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THE OPEN UNIVERSITY

Faculty of Wellbeing, Education and Language Studies

ELEONORA TESZENYI

FEATURES OF MULTI-AGE PRACTICE AND  
ADULT-CHILD INTERACTIONS: AN  
EXPLORATORY STUDY FROM HUNGARY

Submitted in part requirement for the degree of Doctor of  
Philosophy

Submitted: October 2022

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Eleonora Teszenyi, October 2022

## ABSTRACT

It is well-documented that multi-age grouping is a frequently implemented organisational strategy in early childhood settings across the world. So far, it has received mixed reviews based on the developmental outcomes for children. However, there is relatively little known about the complexities of teaching and learning in such environments and how the approach is experienced by its participants. Given the high and growing prevalence of multi-age groups nationally in Hungary, this study set out to explore what features characterise multi-age practice, both reported and enacted, with a sharp focus on the nature of adult-child interactions.

Taking a social-constructivist stance, the study employed a mixed method design involving 28 participants. Practice was observed, using semi-structured observations and researcher field notes, and views were elicited by employing the Q-method, which consisted of rank ordering 48 statements and follow-up semi-structured interviews. A phased approach to analysis generated four practice clusters and four reported shared views.

Corroborative analysis of the two sets of findings focussed on how group age-diversity was harnessed and/or forgone. As the study's unique contribution, four classes of multi-age practice, and correspondingly, four kinds of adult-child interactions were identified offering a taxonomy of multi-age practice.

Findings interpreted using the bio-ecological Person-Process-Context-Time model (Bronfenbrenner and Morris, 2006) indicate that both the 'family-centred relational' and the 'adult-led intentional' practice consistently harnessed age-diversity potentially leading to generative proximal processes. This was far outweighed by the 'adult-centred incidental' and the

'confused homogenising' practice, where the potential of multi-agedness was mostly forgone, potentially leading to inverse proximal processes. In the absence of explicit policy on group organisation in Hungarian Early Childhood Education and Care, the study points to imperatives for national systems of pre-service training and a widely embedded and nuanced understanding of a multi-age educational philosophy through appropriate in-service training, so enhancing early childhood practice.

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#### GLOSSARY OF Q-METHOD TERMS IN THIS STUDY

Concourse	The overall universe of statements on a given topic, the corpus of existing knowledge and experience. The Q-set is sampled from the concourse.
Condition of instruction	Explanation of the context (condition) within which participants should consider each statement in the Q-set. The instruction guides the Q-sort.
Confounding Q-sort	A Q-sort that loads significantly onto more than one factor within the factor solution
Consensus statement	Areas of agreement or convergence between the distinct shared views
Crib sheet	A tool to gather together all relevant information to support a structured and holistic interpretation of an identified viewpoint
Defining sort	A Q-sort with an after-rotation factor loading which is greater than a predefined significance value; significantly associated with a dominant view
Distinguishing statement	A statement which is ranked in a significantly different fashion to the other identified (extracted) viewpoints
Eigen value	A value which provides the explanatory power of a view, indicative of the viewpoint’s statistical strength
factor	A shared viewpoint that the study participants held in common
Factor analysis	The statistical means of analysis by which participants are grouped, compressing the complexities of views
Factor array	factor specific distribution of the ranked items and it is in the form of an ideal Q-sort representing 100% of that particular viewpoint
Factor interpretation	An explanation of the shared viewpoint (often through using a crib sheet)

Factor loading	A value that represents how closely a defining sort approximates that view
Factor solution	The final number of rotated factors/views that reasonably explain the convergence and divergence of views
Factor value	Refers to the ranking of a statement within a factor array (from -5 to +5)
p	factor loading; the minimum significance level is 0.01 ( $p < 0.01$ )
P-set/P-sample	The sample of participants
PQMethod	A software that computes Q data and carried out Q analysis
Q-set	The full collection of the final statements drawn from the concourse; participants rank these statements during the Q-sort
Q-sort	A ranking exercise that places a set of statements (Q-set) into place value positions between -5 and +5
Salient statements	Statements ranked highest and lowest in a particular viewpoint
Varimax factor rotation	A rotation of extracted factors (shared views) according to mathematical formulae to ensure the viewpoints were suitably focused

#### LIST OF ABBREVIATIONS

BERA	British Educational Research Association
CI	Cluster
EC	Early childhood
ECEC	Early Childhood Education and Care
EECERA	European Early Childhood Education Research Association
F	Factor
HAS	Hungarian Academy of Sciences
MA	multi-age
OECD	Organisation for Economic Cooperation and Development
P	pedagogue
PPCT	Person-Process-Context-Time
SA	same-age
ST-TA	Structured-tabular thematic analysis
TA	Thematic analysis
UK	United Kingdom
UNICEF	United Nations International Children's Emergency Fund (now: United Nations Children's Fund)
ZPD	zone of proximal development

*Everything has been thought of before,  
The difficulty is to think of it again.*

*Goethe (n.d., cited in Bronfenbrenner, 1979:vii)*

## PART ONE: INTRODUCTION

Multi-age practice is not a new or unknown phenomenon. It dates back to the one room school houses of the 19<sup>th</sup> century (Goodlad & Anderson, 1959). Echoing Goethe's words from the above quote, multi-age practice and education has been researched before in various contexts across the world and this thesis invites the reader 'to think of it again', but in the context of early childhood practice in Hungary and with a focus on interactions between children and adults.

## CHAPTER ONE: INTRODUCTION

This opening chapter introduces the topic of my research, explains why it is important, and offers a context. The aims are identified, my position as a researcher outlined, and key terminologies used throughout this thesis are explained. The final section of the chapter signposts to what lies ahead.

The study reported in this thesis focuses on twenty-eight Hungarian pedagogues' practice in twelve multi-age groups across four kindergartens. It examines reported and enacted characteristics of multi-age practice with a specific focus on adult-child interactions.

### 1.1 Context

Internationally, there has been a strong focus on recognising early childhood education and care (ECEC) as a distinctive phase in children's learning (Moss et al., 2016; Urban, 2015). A strong drive for investing in high quality provision for the youngest of children has also been noted (Organisation for Economic Co-operation and Development (OECD), 2006, 2011, 2016), which has brought with it an intensified debate about what constitutes effective pedagogy and practice in ECEC (Wall et al., 2015).

Dahlberg and Moss (2005) assert that the social construction of EC practice is set within a particular socio-political context. Recognising differences in what is inherited and differences in local circumstances in terms of

demography, geo-political and historical contexts are key in properly understanding the differences between teaching approaches cross-nationally (Alexander, 2012). Early childhood programmes and curricula differ depending on the expectations for what young children should learn and how they should experience it (Fleer, 2015). One key aspect of this is the grouping of children as structural forms and the pedagogic practice that corresponds with it.

Although the age-stratified approach seems to dominate across the world in terms of group organisation (Ansari, 2017; Veenman, 1995), multi-age practice is not a new endeavour and there appears to be a renewed interest in multi-age education both in Europe and across the world (Ansari & Pianta, 2019a; Justice et al., 2019; Ritland & Eighmy, 2012; Rouse, 2015). Multi-age groups differ from single-age groups both in their composition of children, which typically spans between two to three years, and the teaching methods employed (Broome et al., 2015; Purtell & Ansari, 2018). A multi-age pedagogical approach pivots on the idea that chronological age is not the most important factor when decisions are made about teaching and children's learning. It is not delineated by age, rather, it takes place across the ages, and at children's individual pace (Stone, 2010), where they are given the choice as to how they manage their time in their learning (Casserly et al., 2019; Cornish, 2010).

Hungary is a relatively small country in Central-Eastern Europe with a population just under 9.7 million, quarter of which is in the capital city, Budapest. Multi-age groups have been in practice in kindergartens since the early 1990s in Hungary (Török, 2015). Prior to that, and during the time of socialism (1948–1991) in particular, single age groups were the accepted model of group organisation. School starting age is six (which can be extended to seven), but kindergarten attendance is compulsory from the age of three, which secures one of the highest enrolment rates among the OECD countries (96% for four-and five-year olds) (OECD, 2019). The aim of this policy is to compensate for social disadvantages as the average child spends seven and a quarter hours a day in a kindergarten (Széll, 2014; Török, 2015). The workforce, who are referred to as kindergarten pedagogues throughout the thesis, are largely state employees who



complete a qualification equivalent to a Bachelor's Degree (Podraczky, 2012). They work with assistants, who are currently not required to have any formal childcare qualifications (Oberhuemer et al., 2010). Typically, two pedagogues and one assistant work with a group of 22-25 children (Campbell-Barr, 2016; Oberhuemer et al., 2010), which sets the adult-child ratio at approximately 1:12 with the assistants not counted in the ratios. This applies to both single- and multi-age organisation.

In half of the OECD countries, participation in ECEC for children over three years of age is over 90%. Hungary is one of the nine countries with the highest enrolment rates at 95%. Kindergartens are state funded with minimal, or no contribution required from families. Hungary spends 0.7% of its national resources on children over three enrolled in ECEC and primary education which puts it above the OECD average of 0.6% (OECD, 2019). Kindergarten attendance is mandatory from the age of three with the school starting age being six or seven years and pedagogues working in kindergartens receive a tertiary three-year higher education training with 2500 placement hours. Degrees were introduced for those working in kindergarten settings in 2009 (Oberhuemer et al., 2010).

One of the most significant geo-political influences on Hungarian ECEC was the dominance of the Soviet Union after the end of World War II. ECEC provision was governed by a centralised Soviet system, which was claimed to be dictatorial pushing aside national values and any attempts to develop a strong national identity (Nagy Varga et al., 2015). The Soviet Union and its satellite countries were good examples of how governments shaped pedagogical understanding. Early childhood had an 'iconic status' (Penn, 2011:16), children were placed in the centre of the social, political and economic re-making of society and they were viewed as an embodiment of a new social order (Silova, et al., 2017). The socialist state had the expectation of extreme conformism and active engagement in the building of a 'bright' socialist future. Kindergartens were to nurture a new generation of Soviet citizen, who were to be shaped by socialist political ideals, values, beliefs and behaviours (Millei et al., 2019; Millei & Imre, 2016). This translated to collective tasks and learning together as a community. With conformity as priority, group goals were set, therefore, no child could be

individualistic, nor fail because of a collective approach to learning. The group was more important than the individuals in it (Bronfenbrenner, 1971; Kirschenbaum, 2001).

Yet, Penn (2011) posits that the extent and coherence of the Soviet ECEC system was unmatched by any other non-communist system. Kindergartens adopted a holistic approach, which was interpreted and implemented in a vastly different way from systems in English-speaking countries (Penn, 2014). Focus and attention extended to children's health and physical well-being through monitoring diet, incorporating rest, sleep and regular exercises into children's daily lives, and a wide range of professionals offered regular health checks and advice to families (paediatricians, dentists, psychologists and nurses). Government funded kindergartens provided a comprehensive and co-ordinated system of early education and care, which reflected a significant societal investment in children (Penn, 2011, 2014; Vágó, 2005).

Socialism ended with the Russians withdrawing the last of their troops in June 1991, and following the collapse of communism in Europe, Hungary became a democratic state again. The first ten-fifteen years were characterized by a decline in state ownership, consequently the growth of the private and service sectors, and an increase in foreign investment accompanied by rising unemployment and poverty. One of the main instruments of these changes was the decentralization of governmental responsibilities, financing, and decision-making (Brayfield & Korintus, 2011; Campbell-Barr & Bogatić, 2017), which contributed to the economic strain of local authorities to allocate sufficient funds for the institutional care of very young children, despite of the rapid decline in the birth rate (Hungarian Central Statistical Office, 2017). After the fall of communism, kindergartens saw their work devalued and pedagogues had limited career opportunities (Urban et al., 2012).

Just as kindergartens were representative of the socialist ideals during the Soviet era, after the fall of communism they also represented what was wrong with socialism. This included rigid hierarchies, conformity, unsustainable expenditure and corruption. Amidst the radical political and economic changes and in the face of market economy competitiveness, it

became paramount that the collective was to be replaced by an individualised way of thinking. Westernised ideas started to flood the country influencing the many facets of society, including early education (Millei, 2011; Nagy Varga et al., 2015). However, socialism, as a social and cultural phenomenon, did not disappear overnight. In cultural practices in everyday life, 'a sense of perpetual liminality (as a deeply felt, lived paradox) became the underlying condition (Jelača & Lugarić, 2018:5). Children of that era, still today, remain bound to their particular national landscape, and they treat narratives of change and progress with ambiguity. The unfinished business of socialism still has its influence felt at each level of the education system in Hungary (Józsa et al., 2018; Silova et al., 2017).

Kindergartens' work is governed by the National Core Programme for Kindergarten Education (Ministry of Human Resources, 2019), which remained largely the same since its inception in 1996. It lays down the core principles and fundamental values of care and education for children 3-6 years old. Embedding these, each kindergarten is required to develop their own local programme to reflect the needs of their local communities (Campbell-Barr, 2016).

### 1.2 Rationale, motivation and research question

Whilst early childhood, as the first tier of the education system in Hungary, reflects the developments across Europe, a particular aspect of Hungarian practice is evolving for which research is relatively scarce. This is in respect of the steady growth of the early learning model that involves multi-age groups. Although the number of multi-age groups has increased by 10% nationally over the last decade (Központi Statisztikai Hivatal [Central Statistical Office], 2017; Török, 2004), multi-age practice has had mixed reviews in relation to both pedagogy (Ádám & Hegedűs, 2019; Teszenyi & Hevey, 2015) and outcomes for children (Török, 2004).

Therefore, my research examines the complexities associated with teaching and learning in multi-age kindergarten groups in the Hungarian study context. My motivation was fuelled by (i) being a Hungarian national specialising in ECEC in the United Kingdom (UK) and (ii) tracking the development of ECEC policy and practice in Hungary over twelve years

through annual study trips organised for Early Childhood Studies degree level students.

The main question for Hungarian ECEC practice in multi-age groups is what the features of such practices are. This research is designed to elicit pedagogues' views as well as to identify practice characteristics as observed so that the relationship between the two can be established. Therefore, the main aim for this study is:

*To examine features of pedagogic practice in multi-age environments in the Hungarian kindergarten context.*

### 1.3 The aim and significance of my study

In the field of education, the claim that research should inform practice is at the forefront of discussions, so is the concern for how research can reach practice (Biesta et al., 2019; Urban, 2008). As Biesta and Aldridge (2021) draw attention to the contested nature of the relationship between research, theory and practice, they challenge the assumption that the gap between research and practice is a problem. Instead, Biesta (2007, 2020) proposes that a degree of critical distance between them, on the one hand, ensures that both are able to retain their autonomy, and on the other, that practice is not subsumed by research, rather, it is informed by it.

Through my research work, I had the intention to inform early educational practice in the Hungarian context; however, there were limitations to this ambition. As Urban (2008) highlights there are distinct layers of epistemological hierarchy in the educational field: at the top, academic research produces a body of knowledge, which is transferred through pre- and in-service training; and at the bottom, it is applied in practice. This does not only place practitioners (and practice) at the bottom of the hierarchy, but also reinforces the distinction between education theory and educational action, even when it is recognised that there has always been theory-in-action through practice (Biesta & Aldridge, 2021). Taking my lead from Biesta et al.'s (2019) argument for a strong steer towards research that produces useful knowledge, my study aims to answer questions raised within and in relation to multi-age practice in Hungary. Nevertheless, my study was not conducted as a means of solving a problem. Rather, I asked critical questions, highlighting what might be missing and 'creating

understandings across differences rather than producing evidence to direct practice' (Urban, 2008:135).

Therefore, my study is poised to fill a critical gap by focusing on the complexities associated with practising in multi-age groups and the distinguishing features of such practices. My research agenda focused on the thoughts and actions of the participating pedagogues. I aimed to construct new knowledge through novel analysis and coming to an understanding through theorising of how age-diversity is thought of and worked with. This is where my project can be positioned. This exploratory study has enabled me to join the international debate around multi-age pedagogic practice and to add to what we know about the multiple realities of adult-child interactions in multi-age environments.

#### 1.4 Researcher positionality

In social sciences, including education, it is suggested that research is subjective, political, and capable of producing many truths rather than universal facts (Grieshaber, 2010:195). This is because 'people are not only in the world but also with it' Crotty (1989:149), which suggests that the object of investigation is never separate from the researcher. In my study, I have investigated the complexities of multi-age practice in the Hungarian context whilst recognising the difficulty in separating the context of exploration (what it is I want to study and how it should be done) from the context of justification, where I attempt to interpret the information gathered and to explain the social, cultural, and historical processes involved. I also recognise that not only am I not separate from my study, but also my interpretation remains fluid and never complete (Hammersley and Atkinson, 2007).

