

DIRECTORATE FOR EDUCATION AND SKILLS**Process quality, curriculum and pedagogy in early childhood education and care****OECD Education Working Paper No. 47**

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Abstract

This paper reports the findings of an integrative review of the literature conducted to gain insight into the relationship between process quality, curriculum and pedagogy. Process quality attends to those aspect of early childhood education and care (ECEC) provision associated with children's interactions and experiences in the ECEC setting, including with peers, adults, materials and other resources. Process quality is considered an important mechanism for moving quality ECEC provision beyond structural dimensions of quality alone (e.g. child-to-adult ratios, minimum space requirements). Curriculum and pedagogy in this paper examines the definitional relationship between teaching and learning, with this relationship having implications for the extent to which identified features of the ECEC curriculum may be used to leverage increased process quality. This paper finds that defining the relationship between curriculum and pedagogy is required to facilitate the use of curriculum as a lever for process quality according to the socio-cultural context in which ECEC is intended for young children.

Résumé

Le présent document expose les conclusions d'un examen de la littérature à visée intégrative qui a été mené pour éclairer la relation entre la qualité des processus, les programmes et la pédagogie. La qualité des processus s'intéresse aux dimensions de l'offre d'éducation et d'accueil des jeunes enfants (EAJE) qui sont associées aux interactions et expériences des enfants dans les structures d'EAJE, notamment avec leurs camarades, les adultes, les matériels éducatifs et d'autres ressources. On considère que la qualité des processus est un mécanisme important pour inscrire l'offre d'EAJE de qualité dans un cadre qui transcende les seules dimensions structurelles de la qualité (par exemple, le taux d'encadrement, la surface minimale requise). Dans le présent document, les programmes et la pédagogie examinent la relation entre l'enseignement et l'apprentissage, l'un se définissant par rapport à l'autre ; cette relation détermine en effet la mesure dans laquelle certaines caractéristiques des programmes d'EAJE peuvent être utilisées pour améliorer la qualité des processus. Il ressort du présent document qu'il est nécessaire de définir la relation entre les programmes et la pédagogie pour que les programmes puissent plus facilement servir de leviers pour améliorer la qualité des processus, en fonction du contexte socioculturel dans lequel l'EAJE s'adresse aux jeunes enfants.

Table of contents

Abstract	3
Résumé	3
Introduction	5
1. Quality in early childhood education and care	7
1.1. Structural quality.....	9
1.2. Process quality	9
2. Curriculum and pedagogy	11
2.1. Play and play-based learning	12
3. Research questions	15
4. Methodology	15
5. Findings	18
5.1. Categorisation of papers by research type	18
5.2. Coding of papers for Research Question 1	19
5.3. Coding of papers for Research Question 2	25
6. Discussion	33
6.1. Research papers by type.....	33
6.2. Features of curriculum supporting process quality	34
6.3. Relationship between curriculum and pedagogy	36
6.4. A conceptual framework: process quality, curriculum and pedagogy	37
Conclusion	40
Implications	41
References	42

FIGURES

Figure 1. Features of curriculum supporting process quality	35
Figure 2. Relationship between curriculum and pedagogy	37
Figure 3. Conceptual framework for understanding the relationship between process quality, curriculum and pedagogy	38

TABLES

Table 1. Publications categorised by research type for Research Questions 1 and 2	18
Table 2. Features of curriculum supporting process quality according to research publication type.	19
Table 3. Characteristic themes of the relationship between curriculum and pedagogy.	26

Introduction

This paper examines the relationship between process quality, curriculum and pedagogy in Early Childhood Education and Care (ECEC). Process quality is a dimension of quality concerned with the range of interactions and experiences children have in their ECEC settings. Learning and developmental benefits for young children are associated with high levels of process quality in ECEC (Black et al., 2017^[1]). Curriculum and pedagogy are concepts used to describe approaches to teaching and learning in ECEC settings, including what and how young children learn. While research regarding process quality, curriculum and pedagogy as separate aspects of ECEC provision are well-established, the relationship between the three remains unclear (Burchinal, 2018^[2]); particularly the extent to which curriculum, and by extensions, pedagogy may operate as a lever for enhancing process quality in ECEC (OECD, 2019^[3]).

This paper begins with an overview of the research and thinking about quality in ECE more broadly, leading into a discussion regarding the distinction between structural quality and process quality in ECEC. The next section of the paper discusses curriculum and pedagogy in ECEC, examining how these are distinguished in their relationship as either focussing on pedagogy as subsidiary to curriculum; or pedagogy as a framework for enacting curriculum. This section of the paper also examines how play, and the notion of play-based learning is positioned in the ECEC literature regarding curriculum and pedagogy.

Following these sections, two research questions informing an integrative review of the literature conducted for the purpose of this paper are presented. The research questions derive from Phase II of the OECD Quality beyond Regulations policy review, encompassing the role of process quality in expanding quality ECEC internationally. The methodology used for the review is then detailed. Findings for each research question are presented in turn. The discussion section of the paper identifies the need for more expansive research regarding process quality from discursive perspective and notes that curriculum may be indicated as a lever for process quality where attention is directed towards defining the relationship between pedagogy and curriculum in the first instance. Key terms used in this paper are presented in Box 1.

Box 1. Key Terms

Curriculum framework: a nationally approved and/or empirically validated document detailing content, approaches to learning and teaching and/or learning outcomes for young children

ECEC setting: any setting in which ECEC is provided, such as kindergartens, playgroups, long day care, childcare, nursery, foundation and/or family day care

ECEC service: a government, not-for-profit, for-profit, community and/or non-government provider of ECEC for young children

Culture/cultural context: knowledge, beliefs, values and/or norms enacted and shared amongst a given group or society

Globalisation: economic, cultural and political spread of information, ideas, policies, employment and technologies within interdependent countries worldwide

Learning dispositions: how young children participate in and engage with the learning process according to the constraints and/or enablers of a given situation

Regulation: policies and practices concerning the provision of ECEC for young children

Teacher/educator: an adult engaged in the education and care of young children in ECEC settings, with varying levels of professional qualification

Young children: infants, toddlers and pre-schoolers aged birth to six years, or primary school entry age

1. Quality in early childhood education and care

Quality in early childhood education and care (ECEC) is a contested concept with a history of research and development regarding both its definition, and deployment in policy and practice. Broadly, quality stems from two main perspectives, one orientated towards human rights and the second stemming from a social consideration of the economic impact on participation in quality ECEC on young children's later educational and developmental outcomes. For the first perspective, children are considered worthy of access to quality ECEC in the immediacy of their own lives (Herczog, 2012_[4]). This view is indicated in policy initiatives such United Nations Convention on the Rights of the Child (UN Commission on Human Rights, 1990_[5]) and the United Nations Sustainable Development Goals (UN General Assembly, 2015_[6]). ECEC is considered fundamental to young children's personhood, and their full and equitable participation in society in the here and now (Correia et al., 2019_[7]). Core to this view is the argument that quality should be defined according to the relevance and connection ECEC holds for children's lives in the cultural context in which they live (Kjørholt, 2019_[8]). Moss (2016_[9]) argues that quality may be philosophically viewed as a choice recognising what people value as necessary for young children within a given society, and therefore make available in terms of ECEC service provision [see also Dahlberg, et al. (1999_[10])]. However, current research suggests such choices are not always culturally enabled, whereby the globalisation of ideas regarding ECEC teaching and learning from a Western-European perspective are indicated in the global south (Fleer and van Oers, 2018_[11]; Saavedra and Pérez, 2018_[12]; Whitebread, 2018_[13]). For example, Ritchie (2016_[14]) explains how indigenous ways of belonging centre on human and non-human relationships [or what others describes as 'more-than-human', e.g. Duhn (2018_[15]); Ham (2019_[16])]; whereas Western-European perspectives on ECEC quality centre on human-to-human interactions. When the human-to-human is emphasised in these contexts, young children's cultural meaning making experiences are not always fostered, short-circuiting the rights of children to ECEC that allows full and productive participation in their society. Agbenyega (2013_[17]) also argues that ECEC approaches borrowed from Western-European thinking are culturally and historically limited in their capacity to respond to the localised learning needs of children in Sub-Saharan Africa. Where these approaches are used, and considered relative to quality ECEC, cultural choices regarding what is valuable for children to learn may be circumscribed.

The second perspective is based predominately on a social-economic argument for the provision of quality ECEC. According to this view, expenditure on quality ECEC provision in the early years results in reduced social security spending as children reach adulthood (Heckman, Pinto and Savelyev, 2013_[18]; van Belle, 2016_[19]). Rogers et al. (2019_[20]) also found that increased ECEC participation for Vietnamese children incurs educational and cognitive benefit into adolescence, mediating against aspects of disadvantage, such as lower levels of parental education. Earlier research suggested that participation in low-quality ECEC has detrimental effects on young children from vulnerable circumstances [e.g. Loeb, et al. (2004_[21]); Phillips, et al. (1994_[22])]; whereas high-quality ECEC mitigates against social disadvantage in the short term, and remains sustained over the long term (Garcia et al., 2016_[23]; Melhuish et al., 2015_[24]; Vandell et al., 2010_[25]). Thus, the argument that quality ECEC is a worthy social investment. Minervino (2014_[26]) provides a detailed examination of the literature concerning quality ECEC. He argues that the evidence showing that "higher quality is better" is now clear, and that the benefits of high quality ECEC should be taken as a matter of "settled fact and not an active area of exploration or research" (p. 4). The alignment of quality ECEC with outcomes for children

references a form of quality known as ‘outcome quality’ (Sylva, 2010_[27]), with research suggesting that the high-quality ECEC influences young children’s readiness for school and long-term social outcomes for the better (Bakken, Brown and Downing, 2017_[28]).

What is measured, or identified, as contributing to quality is a significant area of debate [e.g. Sheridan (2009_[29])] related to the extent to which quality may be considered an observable construct as opposed to a subjective or culturally-defined experience (Klinkhammer and Schäfer, 2017_[30]; Fenech, 2011_[31]). This problem is evident in cross-cultural accounts of quality research in ECEC. For example, Slot et al. (2015_[32]) found differences in the relationship between process quality (e.g. children’s interactions and experiences in an ECEC setting) and structural quality (e.g. features of ECEC provision such as staff qualifications and child-to-adult ratios) in different countries. Here, teachers from England were shown to indicate higher levels of process quality in education rather than care settings, whereas teachers in the Netherlands indicated higher process quality according to access to professional development. In Germany, process quality was shown to be mediated by the numbers of children from migrant backgrounds in the classroom relative to teacher experience, whereas in Portugal, public sector teachers were more likely to evidence process quality than those in other sectors. The authors concluded that “country specific moderators were evident in all countries, pointing to a complex interplay of factors, mostly related to country specific aspects of the ECEC system” [Slot et al., (2015_[32]), p. 7] [see also OECD (2015_[33])].

Ishimine and Talyer (2014_[34]) earlier pointed to quality as a subjective construct, arguing that quality ECEC requires investigation from amongst at least four perspectives, including: 1) children; 2) families; 3) staff and 4) researchers and professionals (p. 273). Children, families and staff are clearly stakeholders in ECEC provision [e.g. Harrist, et al. (2007_[35])]. Research attending to their perspectives on quality suggests families and staff consider the expression of children’s ideas, and the facilitation of children’s socio-emotional development to be representative of quality ECEC [e.g. Wolf (2018_[36])]; while research regarding children’s perspectives centralises on understanding how children experience the ECEC setting (Einarsdottir, 2008_[37]; Laevers, 2017_[38]). In terms of children’s experiences, Walsh and Gardner (2005_[39]) developed a measure, known as the Quality Learning Instrument (QLI) to establish children’s perspectives on dispositional aspects of learning enabled by their ECEC settings, including motivation and concentration, independence, confidence and well-being, social interaction and respect, and multiple skill acquisition. Somewhat aligned with these aspects of dispositional learning, Sandester and Seland (2016_[40]) investigated children’s subjective experiences of well-being in their ECEC settings. They found that 55% of surveyed children (n=177) in their study indicated that ECEC was only ‘OK’ compared to being ‘Very nice’, with ECEC sometimes perceived by children as a boring experience. They argued that children’s perspectives must therefore be accounted for in ongoing efforts to establish understandings of what constitutes quality in ECEC settings.

Despite research representing stakeholder perspectives on quality in ECEC, the work of researchers and professionals continues to have a strong presence in the literature, particularly that seeking to inform policy and practice in the provision of ECEC internationally [e.g. European Commission (2014_[41]); Siraj, et al. (2016_[42]); Weiland (2018_[43])]. Two main dimensions are typically studied here, these being structural quality and process quality. It should be noted that additional dimensions of quality, including global quality (Association for Childhood Education International, 2011_[44]), pedagogical quality (Fonsén and Vlasov, 2017_[45]) and outcome quality (Sylva, 2010_[27]) are also researched. Given the focus of this paper on the relationship between process quality, curriculum and pedagogy, attention now shifts to a brief explanation of structural relative to process quality.

