van den Heuvel-Panhuizen & Elia, 2012); digital and traditional games and community picnics (Dockett & Perry, 2014; van Oers, 2010) and the Fingal County Libraries Early Years Literacy Strategy (French et al., 2013) among others.

- The benefits of successful transitions from early childhood settings to formal schooling include improved school attendance and retention; increased participation and family involvement; a more positive attitude towards school as well as a stronger sense of community (Dockett & Perry, 2013, 2014; Hirst, 2011; O'Kane, 2016). Wildenger and McIntyre (2011) conducted research on family concerns and involvement during kindergarten transitions. See Nic Mhuirí et al. (2022) for further discussion on family engagement. They found that lower income families were significantly less likely to engage in transition practices.

- Community engagement makes a difference. The literature suggests that communities support the development of literacy and numeracy skills but conversely better competencies and knowledge also equip children and adults to work for change in their communities (Baker et al., 2004). Viewed in this way, the collaborative working of schools, parents and communities acts as a social leveller and a mechanism for inclusion (Anderson et al., 2017; Jeynes, 2018; Rankin & Brock, 2012), breaking down barriers and social divides. Effective mechanisms include Action Teams for Partnerships committees (Epstein, 2018), co-leadership frameworks (Trimmer et al., 2021) or collaborative family literacy partnerships (NALA, 2020).

- Effective collaboration does not happen automatically and requires strong leadership and structures to enable better learning outcomes for children. Educational leaders play a pivotal role in developing family engagement by setting policy and by creating supportive environments (Smith et al., 2021), while structured initiatives (Epstein, 2018) create an enabling framework across the community (Trimmer et al., 2021).

- Collaborative working between home, school and community based on principles of building strengths, respect and empowerment (Blythe et al., 2013; Trimmer et al., 2021) creates overlapping spheres of influence that make a difference (Epstein, 2018, p.64) and auger well for children's' learning.

Recommendations

*All recommendations address the pillar of **Enabling parents and communities**. Other relevant pillars are included in brackets.*

     Community engagement should be firmly embedded in policy promoting successful literacy, digital literacy and numeracy learning and sufficient funding should be made available to support relevant initiatives. After-school programmes, book giveaway programmes, STEM initiatives, the National Adult Literacy Association, libraries and museums exist as key resources. Cultivating partnerships between relevant agencies, institutions, schools, settings and local communities would allow for policy to be enacted at a local level in a way that directly impacts on children's' outcomes. Equally, there is potential for Citizen Science projects to play a role in developing children's literacy, digital literacy and mathematics, as well as other cross-curricular problem-solving skills. While community-engagement programmes should be responsive to local needs, they should also have clear goals, and be based on a well-researched theory of change or logic model which explicitly outlines the contribution from the relevant community members and expected outcomes (Gamse et al., 2017). ***[Pillar 3: School and ECEC leadership]***

     Settings must endeavour to engage all families in transition processes from home to early childhood settings; from there to primary school settings; from primary to post-primary and beyond to support children and young people's holistic learning as well as their sense of identity and belonging (Wildenger & McIntyre, 2011) and academic success (Ashley et al., 2017; McCauley, 2010). See Nic Mhuirí et al. (2022) for further discussion on family engagement. Research on transitions tends to focus on children's readiness, rather than on 'ready' schools and families (Dockett & Perry, 2013). Communities must also be 'ready' to support children's and young people's transitions across a range of contexts. ***[Pillar 3: School and ECEC leadership]***

     Principles to guide actions and decisions within community-based projects should include: strengths-based approaches, empowerment of communities, role modelling, communication, measurement and feedback (Blythe et al., 2013). The characteristics of effective programmes/partnerships include: community engagement as a two-way process which involves knowledge of the community served (cultural competency), leadership, authentic community engagement in decision-making, curriculum implementation and a shared vision and goals (Trimmer et al., 2021). Effective mechanisms include Action Teams for Partnerships committees (Epstein, 2018), co-leadership frameworks (Trimmer et al., 2021) or collaborative family literacy partnerships (NALA, 2020). In this partnership approach early childhood settings, schools, community leaders, education systems, universities and policy makers should work collaboratively to enhance children's outcomes (Trimmer et al., 2021). ***[Pillar 3: School and ECEC leadership]***

Introduction

This literature review focuses on engaging communities in children and young people's learning, in particular establishing engagement between early childhood education and care (ECEC) settings, schools, teachers, and library services to promote literacy/digital literacy and numeracy (LDLN) development in the community. Early childhood is crucial for optimal brain development and the emergence of socio-emotional, linguistic and cognitive skills (Sheridan et al., 2018). Learning occurs in the context of relationships and the shared influences in homes, settings and communities that children inhabit. Building partnerships across these settings is critically important. Therefore, *Síolta* (Centre for Early Childhood Development & Education [CECDE], 2006), the national quality framework for ECEC settings, contains a standard on community involvement which requires "the establishment of networks and connections evidenced by policies, procedures and actions which extend and support all adult's and children's engagement with the wider community" (CECDE, 16.1). Furthermore, *Aistear,* our national curriculum framework for ECEC, frequently highlights the importance of children's families and communities (National Council for Curriculum and Assessment [NCCA], 2009). In policy documents related to LDLN community engagement is understood as schools connecting with community initiatives that may be located in libraries, health services, family resource centres, clubs, organisations and adult and family literacy services (Department of Education and Skills [DES], 2011; DES, 2017). However, the concept of community engagement is complex and recognises that such engagement is a reciprocal process underpinned by "the aspirations, concerns, needs and values of citizens and communities … in policy development, planning, decision-making, service delivery and assessment; and by which governments … involve … communities and other stakeholders in these processes (United Nations, 2005, p.1). We therefore recognise that community engagement is a two-way process.