My observations were neither 'carried out from outside the arena of the observed' (Guba and Lincoln, 1989:12), nor did I experience my research without the influence of personal and professional, internal and external drivers outside me (Guba & Lincoln, 1998). My positionality is discussed in Chapter 4.8.2 but here it is important to state that I write as a female from a white Hungarian/British background. I was educated to degree level in Hungary, I speak Hungarian as my mother tongue and English as my second language.

My personal journey that may have contributed to choosing multi-age practice to be the focus of my PhD study started with me as a child growing up in socialist Hungary with a younger brother. We both attended kindergarten in two separate same-age groups, and I found the daily separation from him very difficult. In my teaching posts I enjoyed working with children of mixed ages in mixed Reception, Year 1, and Year 2 classes. As a university lecturer, I organised annual field trips to Hungary for students to experience, first-hand, a different approach to early education and care, where we observed multi-age kindergarten groups for children between three and seven. It was the exact opposite of what I had experienced as a child, and I instantly became curious about it. I chose to examine parents' views on multi-age practice for my Master's level study and my motivation continued from there.

My past experiences place me into a precarious insider-outsider position (Denzin & Lincoln, 2013; Savvides et al., 2014) which remained fluid and constantly negotiated throughout the study. Therefore, reflectivity and reflexivity had been a critical element of my research.

### 1.5 Terminology/ concept clarification

Some specialist terminologies are used throughout this thesis which are defined in this sub-section to avoid assumptions and to ensure shared understanding with the reader.

**Early Childhood Education and Care** (ECEC) is used throughout for the educational provision and opportunities provided for children in institutions and by professionals during the earliest years of their lives. ECEC is a term used by the European Union and also by the Organisation for Economic Co-operation and Development, adopted internationally, and recognised widely in systems of education across the world (Oberhuemer et al., 2010; OECD, 2016). The term emphasises that care cannot be distinguished from early education: in the context of care, educational matters arise and early education needs a caring approach (Vandenbroeck, 2011) and care-full pedagogies (Luff & Kanyal, 2015).

Instead of 'early educator' or 'early years teacher', the term '**kindergarten pedagogue**' is used for the early childhood professionals working with children between the ages of three and six in institutions that the Hungarian language refers to as 'óvoda', widely translated as kindergartens. (The word

for word translation is 'the place where the protection of children takes place'). The terminology is reflective of Hungarian ECEC being closer to the social pedagogical approach than the pre-primary infant school approach because it combines 'care, upbringing and learning without hierarchy', rather than focusing on school subjects and teaching to measurable outcomes (OECD, 2006:59). Correspondingly, the core professionals undertake 'pedagogically-oriented, university-level, academic professional education' (Oberhuemer et al., 2010:485), which has similarities to the social pedagogue qualifications (McDowall-Clark, 2016; Penn, 2011).

A variety of terminologies are used in extant literature to a group organisation or structural form that intentionally combines children of different ages in a single group (for example, mixed-age, multi-age, combination/composite, family, age-heterogeneous, vertical groups) (Aina, 2001; Ansari & Pianta, 2019a; Pardini, 2005; Veenman, 1995). In this thesis and for the Hungarian context I am using the phrase '**multi-age groups**' to refer to a group of children where the age span is at least 3 years and the purpose of combining the ages is pedagogically founded -not an economic necessity (Sims, 2008; Smit et al., 2015). They are 'formed for their perceived educational benefits' (Veenman, 1995:319) to foster a culture that is modelled on caring families and nurturing communities (Broome, 2016), and where children spend a minimum of three years with their peers and the same pedagogues. Due to the broad range of ages and abilities collaborative peer learning opportunities are deliberately planned for, where individual needs, talents and interest are taken into consideration rather than standardising the learning experience (Katz et al., 1993; Ritland & Eighmy, 2012; Stone, 2010).

### 1.6 The structure of the thesis

In the four parts of the thesis the chapters are organised to create a narrative, which is progressively developed taking the reader from the aim of the research to the justifiable assertions at the end through presenting evidence and arguments that aim to answer the research questions.

Following on from this introductory **Part One**, Chapter One, **Part Two** provides the background for the study. This includes four chapters: Chapters Two and Three contain the review of literature, which help position my study in the context of what research had been done before and how multi-age

practice is thought of currently. Chapter Two introduces multi-age practice and traces its origins, and Chapter Three identifies dominant and alternative theoretical perspectives from which multi-age practice is examined. Chapters Four outlines the methodological design of the study and Chapter Five explains and justifies the methods employed for data generation (observations for enacted practice and Q-method for eliciting views) details the analytical processes including considerations for ethics, translation and my insider-outsider status brought about by the cross-cultural, bi-lingual nature of the study.

**Part Three** is the core of this thesis, concerned with my own empirical contribution, providing the evidence base for new knowledge to be created in subsequent chapters. Chapter Six outlines the observational findings, Chapter Seven summarises the Q-findings and Chapter Eight brings together the two sets of findings.

**Part Four** draws together interpretations of the findings and what is learnt about multi-age practice through this project. Chapter Nine discusses the results, which is framed by the Process-Person-Context-Time (PPCT) model developed from his bio-ecological theory (Bronfenbrenner & Morris, 2006). Finally, the study aims and research questions are revisited, the project is evaluated and conclusions are drawn in Chapter Ten.



## PART TWO: BACKGROUND TO THE STUDY

This second part of the thesis provides the background for my study and consists of four chapters: two chapters detailing the review of related literature (Chapters Two and Three), and another two providing the explanation and justification for the methodological design and the data generation and analytical procedures (Chapters Four and Five). The literature review chapters contextualise Hungarian ECEC policy and practice and the educational change since Hungary emerged from the control of the Soviet Union and examine various theoretical perspectives that have contributed to our understanding of multi-age pedagogic practice worldwide. This looking out has no intention to compare or polarise (Alexander, 2001); rather, it facilitates gaining a broader perspective, questioning taken for granted ideas and acknowledging that the features of multi-age practice I am examining in this project are not universally shared (Georgeson et al., 2013).

### CHAPTER TWO: Literature Review – INTRODUCING multi-age practice and TRACING its origins

#### 2.1 Literature search procedures

For the review of related literature, my search covered studies that examined multi-age practice in lower primary and pre-primary settings to ensure coverage up to the age of 7 years. Sources written both in English and in Hungarian were examined. No restrictions were put on the location (databases) of the studies or the year of publications. There appears to be substantial amount of literature and research dating from the 1970's to the late 1990's, less literature available for the following two decades and a new wave of research after 2010. Hungarian sources are limited with the majority dating back to 2004 and before with a small number of publications written more recently in English. The combined searches resulted in 446 research papers, 418 of which were in English and 28 in Hungarian. This limited literature found in Hungarian suggests that there is a paucity of empirical research focusing on multi-age practice in Hungary. Of the sixteen Hungarian pieces of literature selected to review, only two were based on empirical evidence, studies by Ádám and Hegedűs (2019) and Teszenyi and Pálfi (2019). The rest were practice-focused articles predominantly in the

periodical style publication 'Kindergarten Education' [Óvodai Nevelés], which, is not an academic journal.

The total of 126 studies in English and 16 in Hungarian noted for their usefulness were in relation to:

- The reasons for adopting a multi-age grouping strategy
- The features of multi-age instruction and its influence on teaching and learning processes, pedagogic strategies employed
- Challenges and barriers to multi-age practice
- Stakeholders' views on multi-age practice

The subsequent sections have two principle aims: 1) in Chapter Two, to illuminate cultural, geo-political, historical, and ideological aspects of the local and global contexts for multi-age education, and 2) in Chapter Three, to explore and analyse the understandings of multi-age practice worldwide through highlighting theoretical perspectives that inform these interpretations. These include developmental, socio-cultural, cultural-historical, social learning and ecological theories.

## 2.2 The field of study -Early Childhood Education and Care (From the Global to the Local)

As Tobin et al. (2011) explain, early childhood education and care (ECEC) settings hold a significant and revealing position in each society: this is where familial upbringing crosses paths with institutional care, where parents and professionals meet in sharing responsibility for the care of their children and where the needs for both women's participation in the labour markets and, consequently, for children to be educated and well cared for are accommodated.

In 2015, the United Nations identified a target for universal early childhood education by 2030 in one of its seventeen Sustainable Development Goals (United Nations, 2015), which triggered increased focus on and unprecedented growth in ECEC provision globally (Murray, 2016; OECD, 2016, 2019; Orlović Lovren et al., 2019; Shuey & Kankaraš, 2018). The rise in early childhood services in the past decade and the higher enrolment rates appeared to be in countries where there was an increase in women's employment (OECD, 2018).

ECEC gained more prominence as a policy area in most of Europe in the 1970s and policy makers attention turned to the economic aspects of early childhood education during the economic crisis of the 1980s, which coincided with the collapse of socialism as the Russians withdrew the last of their troops in June 1991. Sufficient childcare provision was identified as necessary conditions for economic growth (Vandenbroeck et al., 2016). In Hungary, after the nationalisation of kindergartens in 1948, the country saw a substantial expansion of childcare provision (Korintus, 2008), which resulted in 92% of five year olds attending kindergartens by 1985. This allowed an increasing number of women to gain paid employment and the country to meet the European Union Barcelona target of 90% of children between the age of three and the mandatory school age to be in childcare.

Although the types of care provision available for families varies greatly across the world, a common pattern emerging is an average of 8% increase in the enrolment for children under the age of three in most countries the OECD holds data for (OECD, 2019). This is quite the opposite in Hungary, where ECEC represents a split system. Provision for children under three is in nurseries (historically under the Ministry of Health) and for over three in kindergartens, both under the auspices of the Ministry of Human Capacities (OECD, 2019). Nursery provision for children under three is limited and under-utilised, only 17% of the youngest of children participating, which is the sixth lowest in the European Union. This may be due to the long standing common belief that babies' and young children's needs are best met by their mother in the family home in their first years of life (Morabito & Vandenbroeck, 2020) and promoted by the strong rhetoric about the significance and priority of parent-child attachment (Brayfield & Korintus, 2011). Social policy and maternity/paternity leave entitlements also make it possible for parents to take 24 months, during which they are paid 70% of their previous salary, and a further year at a fixed rate financial support, which is typically lower (Józsa et al., 2018; Korintus, 2008).

### [2.3 INTRODUCING Multi-Age Practice: From the Global to the Local](#)

This part of the review draws on historical, geo-political, ideological and cultural aspects that have bearings on how existing multi-age kindergarten practice both in Hungary and globally has developed.

### 2.3.1 The origins of multi-age groups

According to Goodlad and Anderson (1959:vii), the roots of multi-age practice goes back to the one room school houses worldwide, and they introduced the modern notion of 'non-graded elementary schools' in the United States based on their realisation that age cannot be an indicator of what learning experiences children are ready for at any given time and stage in their development. As part of the educational debate of the 1990s, both Miller (1995:28) and Katz et al. (1993) highlighted the 'erroneous assumption' that a single curriculum could suit the needs of all children of the same age, by which they offered justification for the superiority of multi-age organisation. During school reforms and the restructuring of education in the 1980s and 90s considerable efforts have been made to champion multi-age and multi-grade education in many parts of the world. Non-graded classes re-emerged (Gerard, 2005) and the multi-age group organisation shifted the aim from meeting the needs of the group to the needs of the individuals, and both chronological and developmental characteristics were taken into consideration in the teaching and learning processes (McClellan & Kinsey, 1997; Stone, 2010, 2009).

In Hungary, the origins of multi-age groups goes back to 1828, when the first kindergarten opened its doors to children between the ages of one and nine, where they were cared for in age-heterogeneous groups. During the following hundred years, groups gradually became age-homogeneous mirroring the organisational pattern of schools. Throughout the late 1980s and early 1990s, the decreasing birth rate due to demographic changes resulted in some kindergartens starting to offer multi-age groups (Tigyi Pusztafalvi, 2013).

The political history of Hungary also shaped its early childhood provision in that the inevitable changes following the collapse of socialism and the shrinking Soviet influence brought along an openness to pedagogical pluralism (Campbell-Barr et al., 2015; Penn, 2011). Some alternative approaches started to appear in Hungarian ECEC, for example, the Waldorf or Montessori approaches, which required multi-age groups (Villányi, 2012). Similarly, fourteen country-specific alternative programmes were accredited in and after the 1990s including the Complex Prevention Program, the Play-Movement-Communication program, for example, and they were all

recommended for multi-age groups (Bakonyi, 1995; Teszenyi and Pálfi, 2019).

### 2.3.2 The presence of multi-age practice worldwide

There have been and there are examples of multi-age practice adopted as pedagogic preference across the world, and these are outlined in this subsection to provide a backdrop for the occurrence of multi-age practice in Hungary. Globally, the extent of the multi-age reality is difficult to assess for two main reasons: firstly, information is not collected as routinely as in single-age groups (Little, 2004); secondly, because the terms 'multi-age' and 'multi-grade' are used synonymously and often inter-changeably. Therefore, the examples presented below include both multi-age and multi-grade provision to give a sense of the extent to which multi-age education is present globally.

The reviewed literature evidenced a surge of interest in multi-age organisation since the 1980s in the United States. It was promoted to boost achievement and became part of the class size reduction initiative (Sims, 2008). Since 2009, approximately 75% of classrooms had been multi-age in the Head Start Programmes (Ansari et al., 2016; Moiduddin et al., 2012), however more recently, the No Child Left Behind Act (No Child Left Behind Act, 2002) with its testing and monitoring requirements for specific grade level standards, has brought with it a significant reduction in multi-age classes. Nevertheless, current research work shows renewed interest in the multi-age philosophy and its implementation in the United States (Ansari & Pianta, 2019a; Justice *et al.*, 2019; Purtell & Ansari, 2018).

In Australia, lower primary schools are reported to have adopted multi-age grouping (De Lemos, 2001; Ronksley-Pavia et al., 2019), and Rouse (2015) acknowledges a greater emphasis on the multi-age organisation in long day care centres due to a shift towards a socio-cultural pedagogic approach to young children's care and education. Further examples of multi-age practice are evidenced from Europe. A rapid increase was reported in Sweden in the 1980s and 90s (Lindström & Lindahl, 2011), in Austria between 2000 and 2010, and more recently in Dutch early childhood centres (Helmerhorst et al., 2015). In the Netherlands in 2004, schools changed from the graded system to the multi-age organisation for its child centredness in response to the federal government's requirements (Stone, 2004). British infant schools

in the late 1960s voluntarily adopted vertical grouping for the ages of five and seven (Mycock, 1967) and multi-grade teaching is also implemented in Switzerland, Spain, Finland (Smit et al., 2015) and in Ireland, (Quail and Smyth, 2014). As part of the Education For All agenda, school reforms introduced multi-age instruction in the global South to improve children's learning (Little, 2006; McEwan, 2008).

In Hungary, multi-age practice started to appear in the 1990s, shortly after the collapse of the Soviet regime – as mentioned in section 2.3.1 - when ideological and pedagogical changes began to take place. (Further details of the socialist ideology and its connection with group organisation is provided in Chapter 4.4.) National statistics evidence a gradual increase in the number of multi-age kindergarten groups from 53% in 2004 (Török, 2004a) to 62% in 2017, which amounted to 9,146 of the total of 14,879 kindergarten groups across the country (Hungarian Ministry of Human Capacities, 2018). It is interesting to note here that from the academic year of 2016/17 the Central Statistical Office in Hungary no longer collects data about the number of multi- and same-age groups, which makes it difficult to ascertain if this upward trend is currently continuing.

Today, although not always very clear whether for demographic or pedagogical reasons, kindergartens operate with both types of group organisation, some exclusively with same- or mixed-age groups and some offer both. Currently, there is no specific regulatory requirement (or subsidiary guidance) for kindergartens on the model of group organisation (Teszeyi & Pálfi, 2019) and the National Core Programme for Kindergarten Education makes no specific recommendations in this regard (Ministry of Human Resources, 2019). Individual settings can interpret this framework very broadly and develop approaches to fit their local contexts (Campbell-Barr et al., 2015), which includes the grouping model they adopt.

### 2.3.3 'Combining the ages' vs practising with a 'multi-age philosophy'

The review of related literature consistently suggests that multi-age groups or classes are implemented for two main reasons: either out of necessity or choice (Ansari, 2017; Little, 2001, 2004; Mulryan-Kyne, 2007; Veenman, 1995). As mentioned above, assigning children to multi-age groups or classes can be a result of economic necessity taking a pragmatic approach to group arrangements in order to utilise available resources more efficiently

(Berry & Little, 2006; Saqlain, 2015; Smit et al., 2015). This economic necessity can derive from various factors, including fluctuating enrolment numbers due to demographic circumstances unique to individual contexts (Proehl et al., 2013), difficulties with staff recruitment and retention (Aksoy, 2008; Ramrathan & Ngubane, 2013), cost cutting exercises (Sims, 2008) and the extension of educational provision globally (Benveniste & McEwan, 2000; United Nations Educational, Scientific and Cultural Organisation, 2015).