1.1. Structural quality

Structural quality refers to those aspects of an ECEC setting or service defining its organisation and implementation. These aspects occur at a macro and micro-level. Macro level aspects of quality include national regulations concerning accreditation, monitoring and reporting, funding arrangements, legislated child-to-staff ratios, group sizes, and requirement for professional education and training of educators/staff. Micro-level aspects of quality refer to the management of services for ensuring young children’s physical health and safety, the length of the early learning day for children, and centre-based policies related to in-situ service delivery (Slot, 2018_[46]). Structural quality is considered an important dimension of ECEC quality because it shapes the educational environment in which children will participate, e.g. ensuring access to appropriate adult-to-child staff ratios and qualified ECEC educators (Wang, Hu and LoCasale-Crouch, 2020_[47]). Structural quality is also highly amenable to regulation, and thus viewed as an appropriate mechanism for upscaling quality ECEC across many services (e.g. via national regulations for ECEC provision). It is for this reason that structural quality is amongst the highest reported measures of quality used for ECEC service provision internationally (OECD, 2015_[33]). While structural quality is an important component of ECEC quality provision, it is not designed to address the development of interactions between children and educators considered important for young children’s learning and development (LoCasale-Crouch et al., 2017_[48]; Phillipsen et al., 1997_[49]). Melhuish et al. (2016_[50]) consider such interactions to be those occurring among children and adults that are responsive, readily-available and cognitively-sustained drawing on available bodies of content knowledge (e.g. literacy, numeracy, science, arts). The second dimension of quality, that of process quality, therefore centres on measuring the interactions and experiences children have with others and the available resources within their ECEC settings.

1.2. Process quality

Process quality is a significant dimension of ECEC quality because it is concerned with extending perspectives on quality in ECEC beyond a focus on structural quality alone. Process quality reflects a particular value on the interactions and experiences children have within their ECEC settings. This includes the physical and emotional care and support they receive, the instructional quality of their interactions with teachers, and the organisation of the children and corresponding provision of activities over the course of the day [OECD (2018_[51]), p. 22]. Theoretically, the notion of proximal processes derives from Bronfenbrenner’s (1994_[52]) socio-ecological (later known as the bio-ecological) model of human development. Bronfenbrenner (1994_[52]) defined proximal processes as the interactions occurring between the child and the people, various objects and symbols in their immediate environment. Examples of such processes are found in “parent-child and child-child activities, group or solitary play, reading, learning new skills, problem-solving, performing complex tasks, and acquiring new knowledge and know-how” (p. 472). Sameroff (2009_[53]) similarly describes proximal processes in terms of a transactional model whereby the “development of any process in the individual is influenced by the interplay with processes in the individual’s context over time. The development of the child is the product of the continuous dynamic interactions of the child and experience provided by his or her social settings” (p. 6). Later Bronfenbrenner and Morris (2006_[54]) argued that proximal processes should be understood relative to the focus of attention placed within the relationship between the person, object and symbol on the developmental goal of the interaction (p. 113). Bronfenbrenner and Morris (2006_[54]) and Sameroff (2009_[53]) each suggests that developmental goals are likely determined by cultural context. Process quality

is therefore centrally concerned with the mediational aspects of young children's learning and development in relationship with others and the cultural environment.

Given adults are usually responsible for establishing the social setting and educational environment in ECEC settings, research regarding process quality in ECEC typically focuses on adult-child interactions and the range of experiences (including those involving objects and symbols) adults provide for young children. Accordingly, several measures have been developed as a means of establishing process quality in-situ. These include the Classroom Assessment Scoring System (CLASS) (Pianta, LaParo and Hamre, 2007^[55]); the Caregiver Interaction Scales (CIS) (Arnett, 1989^[56]); and the Student-Teacher-Relationship Scale (STRS) (Pianta, 2001^[57]). Still further measures focus specifically on interactions and children's well-being, including the Sustained Shared Thinking and Emotional Well-being Scale (SSTEW) (Siraj, Kingston and Melhuish, 2015^[58]); the Respect, Reflect, Relate Scale (RRR) (Department of Education and Children's Services, 2008^[59]); and the Process-oriented Child Monitoring System for the Early Years (POMS-EY) (Laevers, Moons and Declercq, 2013^[60]). Other measures containing aspects of process quality are combined with structural quality to measure 'global' quality in ECEC settings. These include the Early Childhood Environment Rating Scale (ECERS) (Harms and Clifford, 1980^[61]); the Early Childhood Environmental Rating Scale-Revised (ECERS-R) (Harms, Clifford and Cryer, 1998^[62]); the Early Childhood Environmental Rating Scale-Extensions (ECERS-E) (Sylva et al., 2006^[63]); and the Global Guidelines Assessment (Association for Childhood Education International, 2011). Siraj et al. (2016^[42]) provide a comprehensive overview of the available measures. Research shows that in general the measures are reliable in capturing the indicators on which they focus (Bredenkamp, 1986^[64]; Sylva et al., 2006^[63]). However, there is debate concerning the applicability and/or relevance of the indicators in diverse cultural contexts [see, for example: Declercq, et al. (2011^[65]); Garvis, et al. (2018^[66]); Pérez, et al (2017^[67])].

Where measures of process quality, specific instances of process quality (e.g. interactions and well-being) and/or global quality are used to investigate the outcomes of quality ECEC provision research consistently shows that higher-level process quality promotes young children's language, literacy, numeracy and social skills for the better (Cappella, Aber and Kim, 2016^[68]; Hong et al., 2019^[69]). Such consistency is substantiated by Ulferts et al. (2019^[70]) who conducted a meta-analysis of 17 longitudinal studies involving 16 461 children from nine European countries. This study found that high-level process quality has a significant and lasting association on children's language, literacy and numeracy outcomes, persisting across family background (e.g. socio-economic status), children's age, and stages of education.

Research highlighting the value of process quality for children's learning and developmental outcomes therefore suggests process quality is an important means of moving beyond structural quality relative to improved ECEC service provision. However, the extent to which curriculum, and by extension the relationship between curriculum and pedagogy, may operate as a lever for process quality in policy and practice is not as sufficiently clear (Burchinal, 2018^[2]). This is an important area of clarification, because process quality by definition includes aspects of both curriculum and pedagogy in terms of what and how young children learn and develop (i.e. the interactions and experiences they have within an ECEC setting). This paper now turns to an examination of curriculum and pedagogy as core concepts in ECEC.

2. Curriculum and pedagogy

Curriculum and pedagogy are long standing concepts in early childhood education and care (ECEC) pertaining to the teaching and learning of young children. Curriculum and pedagogy in ECEC are considered markedly different from that of older children in primary and secondary education, primarily due to the very young ages of the children involved, from birth through to school starting age (Rogers, 2015^[71]). This age group are viewed as having unique and qualitatively different learning and socio-emotional needs to older children, resulting views about the content of their learning, and approaches to the most effective forms of engagement for learning with very young children. Within the ECEC research and theoretical literature, and also within nominated policies documents (such as national curriculum frameworks), the distinction between curriculum and pedagogy remains opaque. In general, there are two main forms in which curriculum and pedagogy are presented. These are:

1. **Pedagogy as subsidiary to curriculum:** where curriculum is viewed as a primary course of study, objectives and outcomes in which pedagogy as a nominated approach to teaching and learning is subsumed [e.g. Jung and Pinar, (2015^[72])]. In ECEC, curriculum may therefore be defined as the content, interactions and available resources comprising what children are offered and/or experience within the ECEC setting [e.g. Wood and Hedges (2016^[73])]
2. **Pedagogy as a framework for curriculum:** encompassing the notion of didactics, or how material (e.g. content) may be taught according to the meaning and purpose of education (Ligozat and Almqvist, 2018^[74]). In ECEC, pedagogy may therefore be represented as the modes of learning and/or teaching employed to support children's learning and development within the range of activities designed and implemented to facilitate the mode of learning and teaching itself (Siraj-Blatchford, 2009^[75]).

Alexander (2008^[76]) argues that the distinction between curriculum and pedagogy derives from a culturally-incurred ideological perspective regarding the purpose of learning and teaching held by any given nation. Ideological perspectives may include academic rationalism (education for the purpose of skill acquisition); social and economic efficiency (education providing for human capital needs); progressivism (education enhancing the personal and intellectual development of learners); cognitive pluralism (education developing the competencies and attitudes of learners); orthodoxy (education inducting learners into a given political or religious system); and/or social re-constructivism (education directed towards social reform) (p. 313). Ideological perspectives are not mutually exclusive and may be evidenced in national curriculum and pedagogical orientations in one or more combinations. However, an important aspect of culturally-incurred ideological positioning is that curriculum and pedagogy from a Western-European perspective is likely to place pedagogy as subsidiary to curriculum, whereas the Central-European tradition is likely to consider pedagogy as the vehicle for curriculum via consideration of didactics. Here, didactics does not take on the tone of Western-European thinking in terms of transmission-based or direct 'teaching' but is more philosophically aligned with meeting the personal and social needs of learners within a given educational system (Lee and Kennedy, 2017^[77]). Notably, both curriculum and didactics are indicated in ECEC curriculum research in Asia (Hien, 2018^[78]), with the historical emphasis on teaching in this cultural context more recently mediated by Western-Europe accounts of child-centred pedagogy. This appears to be a generating a complicated relationship between

a combination of academic rationalism and progressivism, e.g. (Yang and Li, 2020^[79]). Wood and Hedges (2016^[73]) suggest that research about curriculum and pedagogy in ECEC is characterised by a lack of definition in which the relative relationship between the two typically remains undefined, or in many cases are used as interchangeable concepts.

Defining the relationship between curriculum and pedagogy or noticing the extent to which they are used interchangeably, is significant because their ideological positioning has implications for policy with flow impact in practice. For example, Gallo-Fox and Cuccuni-Harmon (2018^[80]) illustrate how an academic rationalist approach towards curriculum serves to emphasise the association between content and learning outcomes in ECEC. They report how this association results in ECEC practices centred on preparing children for school, accompanied by narrowed content offerings (e.g. more maths and literacy), and in some cases expulsion and suspension of children from ECEC services (pp. 479-483).

In ECEC research and theory, the relationship between curriculum and pedagogy is most frequently ill-defined in discussions concerning the role of play, or what is often referred to as ‘play-based learning’ (Pyle and Danniels, 2017^[81]) in the education and care of young children. The next section of this paper therefore considers how play and play-based learning are represented in ECEC curriculum and pedagogy.

2.1. Play and play-based learning

Play has a strong historical presence in Western-European approaches to ECEC, informed by philosophical thinking about childhood as a period of natural learning, and psychological perspectives on young children’s learning and development as aided through opportunities for children to participate in exploratory, hands-on activities (Wood, 2010^[82]). Supported by research showing the advantages of play for young children in terms of their social development, emotional regulation and language learning, play is advocated for as primary approach for learning and teaching in the early years [e.g. (Wisneki and Reifel, 2012^[83])]. This includes through approaches such as emergent curriculum (Tal, 2014^[84]); child-centred learning (McMahon and McEnvoy, 2019^[85]); and the provision of active learning environments (Kuh, 2014^[86]) for young children. However, in policy and research, play is often used interchangeably to describe both curriculum and pedagogy. Siraj-Blatchford (2008^[87]) argues that such interchangeability often results in curriculum and pedagogy appearing as undefined concepts in their own right; while Pramling Samuelsson and Aspulund Carlsson (2008^[88]) argue that play itself comes to equally represent both curriculum and pedagogy in ECEC settings. This conflation centralises the historical value of play in ECEC from a Western-European perspective to the extent that it becomes inseparable from notions of learning. Where this occurs, debates in the literature concerning the relevance and suitability of play as both curriculum and pedagogy are generated primarily because the educational task with which play has become responsible overwhelms its capacity to meet the needs of ECEC in the various social, cultural and political situations in which it is located, see, for example, (Rogers, 2015^[71]). Thus, understanding how curriculum may be leveraged for increased process quality becomes difficult because debates about play over-shadows identification of what is required to ensure the most appropriate learning for all children in many different circumstances.

Two issues thus become apparent. First, the cultural relevance of play as a primary enabler of learning and development; and second, the capacity of play to deliver on young children’s content learning and conceptual knowledge over and above its capacity to promote valued learning dispositions in ECEC. Regarding the first issue, Euro-centric normative explanations of play describe play as a voluntary and intrinsically motivating activity enacted by children with consequent implications for learning and development, particularly in language, social development and the ability to cognitively interpret the

world. However, challenges to this way of thinking, highlight play as a culturally determined activity, assigned value only to the extent that it is fostered and enabled for young children according to their participation in society, and ultimate contributions to that same society as adults. Boyette (2016^[89]) studied the play of children in foraging communities and concluded that both “the frequency and content of children’s play differs in ways consistent with the view that children’s play preferences reflect their foundational cultural schema and may continue to help in cultural learning” (p. 767). Thus, play is relevant to children to only to the extent that it connects with their cultural experiences, whether this includes valuing play as a mode of learning or viewing play as a distraction from the core task of learning.

Increasing globalisation has influenced the uptake of predominately Euro-centric interpretations of play internationally, particularly in ECEC curriculum frameworks in Asia and the global south [e.g. (Li and Wang, 2017^[90]; Pérez and Saavedra, 2017^[91]; Sims et al., 2018^[92])]. However, in many of these contexts, play is not culturally indicated for learning per se; with learning viewed in terms of skill acquisition, mastery of content, highly-valued contributions to community, participation in oral language activities (e.g. story-telling, multi-participant conversational turn-taking, songs and rhyming), observation and modelling (Escayg and Kinkead-Clark, 2018^[93]; Tiko, 2017^[94]; Ukala and Agabi, 2017^[95]). The impact of travelling notions of play-for-learning manifests in research describing valiant efforts on behalf of educators attempting to mediate imported ideas about play within the existing culturally-derived ideological positions on curriculum and pedagogy held within their own countries (Gupta, 2020^[96]). For example, Yang and Li (2020^[79]) describe how educators in Shenzhen and Hong Kong (China) recontextualise imported Euro-centric understandings of play-based learning in ECEC in the face of the existing understandings and values held amongst themselves and the families with whom they work regarding academic learning (e.g. mastery of content) and skill acquisition, particularly in preparation for the primary school years. They argue that this recontextualisation causes a disjunction between the intended curriculum (e.g. play) and the implemented curriculum (e.g. using play to promote content learning and skills acquisition) in attempt to find favour with a curriculum ideology orientated towards academic rationalism. Sriprakash (2010^[97]) likewise found that mediation of a child-centred approach to learning with the conditions and systems informing the provision of ECEC in rural India resulted in a weakening of the pedagogical interaction between children and the teacher. Here ideology matters because it shapes the intended curriculum in its implemented form according to cultural values, not necessarily what research or theory has to say about the value (or otherwise) of play-for-learning.