The role of community in supporting children's literacies is threaded throughout the *National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020* (DES, 2011). The strategy highlighted that the Government would 'raise public awareness of the role that the family, community, the education system, libraries and other bodies can play together in promoting successful literacy and numeracy learning' (p.14). Community was signalled as a partner in the new strategy, with the DES recognising that whilst a variety of community and family initiatives exist 'to support better engagement with schools and better learning outcomes for young people' the initiatives could be better funded

and coordinated. However, in the Interim Review of the Strategy (DES, 2017), 'inter-agency and inter-departmental collaboration' appears to stand as a proxy for community engagement and 'community' does not appear as part of the review or as part of the reconfigured strategic priorities (p. 27).

It would appear that community engagement and initiatives have not maintained a policy profile or priority. Equally, the role of community (initiatives and agencies) in supporting literacy and numeracy does not emerge strongly across the literature. While many successful, small-scale, local community education initiatives exist (e.g., McCarthy, 2017), these are not examined in the meta-analytic literature and many of the systematic and meta-analyses identified which consider links between learning and community relate to health initiatives. Four systematic reviews were found (de Bondt et al., 2020; Gutierrez et al., 2021; Lowe et al., 2021 & Trimmer et al, 2021), two of which focussed on literacy (de Bondt et al., 2020; Lowe et al., 2021). Three further reviews focused on Science Technology Engineering and Mathematics Education (STEM) initiatives (Ashley et al., 2017; Gamse, 2017; Young et al., 2017). See the Appendix for the Research strategy, Prisma Chart and Tabulation of Results. These systematic reviews and meta analyses were augmented with other identified key studies, reports and reviews. This literature review responds to the following research questions:

Research questions

1. How do community initiatives and programmes support all children's engagement in literacy/digital literacy/ numeracy activities?
2. How can communities contribute to children's transition across diverse contexts, particularly in relation to literacy, numeracy and digital literacy?
3. What are the characteristics of effective partnerships or programmes which support literacy/numeracy digital literacy across settings and in out of school contexts?

The themes that emerged from the literature are addressed in the following order: community programmes/initiatives that enhance children's engagement in LDLN; public resources/services in the community, facilitating setting/community engagement through transitions; and finally the principles and characteristics of effective partnerships and

programmes. In this review the term 'teacher' applies to all those who educate in the range of 'settings' from early childhood to post-primary. See Appendix for research strategy and tabulation of results.

Community Programmes/Initiatives that Enhance Children's Engagement in LDLN

Children's social and academic learning can be shaped by three overlapping spheres of influence- families, educational settings and communities (Epstein, 1987; 2011; 2018). See Nic Mhuirí et al. (2022) for further discussion on family engagement. The establishment of partnerships amongst the spheres of influence recognizes the shared importance and potential of student learning at home, at school, and in the community. Many positive benefits have emerged from community partnerships, including improved access to services for families and increased family involvement in children's education (Zetlin, Ramos, & Chee, 2001). It is important to recognise that literacy is not merely an individual endeavour, but is a community, familial and societal enterprise (Shrestha & Krolak, 2015). Mathematics can be thought of in a similar way. Hersh's (1997) description of mathematics as "a human activity, a social phenomenon, part of human culture, historically evolved, and intelligible only in a social context" (p. xi) is referenced in Dunphy et al. (2014) and recognised in the draft specification of the primary curriculum (NCCA, 2017). Opportunities to experience LDNL activities beyond the school environment will enrich and widen children's perceptions of the subjects in addition to contributing to LDLN development.

In terms of specific literacy, numeracy and digital literacy initiatives within the community, there tends to be more of a focus on literacy activities. For instance, the 'One book, one community' scheme, where all members of the community are encouraged to read and discuss the same book (O'Brien Press, 2013). These types of shared reading experiences between children and members of the community can foster positive relationships, promote language and literacy skills and contribute to children's wellbeing. While it was more difficult to find specific community-based mathematics initiatives, a similar shared reading experience on a picture book that encourages math talk and mathematical discourse (van den Heuvel-Panhuizen & Elia, 2012) would be an effective community based activity. Any such initiative should build on the growing research-base for the use of narrative books within mathematics education (e.g., Prendergast et al., 2019; Trakulphadetkrai et al., 2019). While not reported as a meta-analysis, other examples of community initiatives include digital and traditional games, songs, play-based activities, outdoor activities and community picnics

(Dockett & Perry, 2014; van Oers, 2010). Similarly, Maths Week, coordinated by the Calmast STEM outreach centre in Waterford Institute of Technology, is a very successful example of an initiative which aims to promote positive attitudes to and greater understanding of mathematics through engagement. This section focuses on after-school programmes; the book giveaway programme, STEM initiatives and the National Adult Literacy Association.

Afterschool Programmes

Afterschool programmes can affect students' academic achievement and social skills development (Durlak et al., 2010; Grogan et al., 2014; O'Donnell & Kirkner, 2014; Shernoff, 2010). Afterschool mentoring programs, which can be based in a school or community setting, can implement interventions using a range of activities (Grossman & Bulle, 2006). Effective activities include sports activities, tutoring in academic areas, apprenticeships, health promotion, ethnic identity education activities and authentic activities based on shared interests of both the mentee and mentor (McDaniel et al., 2015). Successful mentoring programmes feature support and training for mentors, targeted recruitment of mentees for needs-based interventions, group mentoring, matching mentors with mentees by race and gender, mentees viewing the afterschool club as a "home" and customized programming which utilizes local resources (McDaniel et al., 2015 p.39). There is an increasing belief that afterschool programmes should be evaluated (Huang et al., 2010) so as to allow for growth and improvement of programmes (Huang & Dietel, 2011). This allows facilitators to measure the programme's success in terms of student achievement and enjoyment (Huang & Dietel, 2011). Recommended evaluations include internal approaches by the organizing committee, such as assessment data and surveys, or evaluations analysed by external bodies to limit bias (McDaniel et al., 2015). While the above research draws largely on US-based studies where the context for afterschool care and education differs from the Irish context, it is clear that high-quality afterschool initiatives can have positive impacts for students. One literacy-based after-school programme which has been evaluated in Ireland is the Doodle Den after-school initiative for five to six year olds with positive results (Biggart et al., 2012). A key feature of the project was community involvement. There was significant focus at the commencement of the project on community 'buy-in' (Biggart et al., 2012, p.27).