When multi-age education is implemented out of pedagogic choice, it is often informed by the belief that it is pedagogically superior to its age banded counterpart (Bailey et al., 2016; Leuven & Rønning, 2016; Stone, 2010) or because it aligns with the pedagogical principles of particular curricula such as the Montessori. However, a multi-age educational philosophy is more than just assigning varying ages of children to the same group. Simply put, multi-age groups differ from same-age groups in two ways: in their composition of children and the teaching methods employed (Broome et al., 2015; Lindström & Lindahl, 2011; Song et al., 2009). When combining the ages is treated as an administrative rather than a pedagogical task, the assumption and expectation that every child of the same age perform at the same level tends to persist and the teaching methods are very similar to those in same-age groups. In this case, as Aina (2001) and Cornish (2010) suggest, there is no point in mixing the ages because children are still taught primarily with their age group or are expected to engage in tasks individually.

The reviewed literature calls for careful pedagogic considerations with regards to the composition of multi-age groups, their component ages as well as the age span. The latter was recommended to be a maximum of two (Justice et al., 2019), two to four (Smit et al., 2015) or three years (Hoffman, 2003; Lillard, 2016; Pardini, 2005) depending on contexts. There are also examples of even wider age spans, such as the Russian Golden Key Schools, where children between the ages of three and ten learn together in their multi-age 'family groups' (Doherty, 2012, Parker-Rees, 2011:7).

Employing teaching methods when working with a multi-age philosophy is informed by the idea that chronological age is not the most important factor to consider when teaching young children (Roberts and Eady, 2012). What

multi-age grouping is able to accommodate is the pace at which children make advancements: it is not delineated by age but by each child's own rate of development (Stone, 2009). Learning takes place across the ages (Smit et al., 2015) in a 'minimally invasive education environment' (Cozza, 2017:xvi). The curriculum is adjusted to fit the learner's needs and children are given choices as to how they manage and use their time in their learning (Casserly et al., 2019; Cornish, 2008).

#### 2.3.4 Challenges to the wider implementation of multi-age practice

The presence of multi-age education and practice is globally felt. Whether it is considered an 'outdated strategy' or 'timeless best practice' (Ritland & Eighmy, 2012:170), there appear to be challenges to its wider implementation. The analysis of related literature generated five groups of these: lack of training, lack of resources, the influence of implicit versus explicit policies, lack of community understanding, and personal aversion. These will be discussed next.

It is extensively noted in research literature that multi-age instruction is underrepresented (if at all present) in pre-and in-service teacher *training*, primarily because the standard curriculum is designed for single-age classes (Hardman et al., 2016; Heins et al., 2000; Hyry-Beihammer & Hascher, 2015). There appears to be an urgent cry for ongoing professional development or coaching that is specifically tailored to the needs of multi-age education, specifically how to facilitate peer learning, multi-level assessment in an integrated curriculum (Broome et al., 2015; Cornish, 2006; Taole, 2017). Ansari and Purtell (2018) emphasise that professional development for multi-age teachers is a worthwhile investment.

Lack of varied levels and types of *resources* is another barrier (Smit & Engeli, 2015). Physical resources, equipment and educational trips are often distributed by grade and combining these effectively requires the event or resource to be removed from the grade it is associated with (Proehl et al., 2013). Lack of administrative resources due to the higher bureaucratic demand are often aligned to how records are kept. Progress is more difficult to track via standardised test results and annual assessments when age- or grade-banded boundaries are blurred. Parallel recording systems need to be in simultaneous operation, which do not fit neatly into what might be



considered as traditional single-age or grade organisational forms (Ritland & Eighmy, 2012; Song et al., 2009).

Most educational systems today reinforce the notion that curricula and classes are organised hierarchically, and children pass through them in order. This seems to be what Ball (2006:49) calls 'the regime of truth', which leads to 'an unchallenged permanency in the way things are done' (Llewellyn Greenfield, 2011:53). When there is no explicit *policy* to determine what organisational strategies schools or early childhood settings should adopt, the accepted ways of doing things implicitly influence practices. Because these implied policies are not openly stated, they are less likely to be challenged and, therefore, more resistant to change, which in turn makes any alternative forms of organisation, other than the single-age, very difficult to implement (Song et al., 2009).

The lack of *community* understanding, and *scepticism* are also recognised as barriers to the implementation of multi-age education. The fear of the unknown or being ill-informed about the pedagogical aims of the programme appears to be the biggest issue (Saqlain, 2015; Smit & Engeli, 2015; Taole, 2017). A certain degree of *aversion* to multi-age teaching was also reported because it was perceived as more challenging and demanding, both emotionally and cognitively, with planning and preparation requiring more time and differentiation presenting a heavier workload (Mariano & Kirby, 2009; Mulryan-Kyne, 2004, 2007). Berry (2003) found that teachers would go as far as choosing to teach a large single-age class than a smaller multi-age class, although choice was often taken away and practitioners were assigned to multi-age groups (Broome, 2009). Ansari and Purtell (2018) suggested that teachers with higher qualifications were better placed in multi-age classes as they were better prepared to support the progress of individual children rather than focusing on curriculum requirements that expect them to move through the various stages in a linear and hierarchical manner.

Although there has been evidence of multi-age education in many parts of the world since the beginning of public education, there does not appear to be an upward or consistent trajectory for multi-age practice that is adopted by pedagogic choice. In light of the widespread dominance of single-age

organisation in curriculum and assessment design, it is not surprising to find that the many challenges and barriers create a handicap for those seeking to implement multi-age practice. However, to reap the pedagogical benefits of multi-age education, the challenges could also be viewed as opportunities with ongoing support and professional development reinforced locally, nationally or indeed internationally.

#### 2.4 TRACING multi-age practice in history: Standing on the shoulders of giants

It is suggested that there is an increasing need to recognise the historical and philosophical contexts and how they shape the way early childhood approaches develop (Campbell-Barr and Bogatić, 2017; Jarvis, Swiniarski and Holland, 2017). Nutbrown and Clough (2014:3) assert that understanding the histories of the past on which today's education and care provision stands not only provides a 'rootedness' but also helps trace back to where philosophical ideas and practices began. With this in mind, here, a brief overview of influences on the development of multi-age practice from the past is presented and then, in Chapter Three, various theoretical perspectives from which MA practice could be considered. There appears to be a long-standing developmental discourse that is dominant in ECEC worldwide, whereas the social learning, socio-cultural, cultural-historical and ecological perspectives contribute to what Moss (2018) refers to as alternative discourses. These major theoretical schools of thought are of significance and interest to the current study because they influence both how multi-age practice is understood and implemented. Therefore, having introduced the concept of multi-age practice, the purpose of this literature review and analysis from this point onwards is ~~manifest~~ (i) to draw on and engage with extant knowledge; (ii) to locate my study within the historical and contemporary context of relevant theories and research; (iii) and to refine and develop the research questions.

Multi-age practice traces its roots back to some of the early childhood pioneers whose philosophies have influenced the development and persistence of multi-age education till the present day. Their pedagogical ideas about early childhood practice and early learning are shared globally and interpreted locally (Georgeson, Payler and Campbell-Barr, 2013; Campbell-Barr and Bogatić, 2017). They provide pedagogical anchors, and some prominent figures such as Johann Heinrich Pestalozzi (1746-1827) and

Maria Montessori (1870-1952) are among those whose pedagogic principles are still enduring in EC practice globally and locally in Hungary. Particularly noteworthy and relevant to the focus of this study are key ideas around children developing at their own pace, differentiated instruction, learning from one another, and collaborating in communities of mixed ages. These ideas help us understand key tenets of multi-age education and multi-age practice today.

Historically, principles of teaching in multi-age environments enabled each child to make progress at their own, unhurried pace, mastering skills through trial and error (Pestalozzi, 1777; Montessori, 1988). There was also a recognition for the adult's role in providing differentiated instruction which started from what the child already knew and led by a chain of carefully graduated ideas (Pestalozzi, 1885). Montessori's (1976) auto-didactic materials, for example, were designed for differentiated multi-sensory learning to enable children in their multi-age classrooms to teach themselves at a pace that suited them.

Some of the pioneers of early education appreciated the occurrence of the mix of ages they felt every community had (Montessori, 1976; Gutek, 1999) and believed it was possible to teach children of varying ages in a familial environment (Guimps, 1897; Nutbrown & Clough, 2014). In fact, Montessori (1976) rejected the idea of children being isolated in their age groups for learning in favour of the multi-age organisational model. Pestalozzi's school served as what we may call today as a boarding school for children (often from the same family) and he developed his elementary method based on how a mother brings up her children (Pestalozzi, 1894). In a Montessori setting's multi-age community, kindness and 'profound affectionate interest in class mates' (Montessori, 1997:155) contributed to the 'cohesions of the social unit' (Montessori, 1988:212). Peer support happened spontaneously while children and adults strove to interact with grace, empathy, courtesy and respect at all times (Montessori, 1966).

Advocates of the multi-age organisation, like Pestalozzi and Montessori, broke the mould and went against the dominant trends of education of their time (Nutbrown and Clough, 2014; Valkanova, 2015). They worked with multi-age groups at a time when notions imposed by the industrial

revolution such as the factory model, batch processing and uniformity were opposed to their ideas. What connects their theoretical and pedagogical legacy is their endeavour to educate the whole child at a pace that suited the individual through meaningful interactions with both the environment, peers and caring adults in age heterogeneous communities.

## CHAPTER THREE: Literature Review – Theoretical UNDERSTANDINGS of multi-age practice

Ideas on education and care in early childhood, whether from the past or more recent times, whether shared globally or locally, have implications for professionals' daily practice with young children. How multi-age education is implemented is determined by what is valued for young children and by the beliefs held about teaching and learning in early education (Moss et al., 2016; Moss, 2018). What practitioners do in their daily practice 'is linked to what, and how, they know' (Luff and Kanyal, 2015:174). Therefore, the purpose of these next five sub-sections is to explore these beliefs, theoretical positions and hence to locate the multi-age phenomenon in its intellectual home.

### 3.1 Dominant and alternative discourses in ECEC

The current dominant discourse in ECEC is what Moss (2018:10) calls 'quality and high return', which claims that early childhood is the best age to invest in for yielding high returns in human capital later. However, the investment model of early education in preparation for economic contribution is widely contested (Campbell-Barr & Nygård, 2014; Moss, 2017; Osgood, 2015). This dominant discourse is located in a largely positivist paradigm and draws on two main disciplines: developmental psychology and human capital economics (Moss et al., 2016; Sims et al., 2018). It tells a story that is 'instrumental in rationality, technical in practice and economic in concept' (Moss, 2014/2019b: xiii). It values objectivity and certainty, claims universality and sees the child as a knowledge producer (Moss, 2007, 2017). Its primary concern is predefined developmental outcomes and what approach works to achieve them (Biesta, 2007). The language of this discourse, including 'quality', 'benchmark', 'best practice', 'school readiness' reflects a Western view of childhood and of what is being valued in the profession in English speaking countries (Conkbayir & Pascal, 2014; Fleer, 2003). Moss, (2014/2019b: xiv) and his contemporaries, therefore, lobby for a critical attitude, for 'making the dominant narratives stutter' and provoking thought by highlighting alternative possibilities that are less concerned with outcomes and more interested in processes.

As the review of related literature presented in the sub-sections below demonstrates, MA education is examined from a variety of theoretical perspectives. Developmental research literature dominates approximately twenty years before and just after the turn of the century. Two major studies from Pratt (1986) and Veenman (1995) offer a meta-analysis of 86 pieces of research, which suggests that empirical support for multi-age education is inconclusive; some claiming benefits for children, some reporting on negative effects and others suggesting no significant difference between the outcomes for children in same-age or multi-age groups. More recent research, however, tends to focus less on the developmental outcomes for children and turns to socio-cultural theories in understanding and interpreting multi-age organisation and practice, bringing the role of peers and adults to the fore in the learning processes (for example, Broome, 2016; Murphy & Doherty, 2016). One recent study from Purtell and Ansari, (2018) also use a bio-ecological lens to examine proximal and distal processes involved in multi-age early education.

The subsequent sections offer greater detail of this briefly outlined development in thinking and discusses the theoretical perspectives from which multi-age practice is examined: first from a developmental perspective, then from a social-constructivist viewpoint through Bandura's social learning theory in section 3.3.1, and the socio-cultural and cultural-historical theories in sections 3.3.2 and 3.3.3. These aim to offer alternative frames of reference for understanding multi-age practice, leading to a justification for adopting Bronfenbrenner's bio-ecological theory of development for this study for enabling me to examine how the context, personal characteristics and time interact, therefore, impact on adult-child interactions as a key part of proximal processes in a multi-age learning environment (section 3.4).

### 3.2 Developmental theory

Developmental psychology offers one of the ways of understanding children, practitioners and their care and educational practice (Edwards, 2007; Edwards et al., 2009; Walsh et al., 2010). Dahlberg & Moss (2005:7) assert that it does this by 'representing, classifying and normalising ... through its concepts' by which aiming to offer a universal scientific guide as to who the child is, what he can do at a certain age and stage of development and how

to support him in reaching those stages. If applied, the implementation of these instructional strategies is certain to produce predetermined outcomes.

This outcome approach works under the assumption that norms exist, against which children's abilities are measured. However, Burman (2001) warns that this quasi-scientific status of norms may prescribe practice that focuses on measurement and evaluation and any deviation from this norm is considered either a problem or a deficit. The field of early childhood seems to have a historical commitment to developmentalism, where developmental milestones are considered as scientific facts, which shape practice and determine the way practitioners engage with children (Edwards, 2007; Edwards et al., 2009).

However, Tharu (2007:248) cautions that recent developments in the field of psychology, child development and learning theories seem to 'reinforce the notion that classes and curricula be organised hierarchically and that all children should pass through them in order'. This suggests a linear, lock-step blueprint mostly suited to single-age organisation. As many educational systems worldwide are predicated on this principle, it creates a consequential handicap for all other possible systems and for those alternative narratives mentioned above (Benveniste & McEwan, 2000).

### 3.2.1 The developmental impact of multi-age groups

A body of literature published since the 1970s offers some insights into how multi-age groups in early childhood settings are believed to influence developmental outcomes for children. Much of this research was conducted prior to the 1990s, although there appears to be a revival of research on the influence of multi-age grouping in the last two decades. Some studies report benefits, others suggest negative effects, and some conclude that there is no significant difference between children's development whether they are in multi-age or same-age groups. These will be examined in this section.

### 3.2.2 Positive impact

Thirty studies, that aimed to compare the developmental outcomes in various developmental domains in single- versus multi-age groups between 1948-1983, were evaluated by Pratt (1986), who drew the conclusions that although there were no consistent academic advantages of same-age groups, affective and social advantages of multi-age grouping were evidenced. Further and more recent studies also report positive peer effects

on social development in multi-age contexts (Bailey et al., 2016; Stuart et al., 2006) with a specific mention of older peers modelling higher levels of impulse control to safeguard positive interactions (Logue, 2006).

When research studies compared multi-age environments with their single-age counterparts, they proved conducive to faster development in both the cognitive (Bailey et al., 1993; Fosco et al., 2004; Winsler et al., 2002) and language domains with greatest gains in vocabulary growth (Guo et al., 2014; Justice et al., 2019) and higher receptive and expressive language ability noted for younger children (Mashburn et al., 2009). Mariano and Kirby (2009), and Leuven and Rønning (2016) also found that pupils in multi-age classes outperformed their peers in single-age classes in Norway.

### 3.2.3. Negative impact

Negative developmental impact is also reported in Moller et al.'s (2008) large scale study examining the relationship between group age composition and developmental change in the social, cognitive and motor domains in 70 urban pre-schools. They concluded that a wide range of ages within a classroom negatively influenced development, particularly for older children, who developed at a slower rate than their peers in same-age groups. Younger children, on the other hand, did not seem to be significantly affected by the classroom age composition. Mariano and Kirby's (2009) quasi-experimental analysis of cognitive outcomes produced similar findings.

A series of studies from Arya Ansari and his co-researchers consistently reported negative developmental associations with multi-age groups. In their 2016 study of children from low income families in Head Start programmes (Ansari et al., 2016), they found that multi-age groups had a negative impact on four-year olds' academic achievement. In a subsequent study, Ansari (2017) confirmed again that, for five-year olds, a multi-age environment provided fewer academic gains in maths and literacy skills and less optimal executive function. Ansari and Purtell's (2018)'s larger scale study, again in Head Start settings, over two consecutive years found that children, who moved from classrooms with largely older peers in their first year to classrooms with largely same-age peers during their second year, demonstrated greater academic gains than children who spent both of their years with mixed-aged peers. The continuity of caregiver, which they recognise as the hallmark of mixed-age grouping, did not mitigate against



these negative effects. Similarly, Ansari and Pianta (2019) report that mixed classroom age composition positively influences four-year-old children's executive function when they experience early learning with a greater number of older peers.