For the second issue, play is debated according to its capacity to enable content learning and/or conceptual knowledge acquisition for children over and above the inherent freedom of play as an intrinsically chosen activity by children for fostering disposition learning, such as creativity, problem-solving and persistence (Broström, 2017^[98]; Bubikova-Moan, Næss Hjetland and Wollscheid, 2019^[99]). This debate is conducted in research and theorisation concerning both curriculum and pedagogy, usually because these concepts are not sufficiently defined (e.g. pedagogy as subsidiary to curriculum; or pedagogy as a framework for curriculum). In this situation, play represents learning both in terms of content and approach, with some researchers arguing that play alone is insufficient for learning because children are unable to develop conceptual knowledge through exploration alone, and that exposure to structured content in relationship with a more experienced other (e.g. teacher) is required (Hedges and Cullen, 2005^[100]). Others suggest that only play initiated by the child may be considered play for the purpose of learning as play is an activity enacted by children that is freely chosen and pleasurable, with research noting that children clearly distinguish between play and work (Pyle and Alaca, 2018^[101]). For

example, Howard et al. (2006_[102]) found that children tend to categorise play as those activities that do not involve a teacher, whereas activities even when made to be ‘play-like’ with a teacher present are more likely to be considered work. Øksnes (2013_[103]) described children’s awareness of the difference between play-for-learning in ECEC settings, and their own freely-chosen play, with freely chosen considered by children to be more truly play. Thus, according to the child-initiated orientation, outcomes of play cannot be captured for instrumental purposes [e.g. (Nome, 2015_[104])], at least in the pre-determination of children’s conceptual development and/or acquisition of content knowledge. The extent to which children’s perspectives on what constitutes play versus work, and associated connotations for learning in ECEC settings remains relatively under-investigated [see, for example, (Colliver, 2017_[105])].

More recently, a middle-ground perspective has gained traction, with play interpreted on continuum of activity with child-initiated and/or child-centred play at one end, and more adult-directed engagement in children’s play at the other. The centre of the continuum represents children and adults meeting in play for the co-development of knowledge through teacher facilitated access to content, and building of children’s literacy, language, mathematical and social skills. This middle-ground now takes many forms in the literature, such as ‘guided play’ (Weisberg et al., 2016_[106]); ‘conceptual play’ (Fleer, 2015_[107]); ‘purposeful play’ (Moedt and Holmes, 2020_[108]); ‘playful structure’ (Walsh et al., 2011_[109]); ‘intentional teaching’ (Lewis, Fleer and Hammer, 2019_[110]); ‘integrated pedagogies’ (Wood, 2010_[82]); ‘playworlds’ (Hakkarainen et al., 2013_[111]); purposefully-framed play’ (Edwards, 2017_[112]); ‘playful pedagogies’ (Broadhead, 2018_[113]) and ‘playful curriculum’ (Sim, 2015_[114]). Of significance here is the extent to which these integrated positions on play are yet to resolve the definitional relationship between curriculum and pedagogy, rather than arguing for a middle-ground approach towards understanding the role of play in ECEC. This may inadvertently serve to reinforce the Western-European pre-occupation with understanding play-based learning in ECEC, rather than identifying the capacity of curriculum, and by extension pedagogy to operate as a lever for process quality in various cultural contexts.

This paper therefore considers two research questions: one concerning process quality and curriculum; and the second, curriculum and pedagogy. These questions are investigated via an integrative review of the literature. Each of the questions are now presented in turn, followed by an explanation of the methodology used to conduct the review.

3. Research questions

The research questions informing this paper derive from the OECD Phase II Quality beyond Regulations (2019_[3]) initiative, encompassing the role of process quality in expanding quality ECEC internationally, including increased understanding for leveraging curriculum as enabler of process quality in ECEC settings. The research questions are:

1. Which features of curriculum are most important for supporting process quality?
2. What is the relationship between curriculum and pedagogy in early childhood education

4. Methodology

This paper addresses Research Question 1 and 2 as an integrative review of the literature. An integrative review of the literature is intended to generate new insight into under-investigated areas of research (Torraco, 2016_[115]), such as the relationship between process quality, curriculum and pedagogy in ECEC. Integrative reviews consider a broad range of research literature, including empirical studies (quantitative, longitudinal, meta-analyses), non-empirical studies (qualitative, case studies, document analysis), theoretical papers (discursive) and literature reviews (systematic, scoping, narrative, rapid) (Paré et al., 2015_[116]). Drawing on a diverse range of literature, including non-empirical studies and theoretical papers characterises the integrative review as distinct from other review types, namely systematic, scoping and/or rapid reviews. In these latter reviews, the intention is typically to address a clearly identified research question, whereas integrative reviews orientate towards generating new insight, often in the form of a new conceptual model or framework into an under-investigated area of investigation. A hallmark quality of the integrative review is the diversity of research literature canvassed, providing rich conceptual material for the establishment of new models or frameworks as the basis for informing policy and/or practice, and also enabling the identification of areas where further research using a range of research approaches may be required (Whittemore and Knafl, 2005_[117]).

The integrative review of the literature reported in this paper followed the five-stage process indicated by Hopia et al. (2016_[118]), including: 1) Problem identification (establishing the research questions); 2) Literature search (detailed search strategy); 3) Data evaluation (paper selection and consideration of the methodological and/or theoretical quality of selected papers); 4) Data analysis (coding and presentation of findings from selected papers); and 5) Presentation (discussion of findings leading to a conceptual model and/or framework) (p. 663).

Having previously established the research questions for this paper, the Literature search (stage two) was conducted in collaboration with qualified university librarian with expertise in the field of Education. This involved trialling several search terms associated with process quality, pedagogy and curriculum in two major databases (Education Resources Information Center- ERIC and Scopus). The trial search terms were refined as a

series of strings for each Research Question in a protocol paper developed for the purpose of this integrative review in consultation with the OECD ECEC organisational unit. These strings were:

RQ1: Which features of curriculum are most important for supporting process quality?

“early childhood education” OR ECEC OR kinder* OR preschool* OR pre-school OR childcare OR child-care OR “child care” OR nurser* AND curricul* OR “content knowledge” OR “learning outcome*” AND “process quality” OR Interact* OR engage* OR relations*

RQ2: What is the relationship between curriculum and pedagogy in early childhood education?

“early childhood education” OR ECEC OR kinder* OR preschool* OR pre-school OR childcare OR child-care OR “child care” OR nurser* AND curricul* OR “content knowledge” OR “learning outcome*” AND pedagog* AND Play OR “play based learning”.

The strings were deployed in three main databases: ERIC, Scopus and Web of Science. The date range for strings used in all three databases was 2010-2020. All results were returned in English. Subject listings were restricted to the following topics: early childhood education, foreign countries, pre-school education, pre-school teachers, pre-school children, kindergarten, young children, programme effectiveness, play, educational practices, educational quality, pre-school curriculum, curriculum development, curriculum, child care, programme evaluation, curriculum implementation, interpersonal relationships, developmentally appropriate practice and emotional development. Publications included reports, book chapters and peer reviewed articles. Journal focus was primarily ECEC related, including amongst others: European Early Childhood Education Research Journal, International Journal of Early Years Education, Early Years: An International Journal of Research and Development, Contemporary Issues in Early Childhood, Early Childhood Education Journal, Journal of Early Childhood Research, Journal of Early Childhood Teacher Education, Australasian Journal of Early Childhood, Journal of Research in Childhood Education, Journal of Curriculum Studies, Early Childhood Development and Care, Early Childhood Research Quarterly and Education 3-13.

The search terms were also deployed in Google Scholar for Research Questions 1 and 2. The top four pages of returned results for each Research Question were searched by title, and then by abstract for any inclusions in the final set of papers. A general search in Google, also using the search terms was conducted to pick up any relevant reports. Where findings from these two searches did not meet the inclusion and/or exclusion criteria for the integrative review of the literature but contained relevance to the topic of investigation (e.g. process quality, curriculum and pedagogy) they were reported in the earlier sections of this paper.

For Data evaluation (stage 3), the database searching, Google Scholar and Google search combined returned 968 papers (Research Question 1: 374 papers; Research Question 2: 594 papers). These papers were manually reviewed by title and keywords, creating a new set of 148 papers (Research Question 1: 94; Research Question 2: 54). The new set was then manually reviewed by abstract using inclusion and exclusion criteria. The inclusion criteria were: 1) the paper concerns children aged birth to eight years; 2) the paper considers process quality relative to curriculum, including content, learning outcomes, and/or interactions; 3) the paper considers curriculum and/or pedagogy, including reference to play, play-based learning and/or encompassing content areas or learning outcomes for children. Exclusion criteria were: 1) the paper does not concern children aged birth to eight years; 2) the paper is not centrally concerned with process quality, curriculum and/or

pedagogy. An earlier inclusion criterion “the paper considers curriculum and/or pedagogy relative to children’s, educators and/or families’ perspectives and/or experiences in early education and care settings” was deleted as this was not sufficiently refined to adequately reduce the number of papers concerning the specific relationship between process quality, curriculum and pedagogy. Searching by abstract using these criteria returned 58 papers (Research Question 1: 32; Research Question 2: 26).

All 58 papers were read in full and evaluated for adequacy according to measures used for empirical publications (Ishimine and Tayler, 2014_[34]); descriptions of methods and analysis for non-empirical publications (O’Brien et al., 2014_[119]); and pragmatic adequacy of theory and/or literature review-based publications (Hean et al., 2016_[120]). Using this process, 37 papers were deleted as inadequate, with 21 papers remaining (Research Question 1: 10; Research Question 2: 11). A final hand search of 21 papers following the reference list of each was conducted, generating two more papers for Research Question 1 (n=12) and one more paper for Research Question 2 (n=12).

For Stage 4, Data analysis the papers relevant to each Research Question were categorised according to research type. Four categories were used: 1) Experimental (e.g. empirical); 2) Non-experimental (e.g. qualitative, case-studies); 3) Discursive (e.g. theory-based); and 4) Literature (e.g. reviews). Papers were then inductively coded within their categories according to Research Question 1 and Research Question 2. For Research Question 1, this concerned identification of the features curriculum important for supporting process quality. For Research Question 2, identification of any shared elements indicated a relationship between curriculum and pedagogy. This first round of inductive coding generated five main themes for Research Question 1 (interactions, content, routines, activities and resources) and three main themes for Research Question 1 (cultural context, ideology and locus of control). A second round of deductive coding was conducted, applying the identified themes for each Research Question to the papers across their category types to ensure all publications were exposed to the identified codes. A draft version of the paper containing findings and discussion was then circulated amongst OECD member countries, with feedback addressed regarding the proximal processes associated with process quality, and increased clarity concerning the relationship between curriculum and pedagogy. The circulation of the draft provided opportunities for papers to be recommended for inclusion in the paper beyond those captured in English. No further papers were recommended in this manner, although several were suggested for inclusion in the introductory section of the paper, including references to grey literature detailing policy positions on ECEC quality.

5. Findings

5.1. Categorisation of papers by research type

The categorisation of papers according to research type for Research Question 1 and Research 2 indicated a higher proportion of experimental papers for Research Question 1 [6 papers] than for Research Question 2 [1 paper]. Likewise, Research Question 2, recorded more non-experimental papers [6 papers] than did Research Question 1 [3 papers]. Research Question 1 recorded no discursive papers compared to Research Question 2 [3 papers]. Literature papers were somewhat evenly spread for Research Question 1 [3 papers] and Research Question 2 [2 papers] (Table 1).