Book Giveaway Programmes

Book giveaway programmes can provide free books to families with young children from infancy. These programmes promote children's home literacy environment practices, including "frequency of shared book reading, parent interest in shared book reading, number of children's books available at home, and library visits" (de Bondt et al., 2020, p.391), leading to increased interest in reading and an improvement in literacy-related skills. In the meta-analysis of international book giveaway programmes, three were highlighted- Reach Out and Read, Bookstart and Imagination Library (de Bondt et al., 2020). These programmes increase the number of books in a child's home literacy environment, but also the variety of texts the child is exposed to. Lou et al. (2020) found that in homes from a low socioeconomic background, the children have a variety of books surrounding basic concepts such as numbers, shapes, the alphabet etc., but far fewer narrative texts. The easy access to age-appropriate texts may promote routine reading by encouraging parents to engage in shared reading daily despite busy family lives (Thaler & Sunstein, 2008). Notably, with Reach Out and Read, during six-month developmental checks, a pediatrician or nurse practitioner provides the book to parents and explains the importance of book reading to child cognitive development. de Bondt et al. (2020) speculate that the provision of information in a health care context further influences parents to start book reading from early infancy. Reach out and Read also provide volunteers to provide shared reading training for parents. Depending on the country, Bookstart may also include personal contact when distributing texts, e.g. from early childhood educators or community health visitors. Imagination Library provides a book monthly to participating families, however, there is no personal contact as the book is mailed with information brochures. de Bondt et al. (2020) found that overall, characteristics of effective book giveaway programmes include personal contact with parents, information sessions and shared reading demonstrations. Dowdall et al., (2020) found that the Reach out and Read programme, where books are given by health professionals during periodic health checks, is significantly more effective than books provided outside of a health-care context. de Bondt et al. (2020) hypothesize that the influence of the health care practitioner in these contexts is the most particularly influential to parents to encourage participation of shared reading in the home.

Science Technology Engineering and Maths Education (STEM) Initiatives

The synthesis of Young et al. (2017) provides evidence that out-of-school STEM learning opportunities can have a positive effect on children's interest in STEM with larger

effect sizes identified for programmes with a dual academic and social focus. For the most part, studies analysed involved summer enrichment programmes or after school programmes administered by both schools and community-based organisations, such as non-profit agencies. The time-frame (after-school vs. summer programme) was not found to be a significant moderator of programme effectiveness. Class or grade level was found to be a significant moderator of effect sizes, with statistically significant effect sizes for older students (grades 6-12) but not for younger students (K-5).

Community partnerships within STEM education often take the form of STEM outreach, where STEM experts- people with STEM qualifications, work with students or teachers on educational activities in schools, universities, museums, community centres or other STEM-related workplaces (Gamse, Martinez & Bozzi, 2017). Such outreach is considered to contribute to maintaining a 'pipeline' of STEM graduates for industry by developing STEM content-knowledge and positive dispositions toward STEM and by exposing children to role-models in STEM careers (Gamse et al., 2017; Young, Ortiz, & Young, 2017). In their synthesis of existing literature, Gamse et al. (2017) identify key goals of programmes as concerned with changing students' attitudes, beliefs, or plans; increasing STEM participation amongst particular groups of students (e.g. girls); and increasing STEM content knowledge, skills, or academic achievement. Their analysis of 29 published studies indicates that the most common role for the STEM expert was in leading and supporting engagement with hands-on, problem-solving projects, though some outreach activities also involved explicit attention to the STEM expert as role-model and mentor. While many of the individual studies report positive outcomes for students, the research designs employed do not allow causal claims to be made about the impact of STEM experts' involvement in student outcomes (Gamse et al., 2017).

Other forms of collaboration with STEM communities are possible. In particular, the Citizen Science movement has developed momentum, and different interpretations, over the last years. The term originated to describe projects led by universities or other research institutions which guided decentralized data collection by volunteers (Cooper et al., 2021). Cooper et al. note that there is a need to differentiate between this narrow interpretation of the term and the broader interpretation in which it sometimes used to refer to "highly varied projects across many disciplines with public-inclusive approaches—regardless of the leadership, size, or design—and balancing multiple goals: science, engagement, education,

policy, and/or empowerment" (p. 1387). These authors note that some projects happening under the 'Citizen Science' banner are more aligned with 'community science' as they incorporate participatory methods with the aim of bringing about social change. They suggest that 'community science' describes projects focused on local priorities and local perspectives, and crucially maintains the locus of power in the community (p.1387). There is potential for Citizen Science projects to play a role in developing children's literacy, digital literacy and mathematics, as well as other cross-curricular problem-solving skills. For example, consider how education communities could develop mathematical skills including spatial understanding and mapping and measurement ideas as part of the Crowd4Access Citizen Science project. This project is a partnership between citizens and professional technology researchers who come together to learn how accessible are the footpaths of Irish cities (Crowd4Access, n.d.). Other existing local projects include the Greenwave project where children across Ireland record the signs of Spring (Science Foundation Ireland, n.d).