#### 3.2.4 No significant impact

A much referenced key study of the developmental impact of multi-age organisation is Veenman's (1995) meta-analysis of 56 pieces of research from 12 countries, which suggested that there were no significant differences between single-age and multi-age groups. Similarly, in his study (which accounted for characteristics at child, family and school level) Thomas (2012) found that there was no difference in educational outcomes between those first graders who were taught with their same-age peers and those who were in multi-age classes. Neither did Bell et al. (2013) report that the age composition of a group affected the rates of change in school readiness for children in Head Start programmes. Further research evidence of no significant impact is provided by Quail and Smyth's (2014) study findings drawn from mathematics and reading test scores.

#### 3.2.5 The inconclusiveness of research findings

The above examples demonstrate the inconclusiveness of these findings on the developmental impact of multi-age grouping, which is partly due to the variation in class or group sizes and their composition as well as the inconsistent and interchangeable use of terms makes it difficult to differentiate between multi-age and/or multi-grade contexts in these studies. Further reasons for this inconclusiveness were included in the limitations identified in the research projects reviewed: (i) the lack of distinction between multi-age organisation as a result of necessity or choice (Little, 2004; Veenman, 1995); (ii) selection bias (gender, socio-economic background, ethnicity), where the sample is not representative; (iii) lack of control over the quality of teaching as often, better or more experienced teachers are assigned to teach in multi-age classes (Ansari et al., 2016; Moller et al., 2008); (iv) working with a number of variables in laboratory or quasi-laboratory settings (Winsler et al., 2002) or quite the opposite, in more naturalistic settings with small localised samples (Bailey, et al., 1993; Mashburn et al., 2009; Justice et al., 2011; Guo et al., 2014); (v) bias due to reliance on teachers' reports of children's abilities in multi-age classes (Guo et al., 2014).

The conflicting evidence suggests that it remains unclear whether children developmentally benefit from being in multi-age groups and if they do, whether this is for the older or the younger children or both.

### 3.2.6 Multi-age as Developmentally Appropriate Practice (DAP)

Assigning children to same-age or multi-age groups is claimed to be rooted in development theory, which govern what is called 'developmentally appropriate practice' (DAP) in early childhood education and care (Copple & Bredekamp, 2010; National Association for the Education of Young Children (NAEYC), 2009). Developmental theories and a range of empirical findings had been assimilated into the twelve foundational principles and practice guidelines for DAP (NAEYC, 1987), which were designed as a 'framework for best practice' (Copple and Bredekamp, 2010:1) or as 'a set of handy prescriptions' (Penn, 2014:13) to help early childhood educators make developmentally appropriate decisions based on their knowledge of child development and learning and their knowledge of the individual child's strengths and abilities (Casper & Theilheimer, 2010; Lowrey, 2010; Mede, 2016).

For the last twenty years, critics of the developmental approach have argued against the fact that the body of developmental knowledge is regarded as scientific facts which, by the power of its validity, determines what children, practitioners and parents do (Edwards et al., 2009; Grieshaber & Cannella, 2001; Ryan & Goffin, 2008). Furthermore, Walsh et al. (2010) also feel that, in its pedagogy, DAP takes an overly maturationist approach to children's development, the consequence of which is that practitioners are encouraged to adopt practices that wait for development to 'occur', instead of appropriately guiding children in their learning. They are also concerned that there are mixed interpretations of DAP among practitioners, which stems from the tensions between effectively implementing a developmentally appropriate curriculum while maintaining and ensuring overall progress towards predefined goals.

Penn (2011) also critiques DAP for its developmental assumptions on early learning for three main reasons: firstly, that age-related learning serves as a fundamental principle when working with young children; secondly, that learning opportunities are designed around individuality, therefore, co-

operative activities are side-lined; thirdly, because children's learning is governed and paced by adult intervention and practitioners must be 'intentional' and know what they are trying to achieve.

Implemented in multi-age groups, DAP focuses on the developmental age of the child, not his chronological age. Given that children of the same chronological age are likely to vary in their 'readiness to learn', this variation is further pronounced in a multi-age environment because of the representation of two or three chronological age bands together (Aina, 2001; Fosco et al., 2004). It is therefore, suggested that DAP offers a way of engaging with children, where individuals make continuous progress at their own pace (Copple & Bredekamp, 2006; Heins et al., 2000). However, in concluding her research in a multi-age outdoor environment, Rouse (2015) queried whether DAP is congruent with a multi-age philosophy. She found that separating children by their age and/or stage of development into micro single-age groups still dominated the way practitioners planned for and implemented experiences for young children. Reid et al., (2019) also raised concerns about categorizing practices as being either developmentally appropriate or inappropriate, when conversations could more usefully focus on what children need to be able to engage in learning understood as cultural processes in the various contexts across time and place.

This section of the literature review has analysed and attempted to disentangle the controversial literature on the developmental impact of age mixing in an early education and care context. Although reasonably widely researched globally, there continues to be a lack of congruence in findings on the developmental impact of group composition. Advocacy for the developmental theory is strong, so is the voice that invites perspectives on early education to look beyond the developmental discourse and generate a more diverse knowledge base that helps construct ideas about childhood and practice in different ways. The lasting effect of this developmental discourse is highlighted by Fler (2015) and Wood (2010), who caution that an understanding of children against a developmental continuum can position some individuals to be seen in deficit terms. Additionally, both Tobin (2005) and Biesta (2007) question whether practice, that is highly and almost exclusively informed by research from developmental psychology, really

does work with young children and whether it only reflects a one-sided view, which can quite easily be taken for granted as standard.

An important question surfacing through the review of literature so far is whether the developmental theory is appropriate for my study in Hungary. It is criticised for ignoring cultural differences, nuances and complexities (Brown & Lan, 2014; Hatch et al., 2002), which is key for my research due to its unique historical and geo-political context. Therefore, exploring further theoretical perspectives outlined in the next sections aims to expand on and illuminate a more diverse understanding of multi-age practice to help me explain and rationalise my chosen theoretical framing.

### 3.3 Socio-cultural-historical perspectives

Examples of alternatives to the developmental narrative are the socio-cultural-historical perspectives, which reflect a significant shift in thinking about early learning and development and how children and childhood are viewed. Practice seems to move away from the focus on measuring children's developmental outcomes, towards models of working with children, where

... our images of what a child is, can be and should be, must be seen as the social construction of a community of human agents, originating through our active interaction with other people and with society.

(Dahlberg et al., 2006:62)

The roots of the emergence of this alternative discourse can be traced back to Bandura's (1977) theory of social learning, Rogoff (1990, 2003) and Vygotsky's (1978) socio-cultural and the Vygotskian (1929) cultural-historical theories of development mainly because they underscore what peer effects literature also suggests, that children's peers can significantly influence children's learning (Ansari, 2017; Ansari & Pianta, 2019b; Choi et al., 2018; Fleeer, 2015). They value the contributions children of varying ages bring to a group of learners without focusing on the developmental levels associated with their different ages (Edwards et al., 2009). While the social learning theory (Bandura, 1977) emphasizes the role of participation through observation in the learning process, Vygotsky (1978) and Rogoff (1990) posit that social interaction in the various cultural and social contexts, particularly through dialogue with another learner, is pivotal to cognitive gain and intellectual growth,. The cultural-historical theory

highlights children's development through participation in community activities as adults and children share and pass on cultural tools (Vygotsky, 1978). In the three sub-sections the relevance of these theories to multi-age practice is discussed.

### 3.3.1 Bandura's social learning theory

Bandura's (1977:vii) social learning theory acknowledges that human behaviour can be 'markedly influenced' by both observation and direct experience in the context of reciprocal interaction between 'cognitive, behavioural, and environmental determinants'. Peer effects literature claims that peers can and do affect children's learning (Ellis et al., 1981; Justice et al., 2011; Mashburn et al., 2009). Application of these theories in multi-age groups provide an environment where children can engage in observational learning through modelling, with models provided by adults or children or both (Doherty, 2012; Hoffman, 2003; Justice et al., 2019; Stone, 2009). Therefore, children's learning is governed by four processes: (i) attentional processes which include children attending to and perceiving the significant features of the modelled behaviour and extracting what is relevant to them (Bandura, 1977); (ii) retention, whereby the child stores behavioural patterns in memory via imagistic or verbal representational systems (Bandura, 1986); (iii) motor reproduction processes, which are the conversion of symbolic representation to actions (Bandura, 2001); (iv) motivational processes, where interest in the modelled behaviour provides a child with an incentives to imitate accurately (Bandura, 1977; 2000).

Response facilitation in Bandura's (1977) theory of social learning also plays a significant part in the annual renewal of a multi-age group community. Modelling actions of older children can serve as social clues or prompts for eliciting new arrivals' pre-existing behaviour (Bandura, 1986). Instead of observational learning, the disinhibition of socially acceptable and approved behaviour takes place. Younger children's responsiveness increases as they observe their peers' positive emotional expressions or approval of their behaviour (Stone, 2009).

Multi-age groups foster more creative modelling, and innovative behavioural patterns can emerge when children are exposed to more diverse models. Observers combine varying aspects of the different models and adopt various combinations of the behaviour that is modelled. As the composition

of multi-age groups change each year with the oldest children leaving and new children arriving, successive modelling takes place (Kinsey, 2001; Moller et al., 2008). Children, who have previously been observers through legitimate peripheral participation (Lave & Wenger, 1991), could serve as models for new members of the group producing a 'gradual imitative evolution of new patterns' (Bandura, 1977:48) that may or may not resemble the actions of the original models. In this way, children contribute to the features of a multi-age learning environment, not only the product of it (Bandura, 2000, 2006).

### 3.3.2 Socio-cultural theory

The socio-cultural theory suggests that children's participation is crucial for their learning and development because they grow as they participate in the endeavours of their communities (Rogoff, 1997, 2003), which can provide a theoretical framing for understanding children's multi-age communities in early childhood settings. Children of mixed-ages interacting with each other, 'with the assistance of others' (Vygotsky, 1978:90), who act as 'mediating agents' (Kozulin, 2003:17), stimulates internal developmental and

[a]ll higher mental functions [which]...are internalised social relationships... Their composition, genetic structure and means of action – in a word, their whole nature- is social. In their own private sphere, human beings retain the functions of social interactions.

(Vygotsky, 1931 in Wertsch & Stone, 1985:166)

Less sophisticated competences lay the foundations for more sophisticated ones, the novice begins by copying experts (Meadows, 2017). 'Teaching', in a Vygotskian sense, is the a process of co-construction in learner-centred activities (Verenikina, 2004), and according to Rogoff (2003) teaching is understanding and building on children's lived experiences (Rogoff et al., 2018).

Bringing children of mixed ages together assumes heterogeneity of chronological age, maturity, prior learning, socio-cultural experiences, interests and abilities (Hoffman, 2003). Therefore, it requires practitioners to adopt a multi-age philosophy, which goes beyond the technical skills of simply mixing the ages (Hyry-Beihammer & Hascher, 2015) and rests on the assumption that children's learning is directly influenced by their peers. Age composition shapes the learning environment, and the multi-age organisation offers continuity that enables strong relationships to develop

learning communities that is conducive to children of varying ages learning from one another through peer modelling, peer tutoring with greater levels of differentiation from skilled adults. How well this is done is reflected in how practitioners interact with children, how they plan and organise the learning environment and what instructional strategies they employ in the following three key aspects of practice: classroom organization, community and culture building, and teaching and learning processes (Ansari & Pianta, 2019b; Cozza, 2017; Pianta & Hamre, 2009). In the subsequent sections these three key aspects are discussed.

#### *Classroom organisation*

In multi-age groups practitioners employ organisational strategies, which capitalise on the age-heterogeneity of the group in order for multi-age teaching and learning to succeed (Cozza, 2017). These are: balanced group configuration, flexible grouping, and the flexible use of space and resources (Hoffman, 2002; Hyry-Beihammer & Hascher, 2015; Taole, 2017; Tiernan et al., 2018). When multi-age practice is implemented as a pedagogical choice, group composition is also considered as a matter of pedagogy and the ratio of younger to older children is carefully balanced (Ansari et al., 2016). The age span in these age heterogeneous learning communities is typically three years (Hoffman, 2003; Pardini, 2005), however, in much of the reviewed literature there is lack of clarity as to the composition of the group and the age range multi-age groups straddle (as was discussed in section 2.3.3).

The implementation of *flexible grouping* is achieved by a variety of configurations ranging from individuals working alone, partners or small groups together to whole group work where the configuration is kept fluid (J. Broome, 2016; Hyry-Beihammer & Hascher, 2015; Taole, 2017). The fundamental principle of grouping children flexibly is that it promotes pro-social behaviour and cognitive growth (Casserly et al., 2019). Stability is achieved by *routines* and a predictable flow of everyday activities, which enable children to be independent and to take responsibility for constructing knowledge rather than waiting for adults to bring it to them (Benveniste & McEwan, 2000; Mulryan-Kyne, 2004).

'The hallmark of multi-age classrooms is their *collaborative environments*' (Hoffman, 2002:52), which offer spatial dimensions that provide for choice and trust in the ability to make own decisions. Flexibility of time and space

allow for free movement and hands-on, non-competitive learning, where resources can be combined and transported from one space to another (Cozza, 2017; Stone, 1998, 2004).

#### *Community and culture building*

Gmitrová and Gmitrov (2004) claim that one of the strengths of multi-age groups is the consistency in relationships over time and the extended period of contact with the same practitioner (Edwards et al., 2009; Kappler & Roellke, 2002), which is referred to as '*looping*' in the US. This affords greater level of satisfaction with the educational experience and positive relationships generating healthy attachments (Franz et al., 2010; Hitz et al., 2007). Closer practitioner-parent relationship builds closer connection between the home and the setting, a strong sense of continuity and relational trust, which, in turn, cultivates a family-like environment (Aðalsteinsdóttir, 2008; J. Broome, 2016; Katz, 2014; Kinsey, 2001). Because of this, settling-in is more relaxed and less rushed with older children and siblings having a unique role to induct the newcomers into the learning community (Hoffman, 2002; Proehl et al., 2013). Multi-age groups also provide children without siblings opportunities to socialise with different ages (Rouse, 2015).

Gerard (2005) posits that multi-age groups are also conducive to the development of a democratic learning community, where, due to the greater age differences, children's interactions are characterised by higher levels of group interdependence. The relevance of Dewey's (1963) theory of education as a social and democratic function is recognised here. Less competent children develop through participating in the life of the community where more competent members provided stimulation (Dewey, 1897, 2011).

Contrary to this, Huf and Raggl (2015) observed older children attempting to present their expertise with the authority of a teacher. This goes against the principles of democracy in a multi-age community through bringing status hierarchies into children's interactions, such as assertion of power through unsolicited help, which can be legitimised by children's differences in age (Corsaro, 2018; Huf & Raggl, 2015; Wagener, 2014). Baines et al.'s, (2007) study made recommendations that to avoid peer learning activities to place a burden on either the younger or the older learners of a multi-age



community, the adult had a role in organising peer groups in order to optimise the social pedagogic potential of peer learning.

*Diversity and acceptance* are regarded as cornerstones of community building in multi-age groups (Aina, 2001; Lindström & Lindahl, 2011). With the largely varied social and familial capital children bring into the settings, diversity goes beyond the bounds of heterogeneity of age and capability. Children learn to see each other for their personal qualities rather than for the age group they belong to. It is argued that 'mixed-age groups are rather considered as a catalyst for acknowledging this diversity', (Aina, 2001; Hoffman, 2002; Huf & Raggl, 2015:232).

#### *Multi-age teaching and learning processes*

The review of literature suggests that a multi-age pedagogical approach embeds processes of teaching and learning that gives it its specific internal structure and key characteristics are identified as: collaboration and team teaching, thematic instruction, project approach, and multi-level differentiation and assessment. These are constructively aligned to learning processes of collaborative learning and peer tutoring, peer assistance, peer modelling, and inquiry-based learning.

*Collaboration via team teaching* is described as two or more educators sharing joint responsibility for the planning and the instructional processes (Bailey et al., 2016; Ronksley-Pavia et al., 2019) designed primarily for three reasons: to eliminate or minimize the problems that come with 'catch up' programmes when children are pulled out of the class for additional support; to enhance communication between professionals who have vested interest in the group of children they were working with; and to eliminate the fragmentation of the curriculum (Stuart et al., 2006).