Table 1. Publications categorised by research type for Research Questions 1 and 2

	Research Question 1	Research Question 2
Experimental	Admas (2019 _[121]) Denny, et al. (2012 _[122]) Fulgini, et al. (2012 _[123]) Őun, et al. (2018 _[124]) Slot et al. (2015 _[32]) Wysłowska and Slot (2020 _[125])	Cabell, et al. (2013 _[126])
Non-experimental	Cooper et al (2014 _[127]) Davis and Dunn (2018 _[128]) McNally and Slutsky (2018 _[129])	Bautista, et al (2019 _[130]) Fung and Cheng (2012 _[131]) Gupta (2015 _[132]) Hedges et al (2011 _[133]) Rentzou, et al (2019 _[134]) Sproule, et al (2019 _[135])
Literature	Burchinal (2018 _[2]) Hamre, et al (2012 _[136]) Jenkins and Duncan (2017 _[137])	Fisher, et al. (2010 _[138]) Weisberg et al (2013 _[139])
Discursive		Farquhar and White (2014 _[140]) Ng'asike (2014 _[141]) Stephen (2010 _[142])

The difference between the number of experimental papers for Research Questions 1 and 2 is likely a function of Research Question 1 focussing on process quality relative to curriculum. Published research about process quality is dominated by investigations using established measures such as Classroom Assessment Scoring System (CLASS) (Pianta, LaParo and Hamre, 2007_[55]), Early Childhood Classroom Observation Measure (ECCOM) (Stipek and Byler, 2004_[143]), Early Childhood Environment Rating Scale (ECERS) (Harms and Clifford, 1980_[61]), and the Early Childhood Environment Rating Scale Revised (ECERS-R) (Harms, Clifford and Cryer, 1998_[62]). These measures are typically deployed in research seeking to establish the relationship between process quality and children's learning outcomes, content acquisition, and/or the relationship between structural and process quality in ECEC service provision. Such work is typically designed using comparative methods and/or controlled trials, using quantitative approaches towards measures and analysis. In contrast, Research Question 2, concerning the relationship between curriculum and pedagogy recorded higher numbers of non-experimental papers than Research Question 1, indicating the impact of previous development concerning measures of process quality on the type of research conducted in this area. Experimental

research is more strongly established for process quality than it is for understanding the relationship between curriculum and pedagogy. Notably, curriculum and pedagogy research use more non-experimental methods, relying on case studies, interviews and observations to interpret how curriculum and pedagogy are related. Literature reviews appear to be used in research concerning both process quality and curriculum, and curriculum and pedagogy. It is notable that no discursive papers were indicated for Research Question 1, although 3 were identified for Research Question 2. This may suggest an under theorisation of process quality in the field compared to the methodological measurement of process quality in practice. For curriculum and pedagogy, it may indicate that ideological positionings concerning the purpose of education in ECEC are more evident in discussions concerning the relationship between curriculum and pedagogy than in research addressing process quality.

5.2. Coding of papers for Research Question 1

Coding of papers for Research Question 1 generated five main themes indicative of the features of curriculum supporting process quality. These were: interactions, content, routines, activities and resources. Of these features, interactions and content were most prevalent, followed by routines, activities and resources. Consistent with the earlier categorisation of the papers by research type, experimental papers were most evident focussing primarily on interactions and content. Non-experimental and literature-based papers were equally represented, with interactions most often identified as a feature of curriculum supporting process quality (Table 2).

Table 2. Features of curriculum supporting process quality according to research publication type.

		Interactions	Content	Routines	Activities	Resources
Experimental	Admas (2019 _[121])		✓			✓
	Denny, et al. (2012 _[122])	✓	✓			
	Fulgini, et al. (2012 _[123])			✓		
	Öun, et al. (2018 _[124])	✓				
	Slot et al. (2015 _[32])	✓	✓			
	Wyslowska and Slot (2020 _[125])	✓			✓	
Non-experimental	Cooper et al (2014 _[127])	✓				✓
	Davis and Dunn (2018 _[128])			✓		
	McNally and Slutsky (2018 _[129])	✓				
Literature	Burchinal (2018 _[2])		✓		✓	
	Blaiklock (2010 _[144])		✓			
	Jenkins and Duncan (2017 _[137])		✓			

A summary of each paper according to theme is now presented, beginning with interactions and content, followed by routines, activities and resources.

5.2.1. Interactions

Interactions were identified as a feature of curriculum supporting process quality in terms of their capacity to promote learning and teaching opportunities amongst children and educators in ECEC settings. For example, Wysłowska and Slot (2020_[125]) investigated structural quality, process quality and curriculum for toddlers in Polish and Dutch classrooms. Their study sought to establish profiles for different classroom types (e.g. as a proxy for process quality), relative to structural quality and teacher reported curriculum activities. Using cluster analysis, this work identified the relationship between different aspects of quality at the classroom level. Process quality was thus measured using an adapted version of CLASS (Pianta, LaParo and Hamre, 2007_[55]), known as CLASS Toddler (Slot, 2018_[46]), notably examining Emotional and Behavioural Support and Engaged Support for Learning via video observations of classroom activities (conducted alongside teacher report of curriculum). Three main classroom types were established: 1) High-quality climate and support-for-learning; 2) Overall low-quality learning; and 3) High-emotional and low-support-for learning. Teachers in the High-quality climate and support-for-learning cluster provided high levels of socio-emotional regulation for children through interactions and provided for language and pre-literacy activities more so than pretend play. Overall low-quality provided the least opportunity for language, pre-literacy and other activities (e.g. math and science) and the highest amount of pretend play. High-emotional and low-support-for-learning received less opportunities for all types of activities, including pretend play.

These classroom types suggest the combination of socio-emotional regulation and the provision of language and pre-literacy conditions supports interactions between educators and children in the High-quality climate and support-for-learning type, compared to other types where reduced opportunities for interactions are provided, particularly through language and pre-literacy. This suggests that the provision of pretend play may require additional support in the form of socio-emotional regulation, and language and pre-literacy concepts to support learning. Wysłowska and Slot (2020_[125]) also suggest the High-quality climate and support-for-learning type indicates that providing a range of activities for young children is a significant stimulus for interactional opportunities and that such provision should not be associated with teacher-directed approaches per se, in so much as ‘providing sequential and cumulative learning opportunities’ (p. 13) in the classroom.

Denny et al. (2012_[122]) considered classroom quality in 114 Tennessee ECEC settings, using three measures (ECERS-R; ECERS-E; CLASS) to establish (as one amongst four aims) programme, teacher and classroom characteristics of quality. They found that while the settings were rated as ‘good’ across ECERS-R and ECERS-E, that interactions via instruction as per CLASS were not as strong. This was evident in lowly occurring instances instructional feedback and modelling to children. Denny et al (2012_[122]) note a relationship with curriculum (where pedagogy is subsidiary), suggesting that existing curriculum may provide inadequate opportunities for interactions between educators and children, possibly because a lack of content depth. This publication also noted that quality measurements may inadvertently direct educator attention towards practising only what is assessed; thus, making consideration of the relationship between the measure being used and the ECEC system in which it is enacted necessary.

McNally and Slutsky (2018_[129]) worked with four teachers from urban pre-school classrooms in the northern Mid-West of the United States. Starting from the understanding that relationships predicate quality interactions for learning they examined teachers’ beliefs about their own relationships with children. The Student-Teacher Relationship Scale (STRS) (Pianta, 2001_[57]), Teacher Belief Q-Sort (Rimm-Kaufman et al., 2006_[145]), observations and participant interviews were used. The constant comparative method was

the primary means of analysis, with descriptive statistics only used for the STRS and Q-Sort. This work established that two main types of interactional behaviours were characterised by high-quality teacher-child relationships, including: Discipline related interactions and Secure-based related interactions. Discipline-based interactions involved: “guidance, directives, natural consequences, punishments, and non-responsiveness to behaviour” (p. 516); Secure-based interactions included: “awareness of and/or responding to a signalling behaviour; maintaining proximity; providing positive responsive behaviour; providing negative responsive behaviour; calling out to children; drawing attention to children; addressing children privately, and using praise” (p. 517). Awareness of a signalling behaviour, maintaining proximity, providing positive responsive behaviour and addressing children privately were indicated as positive interactions, whereas negative responsive behaviour, calling out and drawing attention to children was indicated of a less trusting relationship with implications for positive interactions associated with a reduction in learning. Teachers in this study thus reported high level commitment to ensuring secure-based interactions with children.

Õun et al. (2018_[124]) investigated the presence of process quality indicators, including interactions in teacher practice relative to measures of structural quality. This study worked with 46 pre-school teachers from the Harju and Rapla counties of Estonia using the ECCOM (Stipek and Byler, 2004_[143]), to measure process quality indicators such as interactions between children, and how these are related to three main teaching approaches, including: teacher-directed, child-centred and child-directed (p. 546). The findings suggested that teacher relationships with children were largely ‘friendly and caring’, but insufficiently specific in terms of the social environment required to promote interactions for learning, with this most evident in the child-centred approach. The authors argued that this may be a function of the expectation that teachers provide child-centred learning as per the Estonian National Curriculum for Preschool Child Care Institutions (2008_[146]), with ‘child-centred’ enacted via emotionally engaged relationships with children, rather than children taking responsibility for their own learning choices [(Õun et al., 2018_[124])p. 552].

Slot et al. (2015_[32]) examined the effect of an education programme (e.g. curriculum) as one aspect (the other being educator in-service professional learning) of structural quality with implications for process quality. This study was predicated on the argument that existing research focussing on the ‘iron triangle’ of structural quality, comprising child to teacher ratio, group size and formal pre-service teacher education may not account for variations in process quality otherwise associated with curriculum. Slot et al. (2015_[32]) defined the activities engaged in by children derived from curriculum as an aspect of process quality because the activities themselves incur opportunities for interactions (p. 66). Whereas, formalised documented curriculum may be considered an aspect of structural quality because it is open to governmental regulation. In this study, 155 preschool and 121 daycare classes for 2-3 year-old children from urban, semi-urban and regional areas of the Netherlands participated. CLASS Toddler was completed, as were teacher reports concerning the provision of pre-academic activities, activities promoting self-regulation, play and affective behaviour. The findings suggested that while emotional behavioural support in the classrooms was on average, moderate to high, this was not the case for educational support, defined as the provision of literacy and numeracy activities, feedback, and pretend play. Interestingly, Slot et al. (2015_[32]) argue this finding is consistent with previously conducted research [e.g. Weiland, et al. (2013_[147])] suggesting interactions for enhancing learning relative to curriculum are not as strongly evident as are emotional and behaviour support in ECEC settings.

Finally, Cooper et al. (2014_[127]) examined teachers’ learning relationships with toddlers as an aspect of interaction-based process quality. They argued that dispositions are central to learning relationships, suggesting that how teachers understand the cultivation of

dispositions with toddlers, and how families are involved in the assessment of children's dispositional learning remains under-researched. Dispositions are defined by Cooper et al., (2014) as the motivational capacity of young children to participate in learning, within the educational setting (p. 736). Using interpretative case study, the perspectives of five educators from Aotearoa New Zealand, working with children aged three months to three years in one early childhood centre were captured, via a combination of interviews and fieldwork observations. The findings indicated that teachers believed dispositions were related to curriculum provision via opportunities for free play, requiring little intervention by teachers. The findings also suggested that engaging families in conversation about their children's dispositional learning was difficult to achieve, partly because families did not often engage in written feedback on teachers' attempts to document children's learning. The authors argued that these two findings were in fact contrary to the expectation indicated by *Te Whāriki* (New Zealand ECEC curriculum document) (New Zealand Ministry of Education, 2017_[148]), the Aotearoa New Zealand curriculum framework in which dispositions arguably develop through collaborative relationships with children (p. 741).

5.2.2. Content

Content is indicated as a feature of curriculum pertaining to what children will learn. In the papers identified for this integrative review, content was identified as a feature of curriculum supporting process quality, not so much in terms of what children learn, but as a stimulus from which quality interactions with educators could be facilitated. Two of the papers, Denny et al. (2012_[122]) and Slot et al. (2015_[32]) referred to content in this manner. Denny et al. (2012) suggested current curricula may be inadequate for promoting interactions between children and educators, while Slot et al. (2015_[32]) considered content a marker for teacher interactions, characterised by more 'teacher-guided educational talk' (p. 73). Another paper also indicated the significance content (Admas, 2019_[121]), but positioned this in terms of cultural appropriateness. Admas (2019_[121]) investigated the quality of pre-school education in Addis Ababa, Ethiopia. Admas' (2019_[121]) study used the Global Guidelines Assessment (Association for Childhood Education International, 2011_[44]) as implemented by 37 teachers across 21 private and 16 government preschools. Curriculum Content and Pedagogy comprises one of several items on the Global Guidelines Assessment. Admas (2019_[121]) found that both private and government pre-schools had lower than average scores on Curriculum and Content Pedagogy. This was attributed to some pre-schools using imported curricula considered culturally-inappropriate for the setting, combined with a strong focus on mathematics and English content disconnected from the children's life-worlds. Teachers in this study noted that the available content did not sufficiently develop the skills required of children to participate in their own communities (p. 172).

Burchinal (2018_[2]) argued that content as an aspect of curriculum appears to be under-represented in research related to process quality. She established this argument in a review of the literature, suggesting that evidence-based curricula can improve children's literacy skills, social skills and executive functioning (p. 5). Like Wysłowska and Slot (2020_[125]), Burchinal (2018_[2]) considered curriculum sequencing as important for children's learning. However, the actual composition of content and/or discipline areas comprising evidenced-based curricula was not identified in this paper, with content somewhat conflated with intentional teaching, in which educators aim to explicitly engage young children in learning. Meanwhile, Jenkins and Duncan (2017_[137]) defined curriculum as the 'knowledge and skills children should acquire in educational setting' (p. 37). In a review of the literature, they represented an American perspective in which curricula is either designed by researchers and implemented in practice by educators or designed and implemented by

educators in-situ. Accordingly, two main categories of curricula were identified, these being ‘whole-child’ curricula and ‘more targeted, skill-specific’ curricula (p. 37).

According to Jenkins and Duncan (2017_[137]), whole-child or emergent curricula focuses on the child’s engagement with the educational environment as designed and set up by the educator (e.g. using equipment, materials and engaging with peers) for learning; whereas skill-specific curricula focuses on sequenced academic content or social-emotional skills. Skill-specific curricula are not associated with a transmission approach to teaching per se, but are implicated with a playful approach to learning, differentiated from whole-child curricula by its emphasis on identified and progressive content. They argue that while skill-specific curricula can advance children’s learning in numeracy and literacy, whole-child curricula are not necessarily more efficacious at promoting children’s school readiness. This suggests that some form of identified content may be a feature of curriculum supporting process quality.