STEM outreach, like other community engagement programmes, should be based on a well-researched theory of change or logic model which explicitly outlines the contribution from the relevant community members. Articulating the logic models underpinning community engagement programmes or initiatives is an important step toward testing and refining ideas so that later studies can assess the efficacy of specific practices (Gamse et al., 2017, p. 41).

National Adult Literacy Agency (NALA)

The Further Education and Training Strategy 2014-2019 (Solas, 2014) called for literacy provision in relation to personal, family, social and community contexts. A study undertaken by NALA (2020) aimed to extrapolate best practice from the Education and Training Board (ETB) family literacy activity. Family literacy describes the uses of literacy and numeracy within families and communities, especially activities that involve two or more generations (NALA, 2004). Communities can support the development of literacy skills but conversely better literacy skills also equip children and adults to work for change in communities (Baker et al., 2004). NALA (2020) acknowledges the value and role of community in supporting family literacy and proposes a collaborative partnership approach as the best way to engage 'hard-to- reach' learners through aligning with communities of practice where prospective family learners were already engaged (p.12). Through this research NALA (2020) has gathered comprehensive evidence that further education and

training (FET) family literacy activities have a significant and positive impact on adult learners and their families. While NALA (2020) recognises the role of parents and families in supporting children's literacy, the importance of collaboration, partnership and community is also evidenced. NALA's recommendations are included below in the characteristics of effective partnerships. Other public services and resources within the community are featured next.

Public Services/Resources Within the Community

The public library supports people and communities through its civic presence. It provides information, supports learning and culture and is a focal point for a growing number of public services (Department of Rural and Community Development, 2018). It is a trusted space that is accessible, facilitates education and is a safe space for children and adults. Libraries provide cultural and education outreach programmes that connect communities.

Opportunities to develop language and literacy are important for children from birth and the library has a key partnership role in developing these skills in providing access to resources and services by children and families (Rankin & Brock, 2012). Communities give purposes to libraries and library provision reaches out to the local community, beyond the library walls (p.5). In this way, libraries are understood as learning centres, cultural centres and information centres. Thus, they can be considered as social levellers, breaking down barriers, bridging social divides and creating safe and inclusive spaces for learning (Rankin & Brock, 2012). Conceptualising literacy as a social endeavour positions libraries as literate environments. In recent times libraries have shifted from being repositories of books and information to being proactive service providers that support literacy through community engagement (Shrestha & Krolak, 2015). For example, the Fingal County Libraries developed an Early Years Literacy Strategy (French et al., 2013) to include establishing and maintaining a Baby Book Club, using the mobile library service to go to early childhood settings and engage in community storytelling initiatives; creating leaflets, a video and tip sheets for 'sharing books with babies' among other initiatives. The strategy itself was developed with a community and inter-agency consultation process. Libraries have also been proactive about promoting involvement with numeracy initiatives with, for example, South Dublin libraries taking an active role in Maths Week by hosting a number of events and activities, including a family Maths Day where board games, books and digital mathematics games were made available (MathsEyes, n.d).

There is a dearth of relevant meta-analyses or systematic literature reviews as is evidenced through our current search. However, that is not to discount the many policies, library initiatives, in Ireland and beyond that support children's literacy and digital literacy through community engagement. The *Right to Read Campaign* (Department of the Environment, Community and Local Government, 2014) acknowledged literacy as essential to enable children and adults realise their potential. This initiative afforded libraries a central role in supporting literacy in the community. The *Right to Read Campaign* has seen local authorities inscribe literacy goals as part of their action plans and libraries across the country have reached out successfully delivering Spring into Story time sessions; Summer Stars Reading Programme; Wainfest Arts and Book Festival; bookworm babies; Creating Lifelong Readers with Lifestart and have also seen libraries links with schools on programmes such as Battle of the Books and Bite Size Books. The *Right to Read Campaign* is significant in that it placed the responsibility to support community literacy across all aspects of Local Authorities work and drew extensively on libraries as a means of underpinning implementation. Similarly, 'Our Public Libraries 2022' (Department of Rural and Community Development, 2018) aspire to develop ICT infrastructure in libraries and to actively promote lifelong learning. These strands will draw engagement from children and adults across communities and will see libraries connecting with schools and other locally based services to support learning.

Museums can be defined as informal learning environments, accessible by the public, based on the subjects of science, history, archaeology and arts, and involving various objects and exhibits (live and/or simulated) and programmes (Andre, Durksen & Volman, 2017, p.48). Museums help develop an appreciation of place and culture, community and heritage and provide opportunities for learning for all age groups (Kelly, 2006). Museums have the potential to support cross-curricular learning experiences. For example, settings such as the Science Gallery, may provide opportunities to develop LDLN through engagement with Science and Art. However, despite being agents of social change, community-oriented and led by people and stories (European Commission, 2014, p.5), museums are facing challenges in how to develop programmes and services that inclusively meet the needs of communities (Chatterjee & Noble, 2013).

New digital technologies are considered crucial in drawing in children, new communities and younger generations as they provide opportunities for open-ended learning outcomes (Cerquetti, 2016). In reviewing the literature, Cerquetti (2016) suggests that a challenge for museums is to be places of learning rather than of education, where audience engagement is supported through ICT and through narrative environments. There is potential for achieving greater participation, promoting cultural inclusion and specifically in supporting literacy and numeracy through creative use of digital technologies to engage children and young people in interactive learning experiences. Andre et al. (2017) found that museums provided activities and strategies in mediating informal learning. They also found that the importance of interaction in children's museum learning was relevant across all museum types.