*Thematic instruction* goes hand-in-hand with inquiry-based learning, where the curriculum design emphasises exploratory approaches to learning (Ritland & Eighmy, 2012). Similarly, the *project approach*, designed to cater for a wide range of interests and strengths, requires children to explore independently and to process information rather than to rote learn (Smit, et al., 2015). Through educators introducing skills woven into a thematic framework children are enabled to explore at their own developmental level and pace (Casserly et al., 2019). Somewhat contrastingly, Smit et al. (2015) suggest that effective multi-age teaching requires less personalisation and

more adult direction or need-adjusted instruction. Either way, children's learning is influenced by the teachers' skills of multi-age instruction and how comfortable they are with this aspect of practice (Manship et al., 2016; Purtell & Ansari, 2018).

Inquiry-based learning offers itself to formative *assessment* through naturalistic *observations* that recognise individual differences in learning (Ritland & Eighmy, 2012; Smit & Engeli, 2015). Multi-level assessment carried out synchronously is inevitable and necessary in a multi-age environment. The assessment processes focus on individual children's performances rather than a comparison to other children or a group-wide developmental milestone (Heins et al., 2000; Kappler & Roellke, 2002). Children's self-evaluation and self-assessment is also promoted through this flexible and continuous assessment and peer feedback can be as much an assessment as a learning resource (Smit & Engeli, 2015; Taole, 2017). This is in contrast to a single-age classroom design, where expectations for skills and capabilities are more likely to be standardised and ability homogeneity expected (Bailey et al., 2016; Berry & Little, 2006).

The theoretical underpinning for *peer learning* in multi-age groups is provided by Vygotsky's (1978) theory of the zone of proximal development (ZPD) and the concept of scaffolding. Vygotsky (1978:86) defines the zone of proximal development as

...the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.

The child's potential level of development can be enhanced by more capable others (Bekiryazıcı, 2015:914) (the translation of the original phrase 'более знающий другой' is 'more knowledgeable other'), who can be either a peer or an adult.

Like studies before them, Smit et al. (2015) found multi-age groups a supportive environment for peer learning. However, they proclaim that for peer tutoring to be effective for both the tutor and tutee, the age gap should be between two and four years. Gerard (2005) and Ansari (2017) both assert that older children solidify their own understanding through re-teaching, which is a valuable meta-cognitive component of multi-age

learning, and it supports the notion of cognitive conflict as impetus for learning through shared exploratory talk and constructive dialogue.

However, Roberts & Eady (2012), assert that optional or voluntary inter-age collaboration does not automatically bring benefits but it requires the adults to explicitly identify the reasons for collaboration. In this way, the learning becomes more powerful and beneficial for both tutors and tutees. Cognitive and affective benefits of peer tutoring - namely, improved motivation, attitudes, confidence and self-image - are noted (Topping et al., 2004) along with Hyry-Beihammer and Hascher's (2015) helpful distinction between voluntary peer tutoring as a learning strategy and guided peer tutoring as a teaching strategy. Additionally, Huf & Raggl (2015) point out that direct help between peers merely provides solutions, whereas indirect help enables a peer to work independently.

The examined research literature in this section offers support for multi-age teaching and provides compelling evidence that children can be appropriately supported by skilled practitioners who are able to utilise group age-heterogeneity in socially constructing culturally valued knowledge, in which peers and adults play an equally significant role. The next section returns to Vygotsky's theories and examines multi-age practice from a cultural historical perspective.

### 3.3.3 Cultural-historical theory

Research literature also evidences a shift in ECEC discourses to a cultural-historical narrative with a greater emphasis on teaching and learning processes rather than the normative approach developmental psychology promotes (Fleer, 2010, 2015; Grieshaber, 2015; Hedegaard, 2009, 2012). Coinciding with the re-interpretation of the Vygotskian cultural-historical theory of development through the works of Luria (1973) and Leont'ev (1975), the shift is towards constructing new understanding so that children's learning can be supported in culturally respectful ways (Edwards, 2005; Fleer, 2003; van Oers, et al., 2010).

In this sub-section, I examine Vygotsky's (1929) cultural-historical theory for its relevance to multi-age practice. Emphasising the significance of history, this theory contends that culture and learning are inseparable and that the main aims of education is the transmission of culture from one generation to another in unique socio-historical circumstances (Kozulin,

2003; Luria, 1968; Veraksa & Veraksa, 2018). What determines a child's developmental trajectory is the child's interaction and changing relationship with their social and physical world, which is mediated by the child's immediate contexts (family or an early childhood setting). Development is not within the individual child in relation to how old they are (Fleer & Hedegaard, 2010) but in the transformation through participation in activities with people, the material world, societal tradition and the cultural tools of his communities passed down through generations (Vygotsky, 1982). Reciprocity is underscored between non-biological factors affecting children's development, such as values, beliefs, customs and practices within the child's various communities and the notion that the child's learning and development influences and shapes the conditions they live in with other members of their community (Fleer & Hedegaard, 2010).

#### *The Golden Key schools*

Examples of the pedagogical approach where these Vygotskian cultural-historical principles are operationalised are the approximately thirty Golden Key Schools [Золотой ключик] of Russia, led by his granddaughter, Elena Kravtsova. Examining how the theory is implemented in these schools makes visible the key tenets of the cultural-historical theory and provides me with inroads to recognising their relevance to multi-age practice in my study context.

The Golden Key Schools are based on family principles and run as a large public family, a continuation of the child's home, where parents and other family members are actively involved in the children's institutional life. Children between three and ten years old learn together in multi-age groups (they call 'families') and teachers are specially trained for this programme (Kamen & Murphy, 2011; Kravtsov, 2010; Kravtsov & Kravtsova, 2011; Murphy et al., 2016).

There are five fundamental principles of the Golden Key programme (Murphy et al., 2016):

1. multi-age organisational model across the school;
2. partnership with families through extensive home-school links;
3. planning for children's learning around events that are highly meaningful to them and engage them through their emotions;

4. the interdependence of education and development founded on the Vygotskian concept of 'zone of proximal development' (ZPD) (Veresov, 2004);
5. 'paired pedagogy', where two teachers work with the same group of children and employ strategies that complement one another so that they fully engage children in the learning process (Kravtsov & Kravtsova, 2009).

They are also heavily influenced by three of Vygotsky's cultural historical concepts: 'wholeness', the zone of proximal development and cultural mediation, which will be examined next with the five principles both explicitly and implicitly embedded in the discussion.

#### *The 'wholeness' approach*

The cultural-historical wholeness approach to early childhood education is where the individual and the collective are considered in relation to one another (Hedegaard, 2012, 2018). There is also an emphasis on the connection between play and the social context the child is brought up in, which bears particular relevance to the multi-age organisation because it includes the significant role of adults and mixed-age peers in serving as role models for imaginary play, a childhood specific activity (Vygotsky, 1967), through which children develop holistically (Fleer, 2010; Hedegaard, 2018; Kravtsov & Kravtsova, 2009). Through engaging with multi-functional objects in their make-believe play, children start to develop abstract thinking. They move from the sensory-motor manipulation of the object to manipulating ideas in their heads, which leads to logical thinking. Separating the meaning of the object from the object itself is the precursor to abstract thinking (Hedegaard, 2016; Murphy, 2012; Vygotsky, 1967).

#### *The zone of proximal development*

Play creates a *zone of proximal development*, in which the child 'becomes a head taller than himself' (Vygotsky, 1967:16). In the reviewed literature four key elements of ZPD are identified: (i) the interaction between the real and ideal form of development (Fleer, 2015a; Murphy, *et al.*, 2015), (ii) 'buds of development' (Vygotsky, 1978:86), (iii) imitation and emulation (Doherty, 2012; Hedegaard, 2009) and (iv) the unity of affect and cognition, otherwise called 'perezhivanie' [переживание] (Blunden, 2016; Fleer, 2016; Fleer, *et al.*, 2017; Veresov & Mok, 2018).

In a multi-age learning environment, there are ideal models of development that influence the child's actual development. They serve as invitation for interaction and are instrumental to multi-age learning: a typically younger child reflects on these models, masters them and appropriates them into his own real form of development (Vygotsky, 1984 cited in Veresov, 2004). Connected to this is what Vygotsky (1978:86) calls 'buds', as opposed to 'fruits' of development, which are behavioural functions and abilities that are in the process of maturing. The focus is not on what is already learnt and acquired but on what is on its way. For a child to imitate or emulate any behaviour, it requires prior observation, which in the Vygotskian sense is an active process of learning values, principles and ways of behaving in the course of interactions. Young children's imitation in a multi-age environment is likely to be of his older or more capable peers (Murphy *et al.*, 2015).

Connected to ZPD is another concept, *perezhivanie*, which captures a child's emotional and intellectual engagement in the learning process (Blunden, 2016; Fler, 2016; Kozulin, 2016). In *perezhivanie*, making personal sense and the feeling of an experience are inextricably interwoven,

...affect and intellect are not two mutually exclusive poles, but two mental functions, closely connected with each other and inseparable, that appear at each age as an undifferentiated unity.  
(Vygotsky, 1998:239)

It is through emotions that a child stays motivated to learn and, therefore, stays within or re-enters the ZPD (Clarà, 2016; Michell, 2016). The cornerstone of the Vygotskian concept of *perezhivanie* is the child's internal, affective and subjective response to the experience.

#### *Cultural mediation*

In Vygotsky's (1929) theory, development is a result of the interdependent natural and cultural processes, otherwise known as cultural mediation. The child interacts with the environment via cultural tools. By interpreting the cultural tool, the child himself becomes the agent of his culture (Fler, 2006, 2010b). What is culturally relevant to children in a multi-age group is informed by a deep understanding of the diverse personal, family and community backgrounds. Children's familiar ways of learning is utilised in order to maximise their participation in cultural events, and ECEC settings strengthen those familiar ways by adapting their practices to the cultural

variations children bring into the setting (Fleer, 2003, 2010b; Fleer & Hedegaard, 2010; Fleer & Robbins, 2007).

These socio-cultural-historical perspectives offer alternatives and nuanced ways of understanding teaching and learning in multi-age environments, where age heterogeneity adds a layer to the social and cultural diversity of the learning community. Through their key concepts, the role of peers and adults in interactions is reinforced and cultural sensitivity is extended not only to children and their families but also to the practitioners who themselves bring cultural capital to the teaching and learning processes (Fleer, 2003). All three theories appreciate the importance of social, cultural and historical interpretations of what might be appropriate for young children, making them a good fit to potentially frame my study. However, they are mainly concerned with non-biological factors (values, beliefs, customs, context bound practices) and with my focus on the interactions between human participants in specific contexts, I needed a theoretical framing that considered the biological aspects of how adults practiced in multi-age ecologies. Therefore, I turned to Bronfenbrenner's bio-ecological theory and his Person-Process-Context-Time model (Bronfenbrenner, 1979, 1995b) for continued emphasis on real-life settings, (in other words, ecological contexts) and a renewed significance attributed to biological resources in understanding human development and social phenomena (Ceci, 2006).

Putting the 'biological' in the centre of his theory, to his well-known concepts of micro-, meso-, exo- and macro-systems, the bio-and chrono-systems are added, which brings focus to the person, time and timing. As a consequence, the nested ecological system becomes a more dynamic structure and development is re-defined as 'stability and change in the biopsychological characteristics of human beings over the life course and across generations' (Bronfenbrenner & Morris, 2006:796) rendering the bio-ecological theory a more suitable foundation for my study than the socio-cultural-historical theories.

In the subsequent section, multi-age practice is examined from a bio-ecological perspective, (Bronfenbrenner, 1992, 1994, 1995a, 1995b; Bronfenbrenner & Morris, 2006) with an emphasis on the significance and implications of age-heterogeneity as it shapes the conditions under which

practitioners teach and children access education and care. The theory underwent significant changes since its inception in 1979 (Rosa & Tudge, 2013), and here, the review focuses on the latest iteration, the Process-Person-Context-Time (PPCT) bio-ecological model for its applicability to the current study.

### 3.4 Bio-ecological theory

In the PPCT model, there is a dynamically interactive relationship between the four properties in that proximal process, which are 'forms of interaction between the organism and the environment' (Bronfenbrenner, 1995b; Bronfenbrenner & Morris, 2006:795), are heavily influenced by the biopsychological characteristics of the person, the immediate environmental contexts and the regularity and longevity of time in which these proximal processes take place (Bornstein, 2012; Bronfenbrenner, 1995b). The four properties are examined next in their application to a multi-age group ecology with references mainly to the most proximal environments (micro- and meso levels of the nested ecological systems) as these are the systems by which an individual's development is most directly affected.

#### 3.4.1 Proximal processes

Proximal processes mediate between the individual and the immediate environment (or other individuals) through increasingly complex interactions (Bronfenbrenner, 1994; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Crouter, 1983). They are the primary mechanisms of development providing the mutual influences and inter-relations that constitute the practices a child is exposed to (Bornstein, 2012; Bronfenbrenner & Morris, 2006).

The proximity and enduring forms of interactions between the developing person and other people in the developing person's immediate environment prompt reciprocity and involve energy exchanges in both directions (Bronfenbrenner & Evans, 2000). If occurring with regularity over a period of time, they can either be disruptive or generative, and the most powerful proximal processes are generative as they include sensitivity and responsiveness towards the child and his joint engagement in activities as well as exploration and manipulation of the immediate environment (Bronfenbrenner & Morris, 1998; Lundqvist & Sandström, 2019). Therefore, examining the typically occurring interactions and how they are influenced



by the three remaining defining properties of the bio-ecological model in a multi-age EC community is worthwhile.

#### 3.4.2 Person

The person in the PPCT model interacts with and potentially changes the environment through his interactions. The characteristics of the person work outwardly from the most proximal, in terms of scale and reach, to the most distal (Bronfenbrenner & Ceci, 1994). Three types of personal characteristics are identified to influence proximal processes: force characteristics (or dispositions), resource characteristics (of knowledge, skills, ability and experience) and demand characteristics, which either invite or discourage engagement from the social environment (Bronfenbrenner & Morris, 2006). Bronfenbrenner (1995a:634) refers to the dispositional orientation towards the environment and the agentic attributes of a person as 'developmentally instigative characteristics'.

Ansari and Pianta (2019b) claim that practitioners with specific characteristics may be better suited to working with multi-age groups. Within the micro-system, meeting the more diverse needs from a broader range of ages can be seen as a more challenging task than it is in same-age groups, and it is likely that some practitioners are better prepared and better equipped to do so than others (Manship, et al., 2016; Ribeiro, et al., 2017). Those who are sensitive and more attuned to children's individual learning characteristics and personalities tend to be more comfortable with supporting children to develop at their own pace. Through family-like relationships practitioners have the opportunity to get to know children more intimately (Aðalsteinsdóttir, 2008), therefore, they are also able to rely on their intuition to guide them in their interactions with children (Hoffman, 2003; Ramrathan & Ngubane, 2013; Sipman et al., 2019).

Responsiveness and sensitivities in interpersonal care interactions shape the proximal processes of caregiving (Cassells & Evans, 2020). The haptic behaviour of touch and its various categories, embodied care and expressions of love are force characteristics often associated with mothering and motherly love (Bergnehr and Cekaite, 2018; Hedlin et al., 2019). In Anglo-Saxon countries, there appears to be a cautious attitude to touch (Johansson et al., 2021) and love (Campbell-Barr, et al., 2015) or

'professional love' as Page (2018:125) conceptualises it, and it is much debated, but at the same time, the emotional labour of ECEC workers is recognised and valued as professional attributes (Elfer, 2012; Fairchild & Mikuska, 2021). In interpersonal care, Cekaite and Bergnehr (2018) found intimacy and affection intertwined and contributing to relational early childhood pedagogies. These characteristics and their manifestations in care-full pedagogies (Luff & Kanyal, 2015) do not sit in a vacuum. They are intrinsically tied to the inner and outer layers of the ecological system: pedagogic, social, socio-emotional and cultural values of the people and places in which they take place (Ceci, 2006; Cekaite, 2015; Goodwin, 2017).

Although age diversity does not necessarily equate to skill diversity, it could be assumed that smaller deviation in age in single-age groups would result in more limited developmental heterogeneity and, therefore, individual attention and personalisation would run on a smaller scale. The link is tentative, however, practitioners with resource characteristics of higher levels of qualification and greater practice experience are more likely to have greater knowledge and understanding that enables them to apply strategies that better promote the learning and development of children of varying ages in multi-age groups (Ansari & Pianta, 2019b; Early et al., 2007; Mulryan-Kyne, 2007; Purtell & Ansari, 2018; Taole, 2017). When combining demand, resource, and force characteristics in interactions between people (adult-child, child-child) and with the environment, it becomes clear how proximal processes become highly divergent and unique experiences in the varying contexts they take place (Bronfenbrenner & Ceci, 1994; Tudge et al., 2009)

### 3.4.3 Context

In Bronfenbrenner's (1979) nested spheres, the micro-system has special prominence because this is where proximal processes occur, and have more power to shape development (Cassells & Evans, 2020). The key people, with whom young children engage in progressively more complex interactions, are their peers and the practitioners (Bronfenbrenner & Ceci, 1994; Hoare, 2008). The patterns of activities, interpersonal relations and the physical set-up form the developing child's microsystem (Bronfenbrenner, 1994). Apart from the practitioner-child dyads as contexts for development, multi-age groups offer a more diverse child-child context because of the greater

range of personal characteristics due to the wider age span (Bronfenbrenner & Morris, 2006).