The role of content in ECEC curricula was also canvassed by Blaiklock (2010_[144]) concerning *Te Whāriki* (New Zealand Ministry of Education, 2017_[148]). Blaiklock (2010_[144]), drawing upon Bennett (2005_[149]) defines *Te Whāriki* as a curriculum characterised by the social pedagogic, rather than pre-primary tradition. According to the social pedagogic tradition, content is not specified in terms of subject matter, in so much as being locally developed by teachers with an emphasis on building the capacity for learning amongst young children. In a review of the literature concerning the historical implementation of *Te Whāriki*, Blaiklock (2010_[144]), considers the social pedagogic approach open to a reduction in content such that educators and children may have insufficient conceptual material with which to engage as a basis for learning in the first instance. This paper therefore suggests that the mediation of curricular approaches spanning content-focussed (e.g. identified learning material for children) through to process-learning (e.g. exploratory learning of material) is a necessary consideration in the use of curriculum as a lever for process quality in ECEC.

5.2.3. Routines

Routines were indicated as a feature of curriculum relative to process quality in terms of the opportunities they provided for interactions amongst children and educators, regardless of the extent to which these were capitalised on for learning. For example, Fuligini et al. (2012_[123]) examined the role of routines in terms of time-use in early childhood settings with regard to process quality, seeking to understand if time spent in various activities indicated different outcomes for children. They followed two groups of children (aged three years from Los Angeles, California). Target group children already enrolled in a service (public pre-schools, private pre-schools, family day care) and comparison group children not attending a service into the second year of the study in which both target and comparison group children went on to attend a service. Teachers completed a questionnaire indicating the curriculum (e.g. High/Scope, Creative Curriculum, Montessori, High Reach, Curiosity Corner) used in their setting, while measures of quality using CLASS and selected items from ECERS-R and ECERS-E were used. The Emergent Academics Snapshot (Ritchie et al., 2001_[150]), a time-sampling procedure was also used to capture time spent in adult-child interactions and in different activities. Activity was conceptualised as the mode of engagement set by adults for participation in learning opportunities by children. The findings indicated that free-choice activities, followed by outdoor play was the most frequently occurring use of time. Second to free choice and outdoor play were ‘basic activities’ characterised as transitioning from one activity to another, lining up, toileting, waiting for turns to use materials and meals (p. 204). Using latent class analysis, two models of classroom were identified, including: High-Free-Choice and Structured-

Balance. Children in Structured-Balance classrooms spent more time in teacher-directed, whole group, and small group activities than children in High-Free-Choice classrooms. Teacher reported curriculum was significantly associated with classroom type (e.g. Creative Curriculum High-Free-Choice and High Scope Structured-Balance). While quality measures did not account for difference in classroom type, there was evidence to suggest that children in Structured-Balanced classrooms experienced more interactions with their teachers, and experienced more math, language and art activities than children in Free-Choice classrooms. However, children in Free-Choice classrooms had more opportunities for fantasy play and gross motor activities than their peers in Structured-Balanced classrooms (p. 2017). The authors argued that while children in both classroom types had more or less of one type of activity, their routine ‘basic activities’ were largely under-utilised for learning. Thus, regardless of classroom type, routines may operate as a feature of curriculum that to date remain under-utilised for increased levels of process quality in ECEC.

Davis and Dunn (2018_[128]) examined relationships in ECEC internationally, including Australia, New Zealand and England. Specifically interested in educator and infant relationships, they examined the positioning of emotional relationships in three curriculum frameworks, the Early Years Learning Framework (Australian Department of Education and Training, 2009_[151]), the Early Years Foundation Stage (British Department of Education, 2017_[152]), and *Te Whāriki* (New Zealand Ministry of Education, 2017_[148]). They also interviewed 6 educators from Sydney, Australia. They found that little differentiation was made across the three frameworks regarding infants and children, and that emotional relationships were little evident in the documents compared to concepts such as learning, development and experiences. In contrast, the educators highlighted emotional relationships as core to their work with infants and noted the role of routines in the education and care of children in this age group. Routines were argued to provide predictability for children, serving to strengthen the emotional relationship between children and educators, from which opportunities for one-on-one, or small group interactions between infants and educators could occur. This was the case even though routines and emotional relationships were not highly evident in the curriculum documents with which the educators worked.

5.2.4. Activities

Activities are indicated as a feature of the curriculum to the extent that they enable engagement with content and/or facilitate interactions between children and educators in ECEC settings. Wysłowska and Slot (2020_[125]) (see ‘Interactions’ for details), suggested three main classroom types: a) High-quality-climate-and-support-for-learning; b) Overall-low-quality-learning; and c) High-emotional-and-low-support-for-learning. These classroom types were associated with different forms of activity provision. For example: Overall-low-quality-learning provided the least variety of activities for children; High-quality-climate-and-support-for-learning provided the most self-regulation activities; and High-emotional-and-low-support-for-learning the most science and math activities (p. 11). Drawing on international research [e.g. Preschool Curriculum Evaluation Research Consortium, (2008_[153])], the authors argued that a balance of activities including engagement with academic content (e.g. literacy and numeracy) and play are significant for high-quality ECEC, with ‘balance’ understood to involve educators in playful activities with children rather than instructional teaching. Burchinal (2018_[2]) (see ‘Content’) also suggested activities are a significant feature of curriculum. While Burchinal (2018_[2]) did not define activities in terms of time-use or content, activities were nonetheless conceptualised as experiences for children that should be age-appropriate, enriching, instructional, engaging, developmentally appropriate and hands-on (e.g. pp. 3-9); without

which opportunities for process quality via interactions with the educational environment may be lacking.

5.2.5. *Resources*

As a feature of curriculum resources are related to activities, in that activities depend on their execution by teachers, and in their engagement with children on the materials and space available for learning. Admas (2019_[121]) (see ‘Content’ for details) notes that the availability of resources is critical, without which neither content and nor opportunities for engaging in high-quality interactions with children are possible. Admas (2019_[121]) describes ‘impoverished compounds’ in Addis Ababa, Ethiopia, where hands-on resources for learning are scant; with scarcity promoting the use of pencil and paper activities for young children (p. 173). Young children relying on pencil and paper as primary resources misaligns with the enriching, engaging and hands-on activities for learning advocated for by Burchinal (2018_[2]). Cooper et al. (2014_[127]) (see ‘Interactions’) also found that infant and toddler educators valued resources for learning. In their investigation, the provision of resources was associated with free play opportunities for young children, with free play in turn considered to facilitate children’s dispositions, such as curiosity and problem-solving.

5.3. Coding of papers for Research Question 2

Coding of papers for Research Question 2 generated three main themes offering insight into the relationship between curriculum and pedagogy in ECEC. These themes were: locus of control, cultural context and ideology. Of these themes, locus of control was most evident, followed by cultural context, and ideology (none of which were derived from experimental papers). Locus of control was evident in papers of all types, the only theme across both Research Questions 1 and 2 for which this was the case, indicating the centrality of debate concerning child-centred and/or adult-centred approaches to ECEC in terms of process quality, curriculum and pedagogy. Most of the papers pertaining to Research Question 2 were non-experimental, with the focus of attention in research of this type evenly spread between locus of control and cultural context as characteristics of the relationship between curriculum and pedagogy. Discursive papers addressed all three themes, locus of control, cultural context and ideology. This is not surprising given the extent to which curriculum and pedagogy is open to theorisation, in terms who initiates and controls learning, how culture relates to learning, and ideological positions on teaching and learning in ECEC (Table 3).

Table 3. Characteristic themes of the relationship between curriculum and pedagogy.

		Locus of control	Cultural context	Ideology
Experimental	Cabell, et al (2013 _[126])	✓		
Non-experimental	Bautista, et al (2019 _[130])	✓		
	Fung and Cheng (2012 _[131])	✓	✓	
	Gupta (2015 _[132])		✓	
	Hedges et al (2011 _[133])			✓
	Rentzou, et al (2019 _[134])		✓	
Literature	Fisher, et al. (2010 _[138])	✓		
	Weisberg et al (2013 _[139])	✓		
	Sproule, et al (2019 _[135])	✓		
Discursive	Farquhar and White (2014 _[140])			✓
	Ng'asike (2014 _[141])		✓	✓
	Stephen (2010 _[142])	✓		

A summary of each paper according to theme is now presented, beginning with locus of control, followed by cultural context, and then ideology.

5.3.1. Locus of control

Locus of control addresses the extent to which learning and teaching opportunities amongst children and educators are child-initiated and directed or defined according adult expectations for play and learning. Locus of control is also indicated in attempts by researchers to mediate between child-centred and more adult-directed learning. Cabell et al., (2013_[126]) investigated the extent to which instructional interactions amongst educators and children varied according to setting and activity. Setting was defined as the location of interactions within the classroom, including large-group, free choice, meals and routines. Activity was defined as shared reading, literacy, math, science, social studies and aesthetics. Instructional interactions were measured using the Instructional Support Domain from CLASS (Pianta, LaParo and Hamre, 2007_[55]). 314 teachers participated, with over half teaching in Head Start programmes, and one third in public pre-schools. 87.9% of the children were indicated to be living in poverty. The results indicated that large-group (teacher-directed) and free-choice (child-selected) activities occurred more often than routine or meal time activities, with large-group rather than free-choice activities supporting teacher interactions with children directed towards promoting higher order thinking skills (e.g. reasoning, comprehension). However, quality feedback and language modelling was equally evident in both large-group and free-choice activities. Science appeared to be the activity engendering the most significant interactional interactions in both the large-group and free-choice setting, although social studies and aesthetics were provided more frequently. The authors concluded that interactions were most effective during large-group and free-choice settings, with science activities providing amongst the most interactionally rich learning opportunities according to activity. They indicated that large-group and free-choice settings appear to have unique pedagogical characteristics in which one is not necessarily better than the other, suggesting that locus of control in terms of interactions between children and adults, may be both child-centred and adult-directed. Notably, Cabell, et al. (2013_[126]), echoing the findings of Fuligini et al. (2012_[123]), noted that routines and mealtimes were under-utilised for instructional interactions, with this being of concern given these activities take up a significant portion of the child's day.

Bautista et al. (2019_[130]) conducted video observations with 108 teachers, seeking to understand the congruence between the provision of purposeful play as defined in the Singaporean Nurturing Early Learners (Singapore Ministry of Education, 2013_[154])

curriculum framework and play-based learning in practice. In this paper, play-based learning is indicated in both curriculum and pedagogical terms. For curricula, the Nurturing Early Learners framework is detailed as providing an approach to early learning predicated on Western-European philosophers including “Jean Piaget, Lev Vygotsky, John Dewey and Jerome Bruner” (Bautista et al., 2019, p. 718_[130]), alongside research about quality early learning derived primarily from Australia, North America and Europe. The authors argue that these philosophical perspectives, combined with Western-European research about quality have generated an approach to early learning in which the benefits of play as an exploratory and engaging activity for young children are directed towards the purposeful realisation of learning outcomes. They argue that purposeful play therefore represents a combination of both child-centred and teacher-directed activity. However, the authors interpret purposeful play relative to van Oers’ (2013_[155]) conceptualisation of play as a form of cultural activity defined by the norms and expectations of education within any given socio-cultural context. Their detailed analysis of the type of learning centre activities provided to children relative to teachers’ instructional activities (measured using CLASS), with children indicated that teachers spent more time with children doing classroom assignments than in other centre-type activities. Classroom assignments typically involved teachers working with small groups of children on worksheets, while centre activities involved pre-designed learning experiences for children in the arts, fine motor, literacy, numeracy, blocks and science. Bautista et al. (2019_[130]) argue that the historical value placed on learning over play within Asian communities means that the teachers did provide play-based learning activities as per the Nurturing Early Learners (Singapore Ministry of Education, 2013_[154]) framework, but continued to value and support teacher-directed learning via classroom assignments. Thus, the locus of control remains centrally with the teacher from a pedagogical perspective, even though the curriculum attempts to mediate a balance between child-centred and teacher-centred engagement through the notion of purposeful play.

Fung and Cheng (2012_[131]) similarly highlight tensions between curriculum mandated play-based learning and its provision in practice. This study, conducted in Hong Kong (China), examines the implementation of play-based learning by teachers in 20 schools catering for children aged 3-6 years. Classroom observations and interviews with teachers, parents and principals were completed. While parents believed play was fun and enjoyable for children, they did not consider play-based learning as sufficiently structured for enabling children’s academic outcomes and preparation for later schooling. Teachers reported being constrained by parents’ expectations for more formal learning, and administrative expectations of their teaching to progress academic learning for children. While play was noted by teachers to be highly enjoyable for children, it was not adopted pedagogically, despite learning through play being indicated in the Hong Kong Pre-Primary Curriculum (2006_[156]) [since updated by the Curriculum Development Council (2017_[157]) as the Kindergarten Education Curriculum Guide: Joyful learning through play balanced development all the way]. Interestingly, principals agreed with parents and teachers that play was highly enjoyable for children, and yet were concerned for the capacity of their educators to translate play-based learning into practice. This concern was predicated on the historical importance placed on academic learning from an Asian perspective, and the nature of their teacher education system having not previously canvassed play-based learning. Fung and Cheng (2012_[131]) concluded that while parents, teachers and principals were in consensus about the positive aspects of play for children, this was not translatable in practice given academic learning and school preparation was valued more highly. This tension between consensus and practice, suggests an interpretation of play-based learning in which the responsibility for learning resides with the teacher, thus influencing pedagogical decision-making towards more instruction and less play.