It appears from the literature that Museums have a significant role in community building but are only beginning to appreciate the possibilities for immersive learning experiences (Llamazares De Prado & Arias Gago, 2020) and the use of interactive technology will be key to supporting a range of literacies (Cerquetti, 2016). Some of current challenges for museums as outlined by Ayala et al. (2019) lie in their capacity in building community liaison and to communicate or market themselves to their constituent social groups. In fact, a key challenge for community institutions such as libraries and museums lies in how to move beyond developing programmes and initiatives *for* communities toward using a partnership approach to develop initiatives *with* relevant partners. The next section of the review details the role of community contributions across all types of transitions with reference to literacy, numeracy and digital literacy practices.

Facilitating Community Engagement through Transitions

The benefits of successful transitions in education have long been recognised and reported. These include, improved school attendance and retention; increased participation and family involvement; a more positive attitude towards school as well as a stronger sense of community (Dockett & Perry, 2013, 2014; Hirst, 2011; O'Kane, 2016). Dockett and Perry (2014) maintain that in terms of transitions 'communities are entitled to be regarded as essential contributors to children's education, and to have a major role and place within education institutions' (p. 94). Community contributions should occur across a range of diverse contexts, including, transitions in the early years; from home to ECEC settings; from there to primary school; from primary to post-primary and beyond.

Transitions in the early years, especially ECEC to primary school, is widely acknowledged as a crucial time in the life of the child, the family and the community. Over the past decade there has been a myriad of national and international research. From an Irish perspective, O'Kane (2016) maintains children feel they belong in a setting 'where links with family and community are acknowledged and nurtured' (O'Kane, 2016, p.3). This inclusion of the community echoes international findings as Correia and Marques-Pinto (2016) discovered that in terms of family-school relations, the whole school community needs to be involved for it to be a success. They focus on community involvement on a range of levels, sometimes it can be a more passive contribution (such as organising meetings in a community centre) (Correia & Marques-Pinto, 2016), or often it is a more active contribution. Wildenger and McIntyre (2011) conducted research on family concerns and involvement during kindergarten transitions. They found that lower income families were significantly less likely to engage in transition practices. It is critical for *all* families to engage in transition practices to support children's holistic learning as well as their sense of identity and belonging. This can be achieved, in part, through a number of community based initiatives.

The majority of research on transitions centres on transitions in early childhood, with a particular focus on the transition to primary school. While there is little evidence of meta-analysis reporting community based initiatives to support children's transition from primary to post-primary school, it remains a critical period in the life of the child and the family. McCauley (2010) conducted research to elicit teachers' perspectives on the transition from primary to post-primary school from an Irish perspective. The results were not specific to literacy, numeracy or digital literacy, however, he contended that over half the respondents believed the transfer had a direct effect on academic achievement. Of those that reported this finding, 73% referred to a link between academic performance and stress or anxiety caused by adjustment to a range of factors, including the design and delivery of the curriculum (McCauley, 2010). It can therefore be deduced that community initiatives are still required to support young people's transition to post-primary school. These initiatives may help to reduce stress and anxiety and support young people's sense of connectedness, belonging and wellbeing.

Ashley et al. (2017) synthesize the literature on Science, Technology, Engineering and Mathematics (STEM) Summer Bridge programmes. These programmes are designed to help students transition to the university learning environment and often target underrepresented minority students. The goals of these programmes were found to address academic success (foundational knowledge in STEM, student retention, research participation), psychosocial (interest in STEM majors, sense of belonging, efficacy and preparedness, and networking), and university department-level goals (recruitment of students to STEM discipline areas and increasing diversity in the student population). While there is some evidence that these programmes appear to be successful in meeting their goals, more high-quality research is needed to uncover the nature of effective 'bridge' programmes and to determine the extent of their influence on student outcomes.

Research on transitions tends to focus on children's readiness, rather than on 'ready' schools and families (Dockett and Perry, 2013). We argue that communities must also be 'ready' to support children's and young people's transitions across a range of contexts. This can be achieved through creating initiatives and programmes which involve children, young people and their families, in partnership with schools. The principles and characteristics of such programmes feature in the next and final section.

Principles and Characteristics of Effective Engagement in Programmes and Partnerships

In the context of an action research project to develop environmentally sustainable practices in schools, Blythe et al. (2013) established five principles of community engagement: strengths-based (eliminating deficit perspectives, with high expectations and building on the capacities within communities), empowerment (achieving change without ideas being imposed on how change should happen, co-learning), role modelling (demonstrating desired behaviour, without judgement - walking the walk), communication (listening, collaborative, open, respect-based, tailored to those in the community, e.g. employing technology that young people use), and measurement and feedback (gathering data and disseminating key messages throughout the project).

Systematic reviews, grounded in the failure of successive government initiatives in Australia to meet targets on educational equity are published. Lowe et al. (2021, p.78) draw from the aspirations of Indigenous communities "to collaborate with schools" (for their children to access language and cultural programmes). Guetteriez et al. (2021) report on the indicators for success across a number of literacy programmes (e.g., Abracadabra, Bilingual, Direct Instruction, Making Up for Lost Time in Literacy among many others). Trimmer et al., (2021) focused on the theme of leadership which highlights the importance of extensive engagement and collaboration between leaders in the school and the community "to influence joint decision-making… required to attain lasting change" (p.20). The following characteristics of effective programmes were identified: "for schools to establish authentic and accessible local place-based programmes that affirm and strengthen students' cultural identities and their academic efficacy" (Lowe et al., p.89); two-way community engagement where families are listened to and their needs and requests honoured; adequate funding to enable programmes/initiative to establish and thrive and have high quality resources; regular attendance at programmes by learners; explicit teaching on early literacy skills; special delivery of programme away from mainstream; explicit scaffolding for learners; professional learning and development to be provided to the Principals and school community, who themselves are engaged, with explicit directions to teachers in in relation to the theoretical underpinning of programmes and ongoing support from research academics/experts; engaging and reliable use of technology, and ongoing testing of learner literacy to ensure the provision of meaningful texts (Guetteriez et al., 2021).