Meso-systems constitute the connections and 'indirect linkages' between micro-systems, such as homes, settings and neighbourhoods (Bronfenbrenner, 1979:210). Additionally, multi-age groups can also be seen as representing the meso-system by straddling the boundaries of micro-systems (Bornstein, 2012), therefore strengthening the connections and the stability of the learning environment when siblings, relatives or friends of different ages attend the same group (Bronfenbrenner, 1995a). Unlike single-age groups, multi-age groups can provide a more familiar and familial ecology for development. A family atmosphere supports a sense of agency and sense of belonging, where siblings reinforce one another's behaviour and develop their own relationships through their wider social exchanges (Whiteman et al., 2011). The range of ages as well as the ratio of younger to older children can shape interaction and behaviour among children, which influences the ecology of a multi-age group. While Lillard (2016) claims that the optimal experience is when there is a three-year age range so that children are exposed to both younger and older children, others argue for an even spread of the various ages within a group (Ansari et al., 2016; Kravtsov & Kravtsova, 2011).

At an exo- and macro level, the philosophical beliefs of leaders and practitioners as well as the pedagogical programmes adopted can also determine the group organisational model and with that, teaching and learning practices (Ansari & Pianta, 2019b; Berry, 2003; Ramrathan & Ngubane, 2013). Certain programmes, such as the Montessori are rooted in age diversity as discussed earlier in section 2.4 and therefore, require multi-age organisation for successful implementation (Lillard, 2018).

#### 3.4.4 Time

Building on what Bronfenbrenner (1988) termed the *chronosystem* (1988), distinctions are made between micro-time (continuity or discontinuity in proximal processes), meso-time (how often they occur over units of time, such as days or weeks) and macro-time (longer or historical periods, such as generations) (Bronfenbrenner & Morris, 2006).

Looking beyond the bioecological model, the origin of the word 'time' traces back to the Greek 'Chronos' and 'Kairos', which are used for the delineation

of quantitative and qualitative time, immediately highlighting the significant difference between the two concepts (Negri, 2013; O'Brien, 2016; Tsang, 2008). While chronological time is linear and measurable, kairological time is non-linear and captures opportune timing, a temporal opening, a critical juncture or favourable moment that needs to be seized before it passes. It is an expression of timeliness or the right time, at which point something could happen (Cocker, 2015; Smith, 2002). Picking up on the objective-subjective distinction between the two, Frost Benedikt (2002) conceives Chronos as absolute and universal and Kairos as interpretative and situational. Lipari (2014) explains Chronos by drawing on the Western thinking about time, which focuses on a continuous, linear movement arbitrarily divided into discrete entities, which form a series of equally spaced intervals, isolated from one another but at the same time connected, to create units. This spatialised model of time is reinforced by the use of clocks, sundials and calendars. Contrary to this is Kairos, which is understood as non-quantifiable movements of temporality, the right or opportune time to do something. In sum, Chronos could be understood as 'homogenised clock time', whereas Kairos as 'human experiential time' (Lipari, 2014:142).

Time as a temporal component is a key feature of the multi-age ecology as one of the hallmarks of a multi-age group is that children stay with the same practitioner for longer (Edwards et al., 2009; Kryzer, et al., 2007; Teszenyi & Hevey, 2015). This longevity is noted as significant for it allows stronger relationships between children and practitioners to develop (Ansari & Purtell, 2018; Broome, 2009) and potentially can mitigate the 'growing hecticness, instability, and chaos' in children's lives (Bronfenbrenner & Morris, 2006:796; Hoare, 2008). Proximal processes, however, cannot operate without stability, consistency and predictability (Bronfenbrenner, 1995a) and practitioners are seen as significant contributors to these through their consistent presence (Teszenyi & Pálfi, 2019).

Although research evidence suggests that staff turnover within an academic year offers children less optimal learning environment (Garrity et al., 2016) there is little known about how change in staffing impacts on the ecology of a multi-age group across more than one year (Ansari & Purtell, 2018) and to what extent it disrupts children's learning and teaching practices (Jackson et al., 2014). Bronfenbrenner and Morris (2006) claim that longevity of care

has some affordances: (i) opportunities for the practitioner to get to know the child and the family well and for the family to get to know and understand the practitioner and his/her motivations towards their child (micro-time) (Bailey *et al.*, 2016; Hoffman, 2003); (ii) predictable and coordinated care from both the practitioner and the family with 'temporal regularity' (Bronfenbrenner & Morris, 2006:820) that aligns with the child's biopsychological characteristics (meso-time); (iii) and a practitioner's influence the timing of the child's readiness to enter formal education (macro-time) (Karcag, 2005).

The practitioner may or may not be constant but the continuous change in the composition is an organic part of a multi-age group's ecology, it contributes to the natural lifecycle of an age-heterogeneous group (Purtell & Ansari, 2018). Older children leave for school and younger children replace them. However, a substantial proportion of the group remains the same making settling-in processes quicker and more comfortable. Older children leaving provides opportunities for roles within a group to rearrange, for modelling and leadership roles to be passed on to the younger members of the group (Katz, 1995). Proehl *et al.* (2013), posit that leadership skills are naturally woven into the fabric of multi-age groups, however, it is also claimed that for children to benefit from being in a multi-age group, they need to attend for multiple years so that they experience being both younger and older members of their community. In this way they experience moving from receiving peer support to offering help, scaffolding peers' learning and consolidating their own learning (Katz, *et al.*, 1993; Winsler *et al.*, 2002; Ansari and Purtell, 2018).

In conclusion, as the above demonstrates, Bronfenbrenner's bio-ecological theory considers the individual within the nested multiple layers of the ecological micro-, meso-, exo- and macro-systems along with the bio- and chrono-system (Bronfenbrenner, 1995a). It emphasizes the significance of the bio-psychological and contextual influences on how children learn and practitioners teach, which provides a fitting theoretical frame for this study. Throughout my project, Hungarian early childhood practice is considered within the macro-system of cultural, social, historical and geo-political influences that impact on provision for children and their families. Shaped by

these influences are the policies and institutions in the exo-system, which consequentially impact on the meso-system of the social networks and local services for children and pedagogues. Finally, the ripple effect of influences reaches the interactions and processes closest to the child in the micro-systems of early childhood settings (Bronfenbrenner, 1979, 1994; Bronfenbrenner & Evans, 2000). In my study, the PPCT model is drawn on as a means of developing a better understanding and new knowledge of pedagogues' behaviours in the particular ecological niche of multi-age groups.

### 3.5 Multi-age practice in Hungary – what the literature says

As explained in section 2.1, research literature on multi-age practice written in Hungarian appears to be scarce. Although this strengthens my motivation for this study, it leaves a gap in the review of literature that would directly focus on what we thus far know about pedagogic practice in multi-age environments in the Hungarian ECEC context. In the periodical style literature reviewed, academic arguments drew on anecdotal rather than empirical evidence. Although critical analysis was lacking in the main, what I am tentatively presenting below - in relation to the four themes derived from the evaluation of the available literature - reflects practitioners' socially constructed understandings of multi-age practice, therefore it is to be considered with this caveat.

#### 3.5.1 Organisation

In relation to the multi-age organisational model, two key aspects of the group composition is considered in the reviewed literature: a need for balanced representation of the three age groups (3-4, 4-5 and 5-7 year olds) (Kósáné Ormai, 2001) and balanced proportion of boys and girls (Villányi, 1994). With the annual change in the composition of the group, it is suggested that pedagogues have a role in re-balancing the status hierarchies at the start of the new academic year (Kósáné Ormai, 2001).

Körmöci (2004a, 2019) advocates for a flexible learning environment where spaces and resources are used in a way that can accommodate age-diverse play as well as play of same-age peers within the same group. Protected space is also identified as important for older children's more complex and more mature play (Ádám & Hegedűs, 2019:118). Micro-groups may form

spontaneously but they are also created purposefully for adult-led activities, especially for those that aim to prepare five to seven years olds for school (Deliné Fráter, 1994:101; Kósáné Ormai, 2001).

### 3.5.2 Family model

It is suggested that multi-age groups represent a family model of learning in institutional care because of the nature of the relationships between children and adults, the continuity it provides and the opportunities it offers for siblings to attend the same group (Deliné Fráter *et al.*, 1993; Teszenyi and Pálfi, 2019). Continuity is highlighted not only because pedagogues stay with their groups for three (or more) years (Körmöci, 2019) but also because, for those children who do not leave for school at the age of six, a multi-age group provides a familiar, continuing community of learners. These children experience the start of a new academic year (their fourth year) the same as all the others previously: some children leave for school and some new children arrive to join the group. Their attachment to the pedagogues and the continuing presence of their peers help them overcome the loss of friends (Körmöci, 2004b).

Ádám and Hegedűs' study (2019) found that settling-in for a new starter is smoother when a sibling is already in the same group and the older child can support the younger, which can extend the time siblings spend together in out of home care. With the help of peers and less children to settle, pedagogues have a better chance to offer personalised and sensitive care and to develop attachments with the new arrivals (Körmöci, 2019; Kósáné Ormai, 2001). However, the presence of a sibling may delay developing relationships with the rest of the group and younger children may also hinder the play of their older siblings by their insistent presence and demand for attention (Körmöci, 2004a).

### 3.5.3 Children's development

A developmental discourse seems to recur in the reviewed literature, with a particular focus on the pace and the biological age versus stage of development debate (Deliné Fráter, 1994; Körmöci, 2004b; Pivókné Gajdár, 2012). Distinguishing between the age and the stage of development is inconsistent in the literature dating back to before 2000, with references to three distinct age groups (3-4 yrs; 4-5yrs; 5-7yrs) and their typical normative developmental characteristics both in same- and multi-age

groups. This inconsistency may be due to the prevailing influence of the two curriculum frameworks that preceded the current Core Programme (Ministry of Human Resources, 2019). The 1971 and 1989 Kindergarten Education Programmes (Országos Pedagógia Intézet, 1971; 1989) both listed developmental outcomes for the three distinct age groups and the accompanying practice guidance was also structured in relation to these three age bands. It was not until 1996, in the first version of the current National Core Programme for Kindergarten Education, that these references to the three age groups disappeared and typical characteristics of a child's development at the end of kindergarten age were described in more general terms (Kovács & Bakosi, 2004; Pukánszky, 2005).

In the literature, there appears the assumption that the older the children are, the more advanced their development is (Deliné Fráter *et al.*, 1993), although there is also a recognition of age and development being out of sync (Kósáné Ormai, 2001). There seems to be an agreement on a faster pace of development for younger children because more able, typically older children serve as models for them (Gajdos, 1994; Pivókné Gajdár, 2012). Having experienced more mature play with older peers, younger children initiate more complex and more advanced play, which accelerates development (Körmöci, 2004a). Déményné Szente (2004) highlights greater gains in personal, social and emotional development, in particular, which puts children from multi-age groups at an advantage at the beginning of formal schooling compared to those from same-age groups.

Concerns are also expressed about the development of older, or the oldest, children because the presence of younger peers can hinder their development (Körmöci, 2004b; Kósáné Ormai, 2001). Equally, younger children's development could also be hindered by older peers dominating their play (Ádám & Hegedűs, 2019; Kóbor, 1990). Recognising the significance of development through repeated learning is also noteworthy, as by its design, teaching and learning in multi-age groups revisit skills and curriculum content on an annual basis and children access planned activities at a level that is appropriate for their stage of development at the time (Kósáné Ormai, 2001). Therefore, children have opportunities to learn skills that are not yet intended for them, but equally, those children who do not



manage to learn a skill for the first time, have the opportunity to revisit and learn again (Körmöci, 2004a).

#### 3.5.4 Multi-age teaching strategies

The most frequently discussed strategy in the reviewed literature is differentiation. The complexity of differentiation in multi-age groups due to the wider range of ages and stages of development is highlighted and the influence of previous curriculum guidance relating to the three age bands appears still to be present (Körmöci, 2019). There seems to be an acute awareness of the need to prepare five-, six- and seven-year-olds for school in their final year of kindergarten (Kovács & Bakosi, 2004) and some concerns are expressed about pedagogues having less time for individual children because of the greater organisational demands a multi-age group presents (Kovács, 1990).

Greater workload for pedagogues is highlighted in multi-age groups, for example planning, organising outings or engaging in parallel activities (Déményné Szente, 2004; Villányi, 1994), which can make pedagogues more reluctant to want to work in multi-age groups (Kovács, 1990). Interestingly, Ádám and Hegedűs (2019) claim that a larger proportion of pedagogues are not in the position to choose what model of group organisation they work with. What pedagogues find particularly rewarding in multi-age groups, is that they are able to teach through care. A whole range of their skills are utilised, and they can draw on peer support as a pedagogic strategy, more so than in a same-age group. By consciously planning for peer support, they create situations where children learn co-operation, tolerance for one another, they learn to read each other's intentions and settle conflict themselves (Gajdos, 1994; Kóbor, 1990; Körmöci, 2004b; Kósáné Ormai, 2001).

To sum up, multi-age practice has enjoyed worldwide research attention for over 50 years, but less so in Hungary, where empirical studies are scarce. Like everywhere else, the country's unique history, reflected in the wider national socio-political agenda, has influenced the implementation of early childhood education services. The origins of policy changes may no longer be remembered, but they continue to influence practice. In Hungary, the key historical event, the Soviet occupation and the educational lending and

borrowing (Tobin, *et al.*, 2011; Georgeson, *et al.*, 2013) that followed in its wake, has had long lasting impact on practice. By looking outward, practitioners are in a better position to question taken for granted ideas and assumptions and to gain clarity of the principles and values that govern their own practice (McDowell-Clark, 2020; McLeod & Giardiello, 2019). Research now needs to catch up with practice so that decisions are informed by empirical rather than anecdotal evidence. This is where my study offers a significant contribution.

### 3.6 Concluding the two literature review chapters and sharpening the research questions

Research into multi-age practice suggests that age composition is an important component of a group's ecology; so much so, that age determines both the point of entry and how children are assigned to their groups (Ansari & Pianta, 2019a, Bailey *et al.*, 1993, Winsler *et al.*, 2002). Group age composition has received limited attention in early childhood research beyond its influence on development but merits closer attention as multi-age groups are assumed to operate with fundamentally different ecologies from same-age groups. As the review of literature evidences, group ecology shapes the educational experience for both children and practitioners, therefore, age composition can potentially influence the conditions under which children and practitioners interact in an early childhood setting.

The review of extant literature relating to multi-age practice presented in Chapters Two and Three has provided an historical overview and an insight into various disciplinary and theoretical backing that support the implementation of such practices. The debates in research literature highlight a noticeable shift in the discourses about childhood, early education, and notably, in the various ways practitioners nurture children in these formative years. The developmental view and the image of the universal child continues to persist, but there is also a strengthening of alternative perspectives, which increasingly appreciates the importance of social, cultural, historical and ecological interpretations of what might be appropriate for young children. Increasingly more research attention appears to be paid to the how-s and why-s of practising with a mix of ages. There seems to be some shared characteristics of multi-age practice as well

as features that are specific to the particular theoretical or disciplinary backing they are founded on. For example, the significance of collaboration and the unique contributions both the older and younger members of a multi-age learning community make underlined. Flexibility and fluidity in organisation, teaching and in the utilisation of available resources seems to be a common theme and continuity is presented as a key temporal aspect of multi-age practice.

Comparisons have been made between single-age and multi-age educational practices and their various aspects are often presented as the binary constructs of advantage or disadvantage. It may be worth considering whether the advantages of one form of group organisation can be justifiably positioned against the disadvantages of the other. How useful is regarding one particular organisational model as superior or inferior to another? This seems to create a hierarchy and puts obstacles in the way of educational innovation. Instead, what would be more useful is a nuanced understanding of multi-age practice and its characteristics in its various cultural, socio-political and ecological contexts. Specific features in specific contexts, at specific times in history add up to a full picture, which may be evaluated by those who have a vested interest in getting it right for children.