Fisher et al. (2010_[138]), operating from a Western-European perspective, provided a comprehensive examination of the literature concerning ‘playful learning’, a term they define as encompassing free play and guided play activities directed towards the realisation of academic, social and developmental outcomes for children. They identify a history of debate in which academics are considered counter to play. Academics involves teachers in the direct instruction of children according to nominated content areas and a pre-identified conceptual trajectory. Play represents the whole-child, in which the child’s interests, needs and experiences inform what is meaningful learning for them in a moment of time. Contrary to the polarity of the debate, Fisher et al. (2010_[138]) suggests research indicates that academics and play are not incompatible and may be integrated for successful learning. Central to this interpretation is the definition of guided play, involving teachers in setting up play activities for young children, modelling and scaffolding conceptual knowledge and language, co-playing with children and asking open-ended questions. Within the context of guided play, recognition of the whole child centres on their capacity to control and help direct the nature of the activity and therefore consequent learning. In this conceptualisation of playful learning, the locus of control for play-based learning is arguably shared between the child and teacher, although it should be noted that it is the teacher who establishes and defines the setting up of learning activities in the first instance.

Weisberg et al. (2013_[139]) likewise considers ‘guided play’ an integrated child-centred and adult-directed approach (p. 104). Drawing on research into the benefits of defined content for children, e.g. (Zigler and Bishop-Joseph, 2006_[158]), alongside participation in playful activities by children [e.g. (Alfieri et al., 2010_[159])], they argue that guided play represents the middle-ground for learning in ECEC settings. The benefits of guided play for children are identified as increased self-efficacy, reduced stress, increased executive function and academic learning (p. 108). However, like Fisher et al. (2010_[138]), Weisberg and colleagues (2013_[139]) also identify what the teachers establish as the available activities and resources for learning within the classroom as central to the achievement of guided play. Thus, while recognition of the child’s contribution to the play is somewhat evident within the notion of guided play, the conceptual direction of the play itself may be largely adult-initiated, and thus directed.

Sproule et al. (2019_[135]) also attempting to mediate the debate between child-centred play and teacher-directed learning, proposed three dimensions of early childhood pedagogy. Each dimension operates as a continuum. The ‘playfulness dimension’ on a continuum of high playfulness to high seriousness; the ‘autonomy control dimension’ from mostly child-initiated to mostly adult-initiated; and the ‘nature of learning dimension’ from mostly emergent to mostly curriculum-goal focussed. These dimensions are identified drawing on existing literature concerning play-based learning and teaching in ECEC, including the work of Weikart (2000_[160]), Siraj-Blatchford et al. (2002_[161]), Pyle and Danniels (2017_[81]) and Wood (2007_[162]). Each of these studies address the relationship between children-centred and adult-directed activity, seeking to understand these as relationally operational. Notably, Sproule et al. (2019_[135]) claim “play that is unsupervised, what most would term free play, is not pedagogy” (p. 413). Thus, they argue play is only pedagogically relevant where it is orientated towards learning. Typical activities provided within the ECEC classroom may therefore be mapped onto each of their three dimensions according to where they are located on each continuum, including reading to children, activity stations (learning centres), or completing set tasks. This mapping enables teachers to attend to the various demands associated with realising curriculum outcomes relative to different dimensions of playfulness, autonomy and learning type. Sproule et al. (2019_[135]) claim their three dimensions of pedagogy provides a productive mental model of pedagogy for educators in practice, helping to guide children from more child-centred play in their

younger years, towards more curricular orientated and teacher-directed experiences in the years before starting formal school.

Finally, Stephen (2010_[142]), provides an overview of the historical commitment of the Western-European sector to conceptions of child-centredness and play-based learning relative to pedagogy as a form of teaching. She explains how child-centredness and play have been considered corner-stone concepts in ECEC, traditionally informed by cognitive constructivist (e.g. Piagetian) accounts of young children's development. In this paper, Stephen (2010_[142]), goes on to cite research indicating that play alone does not necessarily support learning as effectively as play aligned with adult-supported interactions, including modelling and scaffolding of language and concepts [e.g. Bowman, et al. (2000_[163]); Siraj-Blatchford and Sylva (2004_[164])]. Stephen (2010_[142]) consequently introduces ideas from socio-cultural theory, regarding the cultural basis of learning via social interactions with others, including more competent peers and/or adults. From this basis, Stephen (2010_[142]) develops the notion of pedagogy as that which simultaneously references play while including adult with interactions with young children. This work was largely prescient of the body of work concerning the locus of control in children's learning post-2010, particularly that using socio-cultural theory to explain interactions for learning between children and adults [e.g. Lewis, et al. (2019_[110]); van Oers and Duijkers (2013_[165])].

5.3.2. Cultural context

Cultural context concerns the significance of social setting in mediating expectations for learning and development [e.g. (Sameroff, 2009_[53])], including that of play and play-based learning in ECEC. Gupta (2015_[132]) conducted a qualitative naturalistic inquiring examining how ECEC pedagogy is enacted by teachers in urban India. She identified three inter-related dimensions in their pedagogy, including “a highly structured academic curriculum mandated by the government and historically rooted in the educational policies of the British colonial administration; the ongoing values-based curriculum rooted in Ancient Indian beliefs and the practical and tacit knowledge of teachers; and some curricular ideas central to Euro-American progressive education” (p. 262). She described this as a form of post-colonial pedagogy not necessarily aligned with any available definition of teaching and learning from a Western perspective, but nonetheless rooted in Indian traditions and values, while acknowledging and drawing on play-based practices such as teachers providing children with access to activity stations for learning.

Gupta (2015_[132]) highlights how all cultures hold particular values about children, and that while these may not emphasise child-centredness as a mode of learning, they nonetheless influence the ultimate form in which pedagogy is enacted. Her argument strongly aligns with the findings from the Fung and Cheng (2012_[131]) (see ‘Locus of control’) study, in which the Hong Kong (China) curriculum, while advocating for play-based learning is mediated in practice by the perspectives of educators, families and principals concerning explicit teaching, thus generating a culturally-situated pedagogy in which play-based learning is present, but not necessarily in the same form as it is advocated for in the Western-European literature.

Rentzou et al. (2019_[134]) encapsulate this cultural distinction in their investigation of the role of academics and play-based learning across eight countries, including Cyprus¹,

¹ Note by Turkey:

The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the

Denmark, Estonia, Greece, Italy, Spain, Turkey, and the United States. They argue that recent initiatives aligning ECEC curriculum with primary school curriculum are beginning to erode the presence of play-based learning in ECEC (e.g. (Fisher et al., 2008_[166]). This erosion is considered relative to how teachers conceptualise and use play in their classrooms. Thus, they investigated the extent to which teachers' conceptualisation of play influence how it is used and provided for in various cultural contexts. Data were generated from 212 teacher participants across all eight countries, via questionnaire (developed by the authors), asking questions such as: How would you define play? How much time do you use play for developing social and emotional skills? How much time do you use play for academic purposes? Can children play for fun or does play tend to have an academic purpose in your classroom? (p. 6). An inductive coding scheme was used to generate constructs for play, with closed questions regarding time-use analysed using non-parametric ANOVA. The authors found that play was conceptualised differently across all the participating countries. In Turkey, the emphasis was on play as entertaining and fun; Cyprus, the creative aspect of play and the relaxing qualities of play; Estonia, play as children's work and a learning activity promoting social and emotional skills; Spain, play as a fun mode of learning; United States, play as self-initiated activity for fun and exploration of the world; and in Greece, play emphasised for learning, knowledge and creativity (p. 6). Italy and the United States used play the most hours per week for academic purposes (between 10 and 15 hours per week); while the United States and Denmark had the most hours per week of play directed towards social and emotional learning (25 and 17.5 hours each). Using play as a mode for social and emotional learning in terms of time allocation was least evident in Cyprus and Spain, where play was considered a creative, relaxing and fun activity for children. Rentzou et al. (2019_[134]) therefore argue that how teachers think about play is strongly linked to the status of play in their respective countries (p. 10). For example, in Denmark where children's rights are strongly supported, free play is more evident than in the United States, where play is more directly related to learning and development (pp. 10-11). The authors conclude that the central nature and purpose of play is culturally-defined, with such cultural relativity incurring implications for the pedagogical articulation of play in practice. Such relativity appears to hold even where various international curricula indicate that play is central to ECEC provision.

Ng'asike (2014_[141]) highlights the cultural relativity of play-based learning from Kenyan perspective, arguing the importation of Western-European thinking about play and its relationship to learning and development does not necessarily hold true for nomadic pastoralist communities. He describes how assumptions about play-based learning translate into overly teacher-directed approaches to teaching young children, typically because the resources required for such learning are not available. When this occurs, the local language, customs and knowledge of the community are not effectively integrated into the children's learning. Ng'askike (2014_[141]) argues that this disconnection between the children's lives and the nominated curriculum and pedagogical approach runs counter to cultural explanations for learning and development [e.g. González, Moll and Amanti (González, Moll and Amanti, 2005_[167]); Rogoff, (2003_[168]); Vygotsky (1978_[169])] concerning the cultural forms of knowledge to which children have access within their communities. He proposes instead a clearer alignment between curriculum and pedagogy based on local

Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union:

The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

knowledge as a basis for learning and development across two cultures; that of the child's own, and recognition that any English-speaking Western-European education is indicated as significant due to globalisation, rather than being inherently suitable for Kenyan children.

5.3.3. *Ideology*

Ideology defines how education is culturally-framed for social and political purposes (Alexander, 2008_[76]). In their paper, Farquhar and White (2014_[140]) critique an existing ideological position in ECEC, arguing that Western-European psychological and empirical approaches towards pedagogy render it essentially interventionist. They suggest that pedagogy has a deep progressive history in the Western-European tradition and cite Vygotsky (1997_[170]) to substantiate the idea that pedagogy is never apolitical but always adopts a particular social pattern aligned with the ideological position guiding its interests (p. 882). Thus, if play is used and researched for instrumental purposes, this must be considered in terms of its relationship to a social and economic ideology, given the significance accorded to those aspects of process quality (e.g. interactions and educational environment) associated with young children's later developmental outcomes and consequent employability. Farquhar and White (2014_[140]) suggest that a political reading of pedagogy highlights its capacity to be more than instrumental, opening the possibility for pedagogy as a relational, ethical and creative encounter with the other. This shift in thinking signals the teacher not only as the teacher in relationship to the child as learner, for example, as in notions of purposeful or guided play intended to benefit learning outcomes; but also, as a learner in his or her own right open to learning from the child.

Hedges et al. (2011_[133]) develop a strong argument for cognitive pluralism as an informing ideology for ECEC curriculum and pedagogy. They use the theoretical construct known as 'funds of knowledge' (González, Moll and Amanti, 2005_[167]) to argue that curriculum and pedagogical practices nominally generated according to children's interests are more likely to derive from the materials and resources traditionally provided for children in ECEC settings (such as clay, blocks, paints, and dress ups) than they are from children's in-situ family and community experiences. The authors of this paper claim that such teacher identified interests are in fact a 'low-level' interpretation of play-based learning (p. 187). Instead, interests should be defined from a socio-cultural perspective as children's "spontaneous, self-motivated play, discussions, inquiry, and/or investigations that derive from their social and cultural experiences" (p. 187). Hedges et al (2011_[133]) consequently used an interpretivist methodology to establish children's home and community interests and how these were interpreted by teachers for learning. They worked with ten teachers and thirty-five children (aged 3-4 years) over the course of a year, conducting observations, interviews and document analysis of teachers' curriculum planning.

Data were inductively coded via three iterations of thematic analysis, highlighting multiple sources for children's interests within the family. These included: 1) participation in household and domestic tasks; parents' occupations; 2) parents' interests, talents and leisure activities; parents' language, values and beliefs; 3) grandparents' occupations, leisure activities and interests; 4) adult relations, friends and families' interests and occupations; 5) siblings and cousins' activities, interests and occupations; and 6) holidays and other community experiences (pp 195-196). Within the ECEC centre, Hedges et al. (2011) established: 1) teachers and peers' language, experiences, and 2) activities of interest to children. Within children's communities: 1) cultural events; and 2) popular-culture, were identified as significant interests for children.

The authors suggest that children's interests are not always capitalised on as the source of curriculum, primarily because teacher engagement with family members did not always

enable teachers to become deeply aware of the extent and depth of children's family and community activities. Likewise, where children's family and community interests were acknowledged, it was often the interests of the more articulate, popular and assertive children that were captured. Routines, group size and teacher-child ratios were indicated as limiting the capacity of teachers to more actively identify and engage with children's family and community interests as a source of curriculum provision. The authors argue that while funds of knowledge provide a theoretically rich explanation for ensuring learning is appropriately connected to young children's life-worlds, the ECEC curriculum remains strongly informed by centre-based activities, routines and staffing structures, even though these are indicated aspects of both process and structural quality.

Ng'asike (2014_[141]) also argues that curriculum should be generated from within children's local communities for ensuring meaning and relevance in their lives. He provided detailed examples of the knowledge associated with the Turkana community alongside that of the Kenyan ECEC curriculum. For example, knowledge of plants as a content area of the curriculum enabled meaningful learning by children engaging with known community practices, such as animal pasture and classification, fruit gathering and knowledge of drought resistance plants (p. 55). This is contrast to content provided to children in the absence of a community connection to real-world practices. Like Hedges et al. (2011_[133]), Ng'asike (2014_[141]) therefore argues for an ideological form of cognitive pluralism predicated on children's existing funds of knowledge (González, Moll and Amanti, 2005_[167]).