Many of the above themes were echoed in Correia & Marques-Pinto (2016), Epstein (2018), Hickey et al. (2018) and Trimmer et al. (2021) when considering the characteristics of effective partnerships at school, organisation and national levels. The themes include the provision of: identification of local needs; a shared vision and mission; information-sharing, networking and communication amongst stakeholders; stakeholder buy-in (Biggart et al., 2012); confidence and commitment across the stakeholder body; adequate funding to establish, develop and maintain community engagement; leadership, with teamwork and collegial support, to enable interagency working, "written plans, implementation, evaluation" (Epstein, 2018, p.39). Trimmer et al. (2021) cites international educational literature that advocates for: governance models that recognise the diversity of schools and communities, that policies and procedures cannot be therefore be universally applied, and leadership should

involve approaches which incorporate increased participation of community in governance and decision-making for a range of communities at risk of educational inequity.

Epstein (2018) proposes schools integrate community resources and services and facilitate partnerships through the use of dedicated Action Team for Partnerships (ATP) committees. Equally Trimmer et al. (2021) recommend establishing a co-leadership framework between communities and schools. Such a committee/framework enhances programme engagement, evaluates activities and ensures student's long term positive educational outcomes. In tandem with this framework, schools, community leaders, education systems and universities work collaboratively with policy makers (Trimmer et al., 2021). Echoing these ideas in Ireland, NALA (2020) suggests that a more systematic approach to family literacy is required, one where core collaborative family literacy partnerships should be built. These would allow community agencies, e.g., Further Education and Training, public libraries and Children and Young People's Services Committees and Delivering Equality of opportunity in Schools (in particular the successful work of the Home School Community Liaison Scheme and its drive to build collaborative partnerships with parents to support children's learning) to develop provision that harnesses all their skills, resources and contacts with parents who will most benefit from family literacy support. NALA (2020) recommends 'through building robust local collaborative partnerships, each ETB should develop a family-literacy strategy that answers local needs and maximises funding provided for the work" (p.15). However, to flourish family literacy needs dedicated people (p.102) and collaborations with pre-schools, schools, libraries and community bodies.

Conclusion

The literature evidences the adage that it takes a village to rear a child. Children's social and academic learning is shaped by three overlapping spheres of influence- families, educational settings and communities (Epstein, 1987; 2011; 2018). It is the intersection of family and community together that offer the possibility of positive outcomes for children, through formal programmes (de Bondt et al., 2020) and informal outreach initiatives (Gamse, Martinez & Bozzi, 2017; Jeynes, 2018; Van Vooris et al., 2013; Goforth et al., 2014).

The literature is consistent in recognising learning as a collective endeavour, with spaces, places and people in the community playing central roles in supporting early literacy and numeracy (Shrestha Krolak, 2015; Kelly, 2006). Community engagement makes a difference. The literature suggests that communities support the development of literacy and

numeracy skills but conversely better competencies and knowledge also equip children and adults to work for change in their communities (Baker et al., 2004). Viewed in this way, the collaborative working of schools, parents and communities acts as a social leveller and a mechanism for inclusion (Anderson et al., 2017; Jeynes, 2018; Rankin & Brock, 2012), breaking down barriers and bridging social divides.

Family, school and community engagement is increasingly enabled by technology, which provides opportunities for communication and open-ended learning (Cerquetti, 2016; Van Voorhis et al., 2013). Effective collaboration does not happen automatically and requires strong leadership and structures to enable better learning outcomes for children. Educational leaders play a pivotal role in developing family engagement by setting policy and by creating supportive environments (Smith et al., 2021), while structured initiatives (Epstein, 2018) create an enabling framework across the community (Trimmer et al., 2021). Collaborative working between home, school and community based on principles of building strengths, respect and empowerment (Blythe et al., 2013; Trimmer et al., 2021) creates overlapping spheres of influence that make a difference (Epstein, 2018, p.64) and auger well for children's' learning.

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Dr Geraldine French is an Associate Professor, Head of School of Language, Literacy and Early Childhood Education (ECE), Programme Chair of the Master of Education in ECE at the Institute of Education, DCU and Senior Fellow of Advance HE (SFHEA). Geraldine was commissioned to undertake reviews of literature on the key elements of professional practice in relation to children under three years by the National Council for Curriculum and Assessment and reviews underpinning both national frameworks Aistear and Síolta in ECE. She has published extensively in the areas of quality professional practice in ECE, early literacy, numeracy, speech, language and more recently relational pedagogy with babies.

Marlene McCormack is an Assistant Professor and Chair of the Bachelor of Early Childhood Education Programme in the School of Language, Literacy and ECE at the Institute of Education, DCU. She teaches at undergraduate and postgraduate level in the areas of practice and play, incorporating a focus on language, literacy, numeracy and inquiry and mentoring. Marlene has worked closely with Penn Literacy Network based in The University of Pennsylvania's Graduate School of Education (Penn GSE), over many years, developing and delivering literacy courses to early childhood educators. Her doctoral work is focusing on the area of pedagogical documentation. Other current areas of research include play in the lives of young children experiencing stress and professional practice (placement).

Dr Siún Nic Mhuirí is an Assistant Professor in Mathematics Education, in the School of STEM Education, Innovation and Global Studies, Institute of Education, DCU. She teaches at undergraduate and postgraduate levels. Siún has been involved in research evaluations which support policy developments as both contributing author and principal investigator. She has conducted research in the area of teaching and learning of mathematics in early childhood and primary education, of specific mathematical strands in upper primary school and on the Maths4All project. Currently, she is working on a NCCA commission to develop support materials for the forthcoming primary mathematics curriculum. Siún is also an active member of CASTeL, and co-leader of a thematic working group (TWG) of the European Society for Research in Mathematics Education.