So far in Hungary, research has not explored in any convincing way the efficacy of multi-age kindergarten grouping or indeed the degree to which this form of organisation makes particular demands on practitioners' pedagogical knowledge and professional skills, specifically, in their interactions with children. Furthermore, in the Hungarian context, pedagogues' views of multi-age practice have not been explored, nor consequentially the relationship between what pedagogues reported as features of their practice and what they enacted in their everyday practical contexts. It seems that convincing empirical evidence is needed in Hungary to support decision making in ECEC policy and practice matters. Therefore, the aim of this study and thesis is to contribute to a deeper understanding of what constitutes the features of effective multi-age practice and to illuminate the variety of practices that currently occur in multi-age early childhood environments in Hungary. This is to be done through a bio-ecological lens to capture lived experiences in real-life ecologies.

Consequently, the most appropriate research questions to guide my investigation are:

- 1. What kinds of interactions characterise pedagogues' enacted practice in multi-age environments?*
- 2. What features do pedagogues report as characteristics of their practice in multi-age environments?*
- 3. What is the relationship between the reported and enacted characteristics and what conclusions could be drawn about multi-age practice in the Hungarian ECEC context?*

Chapters Four and Five now outline the methodology of my study. Chapter Four focuses on the research design, whereas Chapter Five addresses the research processes and analytical framework.

## CHAPTER FOUR: Methodology – The RESEARCH DESIGN

### Introduction to the two methodology chapters

This chapter outlines and justifies the decisions taken regarding the research design and methodological processes employed for this study. Methodology here is understood as a framework to examine assumptions, underpinning principles and procedures in my chosen approach to my inquiry and their implications for my research practice (Robson, 2016). It is what ensures that my research makes sense both in its design and its processes. The methodological design outlined here is believed to be suited to directly answer the main research question and the three specific sub-questions identified at the end of Chapter Three:

*Main research question:*

*What are the features of multi-age practice in the Hungarian ECEC context?*

*Sub-questions:*

- 1. What kinds of interactions characterise pedagogues' enacted practice in multi-age environments?*
- 2. What features do pedagogues report as characteristics of their practice in multi-age environments?*
- 3. What is the relationship between the reported and enacted characteristics and what conclusions could be drawn about multi-age practice in the Hungarian ECEC context?*

To ensure transparency, auditability and clarity of the research processes and procedures employed in this study, they are presented in two parts. Chapter Four outlines the research design, including the research paradigm, research strategy and considerations for ethics, translation and research quality. Chapter Five provides a detailed account of the research processes and procedures and outlines the analytical framework and phases of data analysis.

My research can be summarised as follows: This bi-lingual cross-cultural study worked with 28 participants, who represented a heterogeneous group in relation to age, gender, years of experience and qualifications (section 4.3). Data generation took place using non-participant observations (section

4.3), researcher field notes (section 4.4) and the Q-method (rank ordering 48 statements and follow-up interviews) (section 4.5) in 12 kindergarten groups in four settings over a four-week period. Data were generated in Hungarian, followed by translation and transcription. To ensure the trustworthiness of the translation, a comprehensive model of processes was developed including translation moderation, backtranslation and transliteration (section 4.7). Both qualitative and quantifiable data was generated, and a multi-phase analytical approach was adopted combining the set procedures of the Q-method (section 5.10) and reflexive and structured-tabular thematic analysis (section 5.12.4). The Gestalt 'wholeness' principle guided the analytical processes (section 5.12.1) and joint displays were used to bring together the two sets of findings (section 5.12.4).

#### 4.1 Philosophical foundations

Biesta (2020:13) contends that 'the world never appears unconceptualized and untheorized', and theories play a significant role in both informing methodological decisions in the initial stages of one's research and in the later stages when they are used to 'make the data intelligible'. However, in educational research the epistemological diversity is such that the same issue or phenomenon can be examined in a variety of ways (Frank, 2013). Depending on which ways of knowing one adopts, investigating a phenomenon could result in different realities (Nind et al., 2016). Early childhood pedagogy is the subject of this study and acknowledging that pedagogy is complex, nuanced and dynamic (Curtin & Hall, 2018) is central to establishing the philosophical foundations of this project.

This study seeks key insights into interactions (enacted practice) and understandings (self-reported practice) that are embedded into varied pedagogical contexts. To achieve this purpose, it draws on a social constructivist philosophy, and rests on the ontological and epistemological assumptions that knowledge is socially constructed and re-constructed by and between people. People are not passive, but they are implicated in the process of making meaning. What might be considered the 'truth' can only be understood as the socially accepted ways of viewing the world in distinct contexts (Curtin & Hall, 2018; Guba & Lincoln, 1998). Social science research is a dynamic process that cannot offer certainties only 'warranted

assertions' (Dewey, 1938b:4). In this study, individual participants' subjective and multiple meanings of their experiences of multi-age practice are explored (Braun & Clarke, 2014; Creswell, 2013). The sociological dimension of social constructionism, therefore, particularly suits this study because it shifts the emphasis from personally constructed meanings ascribed by people to specific situations (constructivism) to commonly held and shared viewpoints and to shared knowledge construction (Watts and Stenner, 2012).

The constructionist stance used in this present research allows for the epistemological acknowledgement that the 'realities' of multi-age practice can be understood and represented subjectively and differently by different individuals at a moment in time (Blaikie, 2007). Ontologically, the knowledge of the characteristics of multi-age practice is made up of individually interpreted constructions of subjective social and educational realities, that are both partial and fluid (Searle, 1996). This research study does not seek one objective reality; instead, it aims to provide different ways of seeing, interpreting and understanding multi-age practice in the Hungarian ECEC context, by which cultural knowledge is created (Biesta, 2020). Conducive to this aim is an exploratory approach, which informed the choice of a mixed method design, details of which is discussed in the subsequent sections.

#### 4.2 What do I want from my research design?

For this study to be worthwhile, my interest and motivations needed to be coupled with skills and a clear rationale for how I intended to go about conducting my research. For the research design to hold together there needed to be congruence between the philosophical stance of my study, its ontological and epistemological positions, the research questions and the various components of the research methodology so that meaningful interpretations of the data generated had the greatest potential to provide answers to the questions posed.

Therefore, the choice of methods was made in-keeping with the coherence within the overall design as demonstrated below in Table 1.

Research sub-question	Data generation questions	Method of data generation	The kind of data it yields
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2. What kinds of interactions characterise pedagogues' enacted multi-age practice?	<p>What kind of strategies do pedagogues' employ in their interactions with children?</p> <p>To what extent do children and pedagogues initiate interactions?</p> <p>Do pedagogues utilise the group's age-heterogeneity in the strategies they employ in their interactions? If so, how?</p>	Time sample & tracker observations, field notes	qualitative and quantifiable data
1. What features do pedagogues report as characteristics of their own multi-age practice?	What do pedagogues consider as the most characteristic and most uncharacteristic of their own practice in multi-age groups and why?	Q-method (pre-sort demographic questionnaires; Q-sort; post-sort interviews)	quantified and qualitative data

Table 1. A summary of data generation methods in alignment with the three sub-questions

Given that my research aim is to identify features of pedagogic practice that utilises a multi-age organisational model, my study needed to be exploratory in nature so that a priori assumptions, deriving from familiarity with worldwide models through the literature review, could be avoided. The design needed to be consistent with the social constructivist philosophical stance and also to accommodate the bi-lingual, cross-cultural nature of the proposed study conducted in two languages across cultures. Cultures with a capital 'C' reflecting my fluid embeddedness into my British and my native Hungarian cultures and also culture with a lower case 'c' acknowledging the multiple local cultures between and within the study locations. I was also very conscious of my insider-outsider position and how I might be perceived as a Hungarian national conducting a study in my native but no longer resident country. The chosen design needed to help me minimise, or at least remain sensitive to, the potential power differential between the study participants and myself.

To be able to answer the main research question as unambiguously and as convincingly as possible required a structure of inquiry that was primarily logical, 'not only logistical' (De Vaus, 2001:9). The design gives direction to the selection of research processes and procedures, namely, what evidence I might generate, how and how much of it (Creswell, 2013). I needed the research design to afford the in-depth exploration of the complexities and uniqueness of multi-age practice in a particular geographical location and



within a limited timeframe to develop as full an understanding as possible. A design that would enable a rich, balanced and multi-dimensional picture to be built of my subject so I could get 'close to reality' (Flyvbjerg, 2011:133) or rather, multiple realities.

To fulfil all these requirements, I chose a mixed method design for my study, which afforded action to be seen and voices to be heard through the combination of data generation methods that could potentially influence policy, pedagogy and professional practice (Biesta & Burbules, 2003).

#### 4.3 Sampling strategy

My sampling strategy was developed by considering the conjoint epistemological and practical concerns. For this study, it needed to accommodate the two foci: self-reported and enacted multi-age practice in ECEC through purposive criterion sampling, in which who the person was and where that person was located within the group bore significance (Palys, 2008). Therefore, the 'study population' (Robinson, 2013:25) required to include practitioners in early childhood settings operating with multi-age groups. Sampling criteria for the Q-method, was for participants to be working or having had experience working in multi-age groups. Although it was not the participants who were going to be the focus, but the possible range of viewpoints they held, and the degree to which those viewpoints were shared (Brown, 1996). To generate data using observations of interactions, the sample needed to consist of pedagogues who were working in a multi-age group at the time of my field work. This criterion refined and reduced the larger sampling pool (Punch, 2012).

In order to ensure broad representation in the sample, participants needed to be information rich with relevant knowledge on the subject matter (Baker et al., 2006), and who were not only diverse with regards to their age, gender, qualifications and work experience but also could potentially be diverse in opinion (Braun & Clarke, 2014; Watts & Stenner, 2005a). The sample size for using Q as a method of data generation could be small as the discrete number of views on a particular subject were likely to be limited (Brown, 1980). Therefore, the number of participants was considered less important than the pertinence of the demographic group the sample was drawn from (Watts & Stenner, 2005a). Collecting demographic information via a short questionnaire helped judge representativeness (Appendix 13). To

satisfy the criteria for using the Q-method, I recruited 28 pedagogues in four kindergartens. Twenty-two of them also satisfied the requirement of currently working with the mix of ages for the use observations. The local educational programme was not a criterion for sample selection, apart from aiming to include kindergartens in the sample that adopted different educational programmes in each. The local study contexts, including kindergartens, participating groups and study participants, are introduced in the section that follows.

#### 4.4 Local study contexts – researcher sites and research participants

All four kindergartens contributing to my study were located in one county capital city in the North-East of Hungary with a population of 120,000. There were 26 government funded kindergartens divided between four regions in the city, East, South, West and North and they had 166 groups altogether, 103 (62%) of which were multi-age (MA) and 63 (38%) same-age (SA) groups. This mirrored the distribution of multi- and same-age groups nationally (Hungarian Ministry of Human Capacities, 2018) as outlined in Chapter 2.3.2. Figure 1 demonstrates the distribution of multi-age groups across the four regions. Notable, that the North region had significantly more same-age groups than multi-age groups and the South region worked with mainly MA groups.

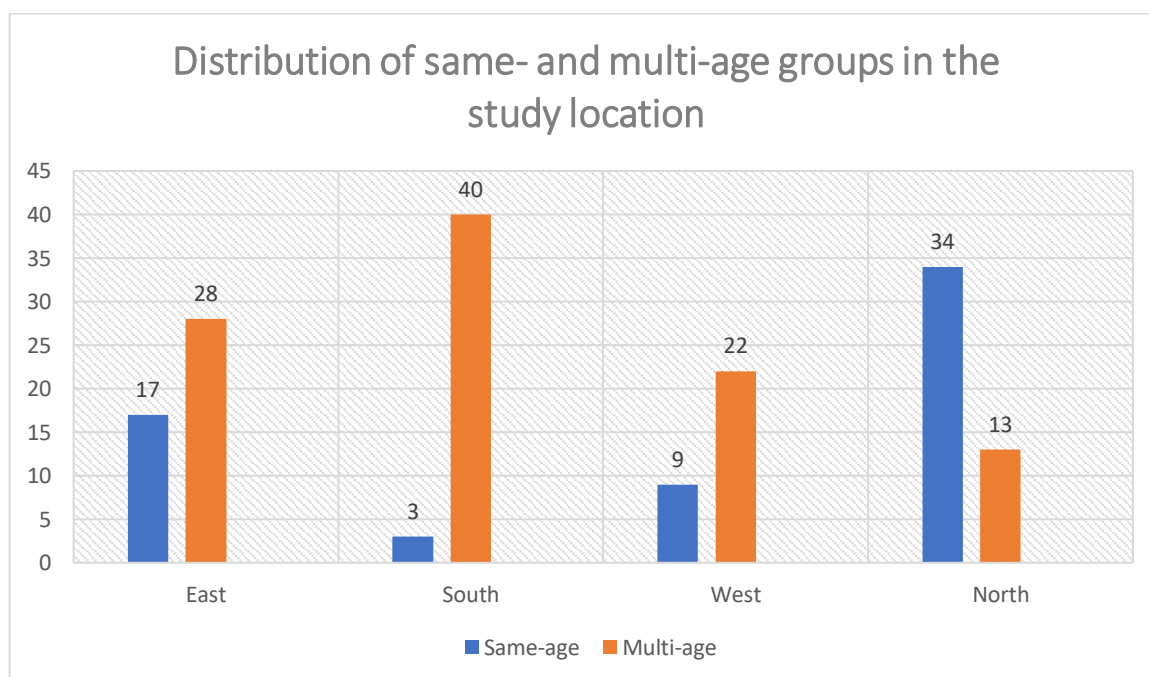


Figure 1. Summary of the distribution of multi- and same-age groups in the four regions of the study location.

Twenty-eight pedagogues made up my study sample, all providing data through the Q-method but only those twenty-two pedagogues observed in

practice, who were working directly with children at the time of data generation. The remaining six participants were in managerial positions, therefore not observed. The curricula the four kindergartens recruited in this study had adopted were: Montessori, Freinet, Complex Prevention and Activity-Based programmes and I will return to these briefly in the relevant sub-sequent sections below.

#### 4.5.1 Kindergarten 1

Kindergarten 1 was from the South region and operated with eight multi-age groups in its two-storey purpose-built building with one of the groups providing specialist provision for children with Autistic Spectrum Disorder. It had a large outdoor area shared by all children and the kindergarten’s local programme adopted the Montessori approach (Kurucz, 1995), which required multi-age groups. Although the kindergarten had specifically Montessori trained practitioners, they were not part of the study sample.

#### *The groups – Group 1, 2, 3*

Three groups volunteered to contribute to this study and Table 2 below summarises the composition of the groups at the time of data generation.

Group	Pedagogues	Number of Children		3-4 yrs	4-5 yrs	5-6 yrs	6-7+ yrs	Siblings
		Boys	Girls					
1	P3 P4	26		3	6	7	10	Two children have their siblings in the same kindergarten but not within this group.
		13	13					
2	P5 P6	26		8	7	3	8	One pair of siblings, and one child has his sibling in a different group.
		7	19					
3	P7 P8	26		4	0	2	20	Two pairs of siblings.
		14	12					

*Table 2. Summary of the numbers of children across the age bands in Kindergarten 1, Groups 1, 2 and 3*

The youngest child across the three participating groups had started kindergarten before reaching her third birthday and was 3 years 4 months at the time of data generation. The oldest child was 7 years 3 months and due to leave for school at the end of the academic year together with another twenty-two of his peers from the three groups, 6 years 6 months being the age of the youngest child leaving for school. As outlined earlier in section 1.1, school starting age is typically the September following the child’s sixth birthday. However, on parental request made to the government Office of

Education or on the recommendation of an expert panel of the specialist services, a child’s entry to school could be delayed by a maximum of one year, should it be judged to be beneficial for the child’s early learning and development (Office for Education, 2023). There were seventeen pairs of siblings attending Kindergarten 1, four of which were registered into separate groups and thirteen into the same groups, both on parental requests. Across the three participating groups, there was evidence of siblings attending the same group as well as them being placed into separate groups.

### *The pedagogues*

The background information of the eight pedagogues (including two managers) from this kindergarten are summarised in Table 3 below.