6. Discussion

There are three main aspects to the findings, including: 1) Categorisation of papers by research type; 2) Features of curriculum supporting process quality; and 3) Relationship between curriculum and pedagogy in ECEC. These are now discussed in turn, with findings two and three integrated into a conceptual model for leveraging curriculum as an enabler of increased process quality in ECEC.

6.1. Research papers by type

The findings from this review suggest that research concerning process quality, curriculum and pedagogy in ECEC may favour research approaches according to concept. Experimental research (6 papers) was more evident for process quality than any other type, followed by non-experimental research (3) and literature reviews (3). It is interesting to note that no discursive papers concerning the features of curriculum supporting process quality were identified. While there is significant engagement in the literature with philosophical positions concerning quality (Moss, 2016_[91]), and debate regarding the cultural relativity of quality (Whitebread, 2018_[13]), how these concerns are articulated in terms of curriculum provision are not as evident. Further work is needed to understand the extent to which quality operates as a discourse shaping curriculum provision in its own image [see, for example: Hunkin (2019_[171])], particularly in terms of the emphasis placed on adult-to-child interactions as a mode of learning in existing measure of process and global quality. Denny et al. (2012_[122]) note that measures of quality potentially shape the nature of interactions occurring between children and adults in terms of what is being measured. Reinke et al. (2019_[172]) also make this point, arguing that existing research regarding ECEC quality may inadvertently limit “teaching possibilities in multiple ways, including the privileging of certain types of education, training, or credentials” (p. 195). Where such privileging occurs, cultural variations associated with both human-to-human and non-human-to-human interactions, alongside oral language and observational learning may not be embedded in approaches to teaching and learning [e.g. Escayg and Kinkead-Clark (2018_[93]); Tiko (2017_[94])].

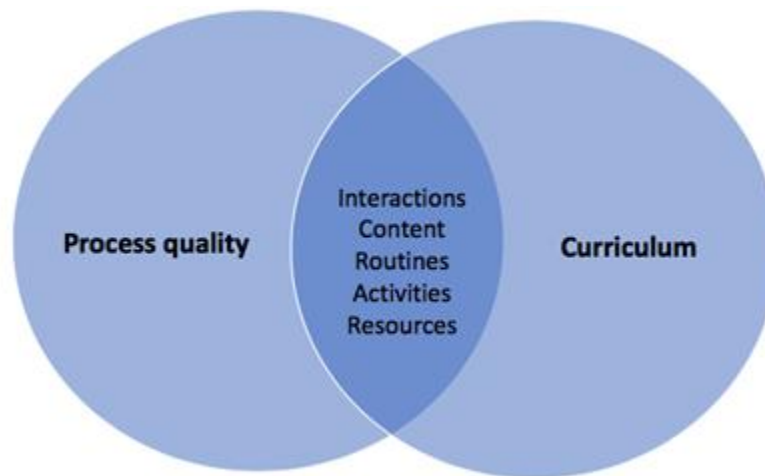
Experimental research was likely more evident in response to Research Question 1, probably due to the quantitative nature of research pertaining to ECEC quality in general. Here, established measures are consistently used as a measures of process quality, notably the Classroom Assessment Scoring System (CLASS) (Pianta, LaParo and Hamre, 2007_[55]); and those aspects of the Early Childhood Environmental Rating Scale-Revised (ECERS-R) (Harms, Clifford and Cryer, 1998_[62]) and the Early Childhood Environmental Rating Scale-Extensions (ECERS-E) (Sylva et al., 2006_[63]) concerned with process quality. These measures provide a mechanism for establishing the presence of process quality relative to different aspects of ECEC provision including curriculum, primarily because they position quality as a measurable rather than discursive construct. Klinkhammer and Schäfer (2017_[30]) argue that quality as a construct is measurable only as a function of logic in which structural quality precedes process quality, followed by process quality as a contributing mechanism for outcome quality. Burchinal (2018_[21]) recognises this issue, suggesting that where ECEC quality follows a self-determining logic, measures of quality may not focus on other known aspects of teaching and learning of significance in ECEC, including “evidence-based developmentally appropriate curricula, scaffolded learning, progress, monitoring differentiated instruction, and family engagement” (p. 6). Recent literature

suggests that children's perspectives on quality should also be more fully accounted for as an aspect of concern in ECEC (Laevers, 2017_[38]; Sandseter and Seland, 2016_[40]).

Conversely, for Research Question 2, one paper was indicated as experimental concerning the relationship between curriculum and pedagogy, compared to six non-experimental papers, and two papers each categorised as literature or discursive. This suggests potential limitations in the experimental investigation of the relationship between curriculum and pedagogy, in that any attempts to measure either concept is not well-established methodologically, at least only to the extent that aspects of both are evident in existing measures of global quality. However, it is also not surprising that non-experimental research, including interviews and case studies feature in investigations concerning curriculum and pedagogy because these concepts typically remain ideologically located (Alexander, 2008_[76]), rather than objectively defined in their presentation within the literature. Furthermore, the distinction between curriculum and pedagogy (e.g. pedagogy as subsidiary to curriculum; or pedagogy as the framework for enacting curriculum) often remains unreported in the literature. In this review, eight of the 24 papers presented curriculum and pedagogy in this way. Either not defining the relationship between the two (Burchinal, 2018_[2]; Fuligni et al., 2012_[123]), or using the concepts interchangeably (Admas, 2019_[121]; Bautista et al., 2019_[130]; Farquhar and White, 2014_[140]; Fung and Cheng, 2012_[131]; Gupta, 2015_[132]; Hedges, Cullen and Jordan, 2011_[133]). This is not a critique of the papers per se, but more recognition of the need for research moving forward to consider the distinction between curriculum and pedagogy for increased meta-level clarity regarding which ideas pertain to what and how children are taught, and how children learn in ECEC settings. (Weisberg et al., 2016_[106]) made this point in their paper, indicating that for the purpose of their own argument that pedagogy is considered subsidiary to curriculum (p. 104).

6.2. Features of curriculum supporting process quality

Five main features of curriculum supporting process quality were identified, including interactions, content, routines, activities and resources (Figure 1). It should be noted that the features of curriculum relative to process quality were primarily established by research using existing measures of quality, including amongst others the Classroom Assessment Scoring System (CLASS) (Pianta, LaParo and Hamre, 2007_[55]); Early Childhood Environmental Rating Scale-Revised (ECERS-R) (Harms, Clifford and Cryer, 1998_[62]) and the Early Childhood Environmental Rating Scale-Extensions (ECERS-E) (Sylva et al., 2006_[63]). Thus, the identified features represent to some extent the position that quality is a measurable, rather than discursive construct. Separately, each of these identified features addresses an educative function in the ECEC setting. For example, interactions as a site for co-building knowledge (Wysłowska and Slot, 2020_[125]); fostering social-emotional competency (Cooper, Hedges and Dixon, 2014_[127]; McNally and Slutsky, 2018_[129]; Öun et al., 2018_[124]); and/or developing early language skills (Denny, Hallam and Homer, 2012_[122]). Content as the material with which children engage for learning (Denny, Hallam and Homer, 2012_[122]; Slot et al., 2015_[32]). Activities as a vehicle for engaging children with content knowledge and/or enabling interactions (Burchinal, 2018_[2]; Wysłowska and Slot, 2020_[125]). Routines as the temporal infrastructure for how the day is conducted (Davis and Dunn, 2018_[128]; Fuligni et al., 2012_[123]). Finally, resources enabling children's activities and/or interactions according to the available space and materials within the ECEC setting (Admas, 2019_[121]; Cooper, Hedges and Dixon, 2014_[127]).

Figure 1. Features of curriculum supporting process quality

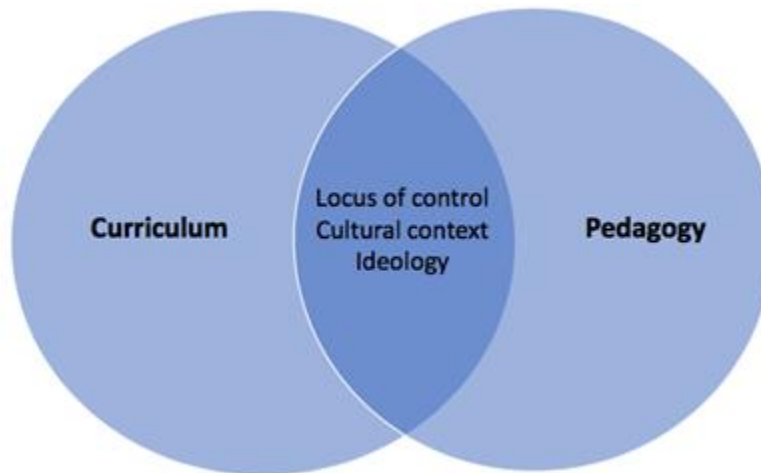
Viewed collectively, these features of curriculum suggest a means of enabling process quality with Bronfenbrenner’s (1994_[52]) early definition of proximal processes as the interactions occurring between “persons, objects, and symbols” (p. 472) in the immediate environment. For example, both content (Admas, 2019_[121]; Denny, Hallam and Homer, 2012_[122]) (Slot et al., 2015_[32]) and routines (Davis and Dunn, 2018_[128]; Fuligni et al., 2012_[123]) were indicated as important for the quality of interactions engaged in by children and adults; while activities (Burchinal, 2018_[2]) likewise informed the nature of interactions occurring between children and adults, including the extent to which these were either child and/or adult-directed (Wysłowska and Slot, 2020_[125]). It is notable that Bronfenbrenner (1994_[52]) and Sameroff (2009_[53]) emphasise interactions with objects and symbols, alongside people in the social setting, as relative to young children’s development. Here, the emphasis in the more Western-European literature [e.g. Melhuish et al. (2016_[50])], including that established through existing measures of process quality (Arnett, 1989_[56]; Pianta, 2001_[57]; Pianta, LaParo and Hamre, 2007_[55]) highlights interactions between children and adults as important for learning. In the Asian, African and global south literature (Escayg and Kinkead-Clark, 2018_[93]; Tiko, 2017_[94]; Ukala and Agabi, 2017_[95]), interactions between the human and non-human, and in oral and observational forms are consistently indicated as important for learning. Bronfenbrenner and Morris (2006_[54]) in the later refinement of Bronfenbrenner’s (1994) explanation of proximal processes argued that the most significant aspect of an interaction is the focus of attention directed towards any given behaviour within the interaction itself. It is this focus of attention that defines the developmental outcome. So as Sameroff (2009_[53]) defines the social setting as the mediator of development, so too does the later work of Bronfenbrenner and Morris (2006_[54]) indicate such mediation occurs relative to the value incurred via the focus of attention within any given interaction. Arguably, this focus may occur between children and adults, between the human and non-human, or within oral and observational forms of learning. This suggests interactions as a feature of curriculum supporting process quality should consider the developmental focus of attention within the interaction itself as culturally-situated, including capacity for adult-child interactions, interactions between the human and non-human and within oral and observational modes of learning. This reading of interactions likewise supports the finding that resources are a significant feature of curriculum enabling process quality, particularly in terms of materials and space available for learning (Cooper, Hedges and Dixon, 2014_[127]). For example, Admas (2019_[121]) shows that when resources

are limited, or ill-matched with the intended curriculum, learning opportunities for children of any type are significantly curtailed.

In this review of the literature, routines were found to occupy a significant amount of the time spent by children in ECEC settings (Cabell et al., 2013_[126]; Fuligni et al., 2012_[123]). Arguably, routines are part of the social setting contributing to children's learning and development [e.g. Sameroff (2009_[53])]. However, the findings suggest that routines are largely under-utilised as an opportunity for interactions, either with others, or in terms of available materials, particularly for pre-school aged children [e.g. Fuligni et al. (2012_[123])]. This did not appear to be the case for educators working with infants as reported by Davis and Dunn (2018_[128]) where routines were considered central to the formation of emotional relationships with children enabling learning. Interestingly, although relationships for learning via routines were considered important by these educators, emotional relationships per se were not a feature of the three curriculum frameworks considered in their research, including the Australian Early Years Learning Framework (2009_[151]), the British Early Years Foundation Stage (2017_[152]), and New Zealand's *Te Whāriki* (2017_[148]). In each of these documents, learning and development featured more heavily in textual terms than did emotional relationships. What is of interest here is that while learning and development are indicated in the nominated curriculum frameworks, the finding that routines are associated with relationships tends to align with Öun et al.'s (2018_[124]) finding in which interactions amongst children were found to be high in emotional quality but not necessarily in instructional quality. This suggests that emotionally-supportive interactions may be more likely to occur in ECEC settings than instructional interactions despite the emphasis placed on learning and development in curriculum frameworks. The identification of routines as under-utilised for learning may be addressed by paying attention to routines as a feature of curriculum enabling emotional relationship building and instructional interaction. Routines as opportunities for emotional relationship building and instructional interaction may require the direction of attention to the cultural significance of routines as a form of temporal infrastructure shaping the order and process of the day. For example, Tonyan (2015_[173]) shows how routines are embedded in culturally-valued goals for learning and development. Furthermore, given the research reported in this review suggests routines are viewed primarily as a source of learning for infants, the question must be asked, at what point in the chronological development of young children do routines cease being viewed as central for learning, whether in terms of emotional relationship building, or an opportunity for instructional interaction?