Caoimhe Shiel, BEd, MEd Lit, is a teacher at primary level in a DEIS school, where she currently teaches infant classes. She is especially interested in young children's writing development and in fostering parental involvement in literacy. She continues to contribute to the Write to Read project, which she works as an associate. Her role involves advising other disadvantaged schools on approaches to effective literacy development. Caoimhe was a finalist in the Literacy Association of Ireland Outstanding Thesis Award in 2020. She has facilitated tutorials in literacy for undergraduate students since 2019.

Appendix Research Strategy and Tabulation of Results

This literature review focuses on engaging communities in children and young people's learning, in particular establishing engagement between early childhood education and care (ECEC) settings, schools, teachers, and library services to promote literacy/digital literacy and numeracy (LDLN) development in the community. There is a dearth of meta-analyses and systematic reviews of the role of community; just four systematic reviews were found (de Bondt et al., 2020; Gutierrez et al., 2021; Lowe et al., 2021 & Trimmer et al, 2021), two of which focussed on literacy (de Bondt et al., 2020; Lowe et al., 2021). Three reviews focused on Science Technology Engineering and Mathematics Education (STEM) initiatives (Ashley et al., 2017; Gamse, 2017; Young et al., 2017). These systematic reviews and meta analyses were augmented with other identified key studies, reports and reviews. Please see Figure 1 Prisma Chart and Table 1 for Tabulation of Results. The review responds to the following research questions.

Research questions

4. How do community initiatives and programmes support all children's

    engagement in literacy/digital literacy/ numeracy activities?

5. How can communities contribute to children's transition across diverse contexts,

    particularly in relation to literacy, numeracy and digital literacy?

6. What are the characteristics of effective partnerships or programmes which

    support literacy/numeracy digital literacy across settings and in out of school

    contexts?

Key Data Sources Consulted

- SCOPUS, EBSCO, ERIC

- Google Scholar (to identify articles that did not appear in a systematic review)

- Handbooks in the field published since 2011

- 'Grey literature' (e.g., reports published by international and national organisations/governments – UNESCO, OECD, Dept of Education, NCCA etc.)

Key Search Terms

DE "EDUCATIONAL cooperation" OR DE "EXPEDITIONARY learning system" OR DE "INTERORGANIZATIONAL relations" OR DE "INTERSCHOOL communication" OR DE "INTERSCHOOL cooperation" OR DE "COMMUNITY-school relationships" OR DE "COMMUNITY centers" OR DE "COMMUNITY arts projects" OR DE "TEACHERS & community" OR DE "LIBRARIES & community" OR DE "COMMUNITY-based special education" OR DE "COMMUNITY life" OR DE "COMMUNITY information services" OR DE "COMMUNITY education" OR DE "COMMUNITY-school libraries"

We sought meta-analysis or systematic reviews, post 2011 and peer-reviewed.

Scopus

"Community Partnerships" OR "Transitions to schools" OR "Community Engagement" or "Community Collaboration" OR "Community Participation" OR "Community Initiatives" OR "Community Programme" Or "Community Program" OR "Community Intervention" OR "community Outreach" OR "Work experience" OR "Intergenerational" OR "Parent & toddler groups" OR "community-based interventions" AND Education

We sought meta-analysis or systematic reviews, post 2011 and peer-reviewed.

Inclusion and exclusion criteria

Inclusion criteria included:

- Focus on school-community relationships or interventions
- Focus on education (literacy, numeracy, digital literacy)
- Post 2011
- Meta-analysis, systematic review, synthesis, best evidence,
- literature review, international review
- Evidence-based or National/International Partnership Models