6.3. Relationship between curriculum and pedagogy

The relationship between curriculum and pedagogy was characterised by three main dimensions: 1) Locus of control; 2) Cultural context; and 3) Ideology (Figure 2). Of these, locus of control incurred substantial investigation and debate regarding the extent to which ECEC should be child-centred and initiated, adult-framed and directed, or some combination of both. For example, Cabell et al. (2013_[126]) suggested that opportunities for both large-group instruction and freely-chosen play amongst children contributed to richer adult-child interactions for learning, with this suggesting a shared locus of control amongst children and educators [see also Sproule, Walsh and McGuinness (2019_[135])].

Figure 2. Relationship between curriculum and pedagogy

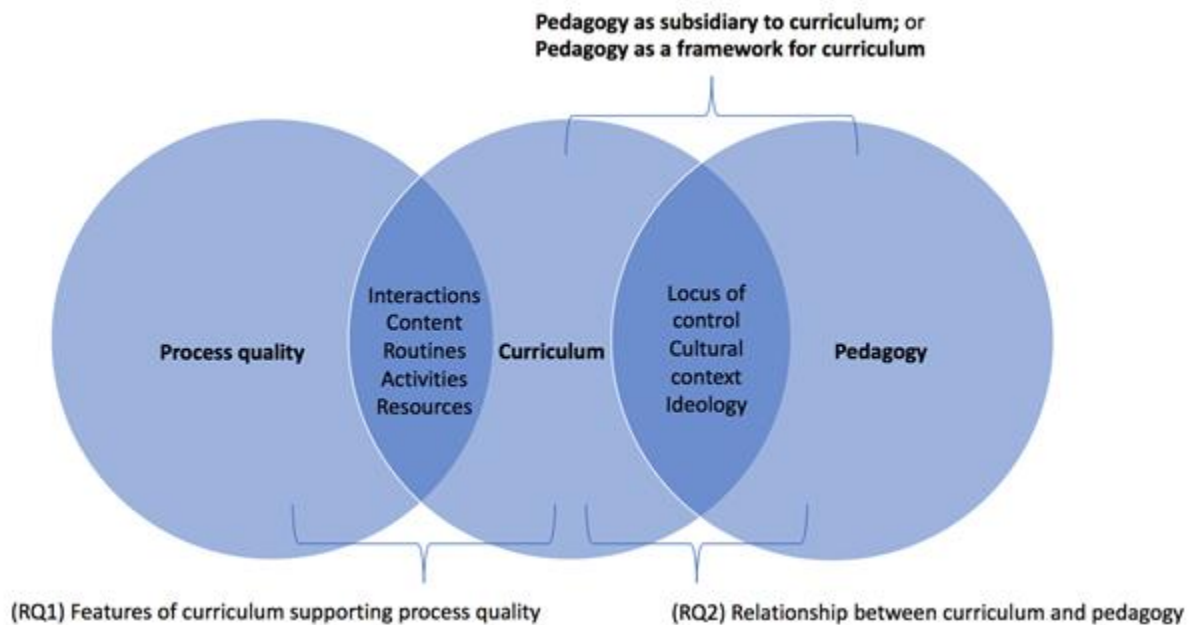
Fisher et al. (2010_[138]) and Weisberg et al. (2013_[139]) argued that play could be captured for learning via notions such as ‘playful learning’ and ‘guided learning’ respectively, with locus of control in these approaches jointly-held by children and adults. Cultural context and ideology were important dimensions in terms of locus of control, with context and ideological position shaping the extent to which arguments were made for ECEC to be child-centred, teacher-directed or an integrated combination of both. For example, Gupta (2015_[132]) and Ng’asike (2014_[141]) illustrated how Western-European concepts of play-for-learning are mediated by cultural perspectives regarding learning, extending in practice to the eventual form of enacted curriculum. Meanwhile, Rentzou et al. (2019_[134]), echoing the work of Boyette (2016_[89]), concluded that play is largely a culturally determined activity for young children, with how play is viewed (e.g. fun, relaxing, a learning activity, exploratory, creative) determining its application in ECEC settings in Denmark, Turkey, Cyprus, Italy, Estonia, Spain, the United States and Greece. Likewise, ideology was indicated in terms of locus of control. Farquhar and White (2014_[140]) argued that a political reading of the purpose of education, rather than an socio-economic reading as indicated in a significant body of research regarding ECEC quality (Garcia et al., 2016_[23]; Vandell et al., 2010_[25]), incurs a shift in the relationship between children and teachers so that the locus of control does not belong to one or the other for the purpose of knowledge acquisition, centralising instead on an ethical and creative engagement for learning from each other [see also: Ham (2019_[16])]. Hedges et al. (2011_[133]) made an important contribution showing how a cognitive pluralist ideology sheds light on young children’s genuine learning interests from a funds of knowledge perspective, rather than their interests being selected from amongst what educators are likely to provide as play and learning opportunities in the ECEC setting. Hedges et al. (2011_[133]) considered the latter to promote an adult-directed approach to ECEC under an illusion of child-centred choice. Thus, locus of control responds to the ideological position taken.

6.4. A conceptual framework: process quality, curriculum and pedagogy

The five features of curriculum supporting process quality may be integrated with the three characteristic dimensions of the relationship between curriculum and pedagogy to provide a conceptual framework for understanding the relationship between all three concepts (e.g. process quality, curriculum and pedagogy). Here, the features of curriculum supporting process quality overlap with both quality and curriculum, while the

characteristic dimensions of the relationship between curriculum and pedagogy overlap with each other (Figure 3).

Figure 3. Conceptual framework for understanding the relationship between process quality, curriculum and pedagogy



The OECD Phase II Quality beyond Regulations (2019^[31]) initiative seeks to develop process quality as an operational construct for moving beyond structural quality as a primary driver of improved ECEC internationally. Part of this development involves identifying the features of curriculum likely to support process quality in practice. While this integrative review of the literature has identified five features of curriculum contributing to process quality, these features cannot necessarily be read in the absence of understanding the relationship between curriculum and pedagogy in ECEC. The findings from this review of the literature suggest that curriculum and pedagogy are not always clearly defined in ECEC [e.g. Weisberg, et al. (2016^[106]).] Where this occurs, the capacity of curriculum to operate as a lever for process quality may be hindered because the nature of learning and teaching intended within a given ECEC setting, service, or national context more broadly, may not be clearly established. Therefore, if curriculum is to be used as a lever for process quality, it is first necessary to establish the relationship between curriculum and pedagogy, defined in this paper according to one of either two main forms: 1) Pedagogy as subsidiary to curriculum (Jung and Pinar, 2015^[72]); or 2) Pedagogy as a framework for the enactment of curriculum (Ligozat and Almqvist, 2018^[74]).

Establishing this relationship is important because the ideological position informing the locus of control within either curriculum or pedagogy may be identified according to culturally held expectations and values for learning, including those associated with the role of play and play-based learning (or otherwise) in ECEC. For example, Gupta (2015^[132]) and Fung and Cheng (2012^[131]) found that cultural values and expectations for learning mediated curriculum provision in practice via pedagogical adaptations by educators seeking to align curriculum expectations with locally-held, and historically

significant, beliefs about learning. In contrast, those authors operating from a more implicit acceptance of play as culturally viable for learning argue for a combination of child-centred and adult-supported locus of control (Fisher et al., 2010_[138]; Sproule, Walsh and McGuinness, 2019_[135]; Weisberg, Hirsch-Pasek and Golinkoff, 2013_[139]). The advantage of interpreting locus of control according to cultural context is that the features of curriculum supporting process quality (e.g. content, interactions, routines, activities and resources) may be deployed according to the requirements of the socio-cultural situation in which they are located. There is enough evidence in the literature to suggest that content, interactions, routines, activities and resources are likely to be relatively stable features of curriculum in ECEC settings internationally [e.g., Weiland, et al. (2017_[174])]; especially where interactions are defined as those occurring between children and adults, the human and non-human, and within oral and observational forms of learning (Escayg and Kinkead-Clark, 2018_[93]; Melhuish et al., 2016_[50]; Tiko, 2017_[94]; Ukala and Agabi, 2017_[95]).

The findings from this review of the literature suggest significance for better understanding the extent to which these features of curriculum support process quality in a manner that is culturally-specific rather than universal in their implementation. This finding aligns with the work of Slot et al. (2015_[32]) suggesting that moderators for quality in ECEC settings are country specific. Moreover, the significance of recent concern regarding the role of Western-European approaches to ECEC in the global south should be considered in the provision of quality ECEC for all young children. A strong body of literature, including papers captured within the remit of this review (Bautista et al., 2019_[130]; Fung and Cheng, 2012_[131]; Gupta, 2015_[132]; Ng'asike, 2014_[141]) suggest that addressing the cultural limitations incurred by a globalised approach to ECEC curriculum and pedagogy is now timely (Agbenyega, 2013_[17]; Flear and van Oers, 2018_[11]; Saavedra and Pérez, 2018_[12]; Whitebread, 2018_[13]).

Conclusion

This paper considered the relationship between process quality, curriculum and pedagogy via an integrative review of the literature. The findings from the review suggest that process quality, curriculum and pedagogy are investigated using diverse research approaches, with process quality mainly examined using empirical research, and curriculum and pedagogy via non-empirical approaches. More discursive considerations of process quality may be necessary to expand notions of quality in curriculum terms beyond what historically-used measures of process quality can capture in ECEC settings. This need is increasingly evident in the indigenous and global south literature [e.g. Ritchie (2016_[14]); Pérez and Saavedra (2017_[91])] arguing that the learning needs of all children are not well represented by these measures. New constructs for the empirical investigation of curriculum and pedagogy beyond those currently focussed on process and/or global quality may therefore be required. However, the development of these constructs depends on how curriculum and pedagogy are relationally defined in the first instance.

This paper identifies two main forms of this relationship: 1) Pedagogy as subsidiary to curriculum; and 2) Curriculum as a framework for pedagogy. The findings suggest that defining this relationship is important for enabling curriculum as a lever for process quality in that the locus of control for learning and teaching may be culturally and ideologically established. Where this is established, the features of curriculum identified in this paper as supporting process quality (e.g. interactions, content, routines, activities and resources) are likely interpreted and enacted according to the requirements of the socio-cultural context in which ECEC itself is designed and provided for young children. Such an approach signals a movement aligned with the contemporary research literature concerning the cultural relativity of core concepts in ECEC, including those of play, learning, development (Gupta, 2020_[96]), and of specific interest to this paper, that of quality ECEC provision (Fenech, 2011_[31]; Sheridan, 2009_[175]). This may speak to the movement beyond a linear conception of structural, process and outcome quality towards an interpretative understanding of quality encompassing children's perspectives and acknowledging the inherent value-position associated with quality as a measurable construct. This position is well-developed by Klinkhammer and Schäfer (2017_[30]), who argue that:

“Quality is viewed as a multi-perspective, discursive and modifiable construct while also referencing the classic quality model (input, output, outcome) central within the effectiveness/impact measurement approach, which in this reading is not based on rigid definitions of quality. Instead, it is recognized that the understanding of quality and its creation in practice are not governed by strict principles but are dependent on their contexts and stakeholders in the broadest sense. The understanding of quality is subject to ongoing processes of negotiation and creation at all levels of an ECEC system” (p. 11)

However, while quality may be contextually defined, and thus open to negotiation and creation on multiple levels, it remains the case that quality should operate in the best interests of young children, including the use of curriculum as a lever for process quality. Finally, this paper directs attention to the under-utilisation of routines as a feature of curriculum supporting process quality via relationship building and/or as a site for instructional interactions between children and adults.

Implications

Considering the three main findings reported in this paper, the following implications for research, policy and practice are identified:

Research

1. Increased non-empirical and discursive research attention directed towards understanding the impact of process quality as a discourse shaping globalised understandings of curriculum compared to localised, country-specific needs.
2. Increased empirical investigation via comparative research establishing the definition of curriculum and pedagogy held by various ECEC stakeholders (e.g. service providers, policy makers, children, educators, families) in the design and implementation of ECEC internationally.
3. Empirical and non-empirical consideration of the cultural significance of routines in young children's learning in ECEC settings; including the possibility for increased instructional interactions during routines, and the age-point at which routines cease being viewed as critical for learning from an infant perspective as children move into higher levels of ECEC provision.

Policy

1. Clear direction defining curriculum and pedagogy in terms of their relative position to each other (e.g. pedagogy as subsidiary to curriculum; or curriculum as a framework for pedagogy) for informing the locus of control for teaching and learning from an ideological and cultural perspective in ECEC.
2. Nominated orientation towards how the features of curriculum supporting process quality, including content, interactions, routines, activities and resources are determined according to country-specific requirements and cultural beliefs about learning, including that of play (or otherwise) in ECEC.
3. Increased recognition in curriculum documents, guides to practice, initial teacher education, and continuing teacher education of the cultural significance of routines in young children's learning in ECEC settings, including routines as opportunities for promoting relationships for learning and instructional interactions between children and adults.

Practice

1. Ensure opportunities for educators to understand and interpret the relationship between curriculum and pedagogy in ECEC, including that of the approach used in their own cultural context in initial and continuing teacher education.
2. Educators interpret interactions, content, routines, resources and activities for young children according to socio-cultural context, developing educational relevance in educational opportunities for all children.
3. Educators pay attention to the conduct of daily routines in ECEC settings, noting how these may be capitalised on for emotional relationships and increased opportunities for instructional interactions between child and adults, continuing in the early childhood years beyond infancy and toddlerhood.

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