Exclusion criteria included

- Predominant focus on something other than education (e.g., health literacy)
- Not focussed on links in the community
- Not a systematic review or meta-analysis
- Not higher-education
- Greater focus on parents rather than community
- Unpublished theses
- Books, except specific Handbooks
- Book review
- Single case study not sufficient for inclusion unless relevant to under-represented disciplinary area (mathematics or digital literacy) or age-range (secondary)
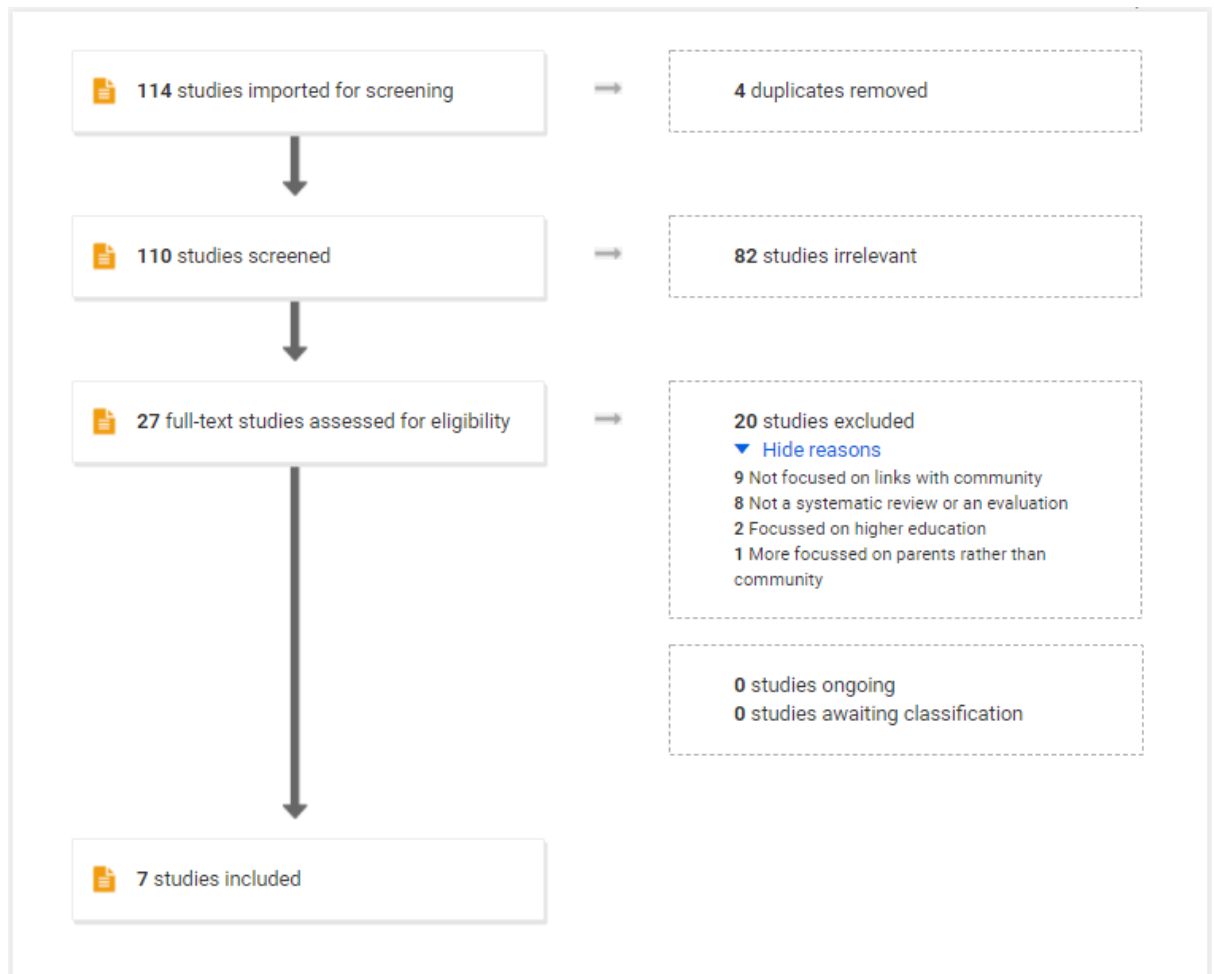
Figure 1. Prisma Chart B6.2 Engaging Communities

B6.2 Enabling Communities Tabulation of Results

Review	Number of studies	Effect size (If available)	Theme	Age range	Finding
Ashley, Cooper, Cala, & Brownell (2017)	46	Not reported	STEM/Transition to university	Second level/ university	STEM Summer Bridge programmes appear to be successful in meeting academic success goals (e.g., increasing knowledge of discipline), psychosocial goals (e.g., developing students' sense of efficacy and belonging) and department goals (e.g., increasing diversity). However, more high-quality research is needed.
Gamse, Martinez, & Bozzi (2017)	29	Not reported	STEM/STEM experts	Primary-Secondary	Variety in the roles which STEM experts play in educational outreach activities. Research designs employed do not allow causal claims to be made about STEM experts' involvement in student outcomes. Recommendation that well-researched theory of change or logic model should be articulated for STEM outreach projects. Further recommendations for improvements to research designs on this topic.
Young, Ortiz, &Young (2017)	15	0.37, $p < 0.0001$	Out-of-school learning opportunities (after school, summer camps, enrichment programmes)	K-12	Out-of-school STEM learning opportunities found to have significant effect on older children's (grades 6 - 12) interest in STEM. Positive effect for younger children (K-5) but not statistically significant. Larger effect sizes were identified for studies with a dual academic and social focus.

Gutierrez, Lowe, & Guenther 2021	28	h2 ¼ .14	Cultural considerations Student outcomes through literacy programmes	4–12 years	Indicators and Barriers for success across literacy programmes (Abracadabra, Bilingual, Direct Instruction, Making Up for Lost Time in Literacy (MULTILIT), National Accelerated Literacy Program, Principal as Literacy Leaders, Learning to Read, Reading to Learn, Creative Arts Indigenous Parental Engagement programme (CAIPE). Indigenous population, Australia.
Lowe, Tennent, Moodie, Guenther & Burgess, 2021	27	Not reported	Cultural considerations Indigenous cultural programmes	School-going	The review found that while many Indigenous families have advocated for their children's to have access to quality language and cultural programmes, barriers of indifference, resourcing and leadership, have worked to limit students' ability to access to these programmes. The studies highlight the effects on students' sense of identity, the strengthening connectedness to community and Country and the intergenerational sharing of cultural knowledge. The implications for practice are clear, in that there is an urgent need to centre macro-issues of policy, funding and systemic structures to better support schools and communities in implementing language and culture programmes.
Trimmer, Dixon & Guenther, 2021	67	Not reported	Collaboration and engagement between school and community leaders	School-going	Findings from the systematic review have highlighted six themes that exemplify the importance of leadership in establishing successful collaborations in Indigenous educational settings to impact positively on student social and academic outcomes. The major findings of this review highlight that the principal's role in Indigenous schools is complex and must extend beyond the school gate to include community as active partners in decision-making and problem solving. Collaborative models of leadership based on the knowledge of cultural context and tailored to meet the needs of individual communities are essential.

| de Bondt, Willenberg, Bus (2020) | 44 studies | Before ECE (d = 0.31, 95% CI [0.23, 0.38], k = 30),

 During ECE (d = 0.29, 95% CI [0.23, 0.35], k = 23) | Literacy/Book Giveaway scheme | Infancy/Early years | Book giveaway programmes from infancy have a positive effect on home literacy environments, reading interest and higher measures of literacy related skills before/during early childhood education. Initiatives focused on shared reading as part of the home literacy environment. Children of participating families scored higher on measures of literacy-related skills prior to and during the early years of school. |