PEDAGOGUE	GROUP	AGE (yrs) & SEX	TOTAL YRS OF EXPERIENCE	YRS IN MA GROUP	YRS IN SA GROUP	QUALIFICATION	ACCESSED CPD FOR MA PRACTICE	ASSIGNED OR CHOSE MA GROUP
P1	n/a Local manager	56+ yrs female	38	15	23	L5 (FE qualification)	No	assigned
P2	n/a	56+ yrs female	30	Regional manager never worked directly with children		BA Hons (L6)	Yes	n/a
P3	Group1	18-25 yrs female	4	4	0	BA Hons (L6)	No	chose
P4	Group1	46-55yrs female	33	10	23	No response	Yes	assigned
P5	Group2	46-55 yrs female	18	17	1	BA Hons (L6)	No	chose
P6	Group2	36-45 yrs female	6	6	0	BA Hons (L6)	No	chose
P7	Group3	56+ yrs female	37	20	17	L5 (FE qualification)	No	assigned
P8	Group3	46-55yrs female	7	7	0	BA Hons (L6) (kindergarten pedagogue) and BA Hons (L6) (lower primary teacher)	No	assigned

*Table 3. Summary of demographic information of participants from Kindergarten 1*

The manager (P2) of the Southern region was an over 56 years old female with 30 years of experience of managing kindergartens but not working directly with children. She had accessed some training specifically on multi-age practice. The regional manager was not observed in practice, and

neither was the local manager (P1) as her group did not volunteer, however she requested to be included in the Q-sort and post-sort interview. The six pedagogues who were observed had varying practice experience both in multi- and same-age groups, with their multi-age experience ranging between four and twenty years. Interestingly, pedagogues with the least practice experience only worked in multi-age groups. Three pedagogues chose the group they worked in and three were assigned to their groups. Of the six pedagogues, only one accessed any in-service training specifically for multi-age practice.

#### 4.5.2 Kindergarten 2

Kindergarten 2 was in the East Region and offered six multi-age groups to its users. This kindergarten was the catchment provision for families from low socio-economic backgrounds and was situated on a housing estate with four- and ten-storey blocks of flats. It had a generous outdoor area that wrapped round the single-storey kindergarten building. Each group had its allocated outdoor space and equipment, and children were encouraged to stay within their own areas during outside play. One of the groups contributing to the study had one pedagogue only and worked with the help of an assistant. Although typically each group would have two pedagogues, in this group, the partner pedagogue had just retired and had not been replaced yet. Kindergarten 2 followed a local programme focusing on activity based learning and early citizenship [Tevékenység Központú Program] (Fábián, 1996).

#### *The groups – Group 4, 5, 6*

The age composition of the three participating groups is summarised in

Table 4:

Group	Pedagogues	Number of Children		3-4 yrs	4-5 yrs	5-6 yrs	6-7+ yrs	Siblings
		Boys	Girls					
4	P10	26		4	6	8	8	One pair of siblings
		12	14					
5	P11 P15	25		5	4	7	9	One pair of siblings
		14	11					
6	P13 P14	27		1	10	7	9	One pair of siblings
		15	12					

Table 4. Summary of the numbers of children across the age bands in Kindergarten 2, Groups 4, 5 and 6

The youngest child only just reached the discretionary age limit of 2.5 years for kindergarten entry when she had started and was 3 years 2 months at the time of the study. The oldest child was 7 years 7 months old, and sixteen children were leaving for school from these three groups, the youngest child leaving for school being 6 years 3 months. In this kindergarten, there were 17 pairs of siblings attending the same group, two pairs who were placed in separate groups on parental request, one set of triplets in the same group and four children from the same family attending two kindergarten groups in pairs.

#### *The pedagogues*

The manager (P9) of the East region was relatively new to her post, aged between 46 and 55 years old and had 24 years of practice experience, none of which in multi-age groups. She explained that multi-age groups here were formed based on parental request approximately 15 years earlier to enable siblings to attend together. She reiterated that the change from same-age groups to multi-age groups was also supported by the Local Authority advisory group at the time.

The local manager (P12) worked directly with children but was not observed as her group did not want to contribute to the study. Similar to the local manager in Kindergarten 1, she requested to take part in the Q-sort and post-sort interview.

PEDAGOGUE	GROUP	AGE (yrs) & SEX	TOTAL YRS OF EXPERIENCE	YRS IN MA GROUP	YRS IN SA GROUP	QUALIFICATION	ACCESSED CPD FOR MA PRACTICE	ASSIGNED OR CHOSE MA GROUP
P9	n/a Regional manager	46-55 yrs female	24	0	-	L5 (FE qualification) (now equivalent to L6)	No	n/a
P10	Group4	26-35yrs female	12	12	0	BA Hons (L6)	No	Assigned
P11	Group5	46-55yrs female	27	24	3	L5 (FE qualification) (now equivalent to L6)	Yes	Assigned
P12	n/a Local manager	46-55 yrs female	20	8	12	BA Hons (L6) (kindergarten pedagogue & lower primary teacher)	No	Assigned

P13	Group6	46-55 yrs female	36	30	3	BA Hons (L6)	No	Chosen
P14	Group6	18-25yrs female	3	3	0	BA Hons (L6)	No	Assigned
P15	Group5	36-45yrs female	22	22	0	BA Hons (L6)	No	Assigned

Table 5. Summary of demographic information of participants from Kindergarten 2

Drawing on the information in Table 5, it is noteworthy that all five of the study participants from Kindergarten 2 had more experience practising with multi-age groups than same-age groups. As in Kindergarten 1, only one pedagogue, accessed in-service training specifically for multi-age practice and only P13 chose the group she was working in.

#### 4.5.3 Kindergarten 3

Kindergarten 3 was in the West Region, in a town-centre location within an affluent neighbourhood. It operated with six multi-age groups in a two-storey purpose-built building with a large outdoor area freely accessed by all children, which allowed children from different groups to mix. It also had a specialist provision for nine children with Special Educational Need and Disabilities in a separate small single storey building on the kindergarten grounds. This kindergarten followed the Freinet pedagogical approach (Freinet, 1982) and its local programme was designed on its principles of child-centredness, collaborative learning and participatory decision making with a particular sensitivity to social justice (Acker, 2007; Sivell, 1995). At the time of adopting the Freinet approach, two of the six same-age groups had volunteered to change to multi-age organisation. After the positive experiences of the pilot year, the remaining four groups were also converted into multi-age groups.

#### *The groups – Group 7, 8, 9*

The age composition of each of the three participating groups is summarised in Table 6 below:

Group	Pedagogues	Number of Children		3-4 yrs	4-5 yrs	5-6 yrs	6-7+ yrs	Siblings
		Boys	Girls					
7	P16	26		3	10	5	8	Two sets of twins
	P17	11	15					
8	P19	26		1	6	6	13	No siblings
	P20	17	9					
	P21	26		4	4	5	13	

9	P22	15	11					One pair of twins and one pair of siblings
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Table 6. Summary of the numbers of children across the age bands in Kindergarten 3, Groups 7, 8 and 9

The youngest child was 3 years 4 months, and the oldest 7 years 5 months at the time of data generation. Thirty-one children were due to leave for school at the end of the academic year, the youngest being exactly 6 years of age. At the time of my study, this kindergarten accommodated nine pairs of siblings (including three sets of twins), two of these pairs were allocated to separate groups and seven attended the same group both on parental requests. Two of the three participating groups accommodated siblings, including twins in both Group7 and 9.

#### *The pedagogues*

The regional manager (P18) for the West region was over 56 years old with 36 years of experience in the field, fifteen of which directly working with children in multi-age groups. While she was not observed in practice, the local manager (P16) was in Group7. Table 7 provides the demographic details for the study participants from this kindergarten.

PEDAGOGUE	GROUP	AGE (yrs) & SEX	TOTAL YRS OF EXPERIENCE	YRS IN MA GROUP	YRS IN SA GROUP	QUALIFICATION	ACCESSED CPD FOR MA PRACTICE	ASSIGNED OR CHOSE MA GROUP
P16	Group7	46-55yrs female	35	23	12	L5 (FE qualification) & Educational kinesiology certificate	No	Assigned
P17	Group7 Local manager	36-45yrs female	6	5	1	BA Hons (L6) & SEN qualification	No	Assigned
P18	n/a Regional manager	56+yrs female	36	15	-	L5 (FE qualification) (now equivalent to L6)	No	n/a
P19	Group8	46-55yrs female	37	23	14	L5 (FE qualification) & SEN qualification & Primary Art Teacher degree (L6)	No	Chose the group
P20	Group8	18-25yrs female	1	1	0	BA Hons (L6)	No	Assigned
P21	Group9	46-55yrs female	30	24	6	L5 (FE qualification) (now	No	Assigned



						equivalent to L6)		
P22	Group9	56+yrs female	40	30	10	L5 (FE qualification) (now equivalent to L6)	No	Chose the group

Table 7. Summary of demographic information of participants from Kindergarten 3

The pedagogues had had between one and thirty years of practice experience working in multi-age groups and it was only P20 who had not had any experience in same-age groups.

Three mature participants, P16, P21, P22 had completed their training at the time when kindergarten pedagogue training was a two-year Further Education course, therefore, they held a Level 5 qualification and substantial practice experience, ranging between 23 and 30 years. None of the study participants had accessed in-service training specifically for multi-age practice and it was only P19 and P22 who had chosen the group they were working in; the other participants were assigned to their groups.

#### 4.5.4 Kindergarten 4

Kindergarten 4 was in the North Region and was located on the affluent forest and recreational side of town. Its single storey building housed six multi-age groups and had a wraparound garden where children were encouraged stay within their own areas. This kindergarten had adopted the 'Complex Prevention Programme' (Porkolábné Balogh *et al.*, 1996) as its local pedagogical programme which is designed to support children's personal development (personality, identity, values and attitudes), with particularly focus on movement and communication. Its key feature was personal development plans for each child and an observation based development diary (Villányi, 2012). Two of the three participating groups worked with two pedagogues and one group had only one pedagogue due to compassionate leave at the time supported by an assistant.

#### *The groups – Group 10, 11, 12*

The number of children and their age distribution across the three groups is summarised in Table 8:

Group	Pedagogue	Number of Children		3-4 yrs	4-5 yrs	5-6 yrs	6-7+ yrs	Siblings
		Boys	Girls					
10	P23	25		8	10	4	3	One sets of twins
	P24	15	10					

11	P26	22		0	8	6	8	Two pairs of siblings – one in each attends this group, the other a different group.
		10	12					
12	P27	24		3	7	8	6	One child has a sibling in another group.
	P28	17	7					

Table 8. Summary of the numbers of children across the age bands in Kindergarten 4, Groups 10, 11 and 12

It is noteworthy that the age range in each group was narrower than it was typically in the groups in the other three kindergartens. In Group10 and Group12 there were no children from the 'over 7s' age group, while Group11 had no children between the ages of 3 and 4years. Group10 had significantly more of the younger children, whereas Group11 had more of the older children, which does not align with the strong advocacy for a balanced distribution of ages. The youngest child was 3 years 4 months, while the oldest 7 years 4 months and thirteen children were leaving for school at the end of the academic year, the youngest child leaving for school being 6 years 8 months. Of the fourteen sibling pairs, only Group10 accommodated a set of twins, while three children in Group11 and 12 had their siblings in other groups.

#### *The pedagogues*

The North regional manager (P25) had had forty years of working experience as a manager but not working directly with children, therefore, she was not observed. Interestingly, this was the region where the number of same-age groups was the highest: 34 out of the 47 groups across the nine kindergartens in this region (Figure 1). This meant that over half of the same-age groups across the four regions of the city were in the North region (34 out of 63)(Figure 1). This was also the kindergarten where the highest proportion of siblings were in separate groups: seven pairs were accommodated in the same group and seven pairs were allocated into different groups. This is somewhat contradictory to the regional manager's explanation of the reasons for adopting the multi-age organisational strategy: to enable parents to have their children attend the same groups when in out of home care.

The local manager (P24) was working directly with children in Group10 at the same time as fulfilling her managerial responsibilities. Table 9

summarises the background information for the study participants from Kindergarten 4.

PEDAGOGUE	GROUP	AGE (yrs) & SEX	TOTAL YRS OF EXPERIENCE	YRS IN MA GROUP	YRS IN SA GROUP	QUALIFICATION	ACCESSED CPD FOR MA PRACTICE	ASSIGNED OR CHOSE MA GROUP
P23	Group10	36-45yrs female	22	18	4	BA Hons (L6)	No	Assigned
P24	Group10	46-55 yrs female	30	10	20	BA Hons (L6)	No	Chose
P25	n/a Regional manager	56+yrs female	40	Regional manager never worked directly with children		L5 (FE qualification) (now equivalent to L6)	No	n/a
P26	Group11	36-45 yrs male	6	6	0	BA Hons (L6)	No	Assigned
P27	Group12	18-25yrs female	2	2	0	BA Hons (L6)	No	Chose
P28	Group12	26-35 yrs female	4	4	0	BA Hons (L6)	No	No response

Table 9. Summary of demographic information of participants from Kindergarten 4

The two most experienced of the study participants in this kindergarten, P23 and P24, worked together in Group10, so did the two least experienced participants, P27 and P28 in Group12. All pedagogues, except for P24, had more experience with multi-age groups than same-age groups. The three pedagogues with the least practice experience, P26, P27 and P28, had never worked in same-age groups. None of the pedagogues had accessed in-service training for multi-age practice and only two pedagogues had chosen the groups they were working in, the others were assigned.

In summary, at the time of my study, all four kindergartens operated with multi-age groups only, each accommodating children in groups between 3 and 7+ years. Seventeen of the study participants were over 46 years old and eleven were under 46 years, which suggests a mature workforce with practice experience for this over 46 years age group ranging between seven (P18) and thirty-seven years (P19). There was one male pedagogue among the study participants (3.5% of sample), which is representative of male workers in early childhood institutions across EU countries falling between 1% and 4% (Oberhuemer et al., 2010). Typically, pedagogues were assigned to the groups they were working in and only P4 and P11 indicated that they had accessed in-service training for multi-age practice.

#### 4.5 Ethical considerations

Because the research was conducted in the field of education and in Hungary, it was imperative to consider not only the ethical requirements for education research of the British Education Research Association (BERA) (2018) and my home institution but also the Ethics Code of the Hungarian Academy of Sciences (Hungarian Academy of Sciences, 2010) (HAS) along with the most current European Early Childhood Education Research Association's (EECERA) (2014) guidelines for conducting ethical educational research.

This required prior consideration of the core ethical principles of voluntary informed consent, right to withdraw, anonymity, confidentiality, privacy, beneficence and non-maleficence (British Educational Research Association, 2018, EECERA, 2018) as well as the requirements of respect, trustworthiness, objectivity, no bias or conflict of interest, transparency, due care, no coercion and responsibility (HAS, 2010). In order to ensure that ethical conduct was upheld throughout and at the various stages of the study, compliance with these principles was outlined in a research ethics application and submitted to the University of Northampton Research Ethics Committee. Subsequently, my application was approved and permission to begin field work was granted (Appendix 1).

Research ethics when human beings are involved is always emerging, relational and situational, a 'synchronised embedded element of the research process' (Palaiologou, 2013:693). What was approved 'on the desk top' may not account for every ethical dilemma that occurs 'on the spot' (Øye *et al.*, 2016:455), particularly in contexts that are marked by differences in culture and research traditions. In this current study, ethical approval was situated in one culture and the ethical issues in the field arose in another. It necessitated ethical reflexivity and sensitivity to ethical issues at every stage of the research process. This chapter section, therefore, focuses on the issues that could not be considered at the time of application.

##### 4.6.1 Being an ethically virtuous researcher

For ethics to be 'embedded in the totality of scholarly practice' (Baarts, 2009:423) I found Rest's (1982) psychologically informed four component model very useful in understanding the thought processes and actions that result in ethical behaviour. Ethical *sensitivity* enabled me to interpret

situations and identify issues that were ethically challenging, and through ethical *reasoning* I was able to identify a morally sound course of action. Decision making came through ethical *motivation*, which led to *implementing* the planned ethically appropriate course of action.

Unique ethical dilemmas arose at the various stages of conducting my study, and I endeavoured to ensure that ethical compliance was maintained in all four phases of the research. The ethical challenges will be discussed next to complement the considerations outlined in my application for ethical approval.

#### 4.6.2 Ethics in the design phase

##### *Beneficence*

My main concerns in the design phase were to ensure that my project would be of benefit and give something back to the study population. Although I had had a long standing interest in multi-age practice by the time I began my PhD studies, the principle of beneficence had to come before doing something for my own pleasure (Denscombe, 2017). There was also a moral obligation for my study to be of use (Leavy, 2017). Being a practice focused study, it had the potential to help the EC field in understanding the features of multi-age practice and to enhance pedagogic practice.

##### *Openness*

Because I was planning to conduct a cross-cultural, bi-lingual study, another important consideration for me was how I might present myself to the study population. Coming from a practitioner background in England, having been educated in Hungary, speaking the language as my mother tongue, and having some cultural awareness was in my favour to be able to carry out the research with cultural sensitivity, but these could also be the source of prejudice and bias (Coady, 2010). My bi-cultural, bi-lingual background enabled me to build a rapport with the gatekeepers in the initial stages so that trust started to develop early on (Heath et al., 2007). I realised that reflexivity around my position as an insider-outsider researcher would play a crucial role throughout my study (Grieshaber, 2010; Kara, 2018). I also felt I needed to ensure I could access help and support, which led to the appointment of an external (Hungarian) academic to join my supervisory team.

#### 4.6.3 Ethics in the data generation phase

##### *Cultural sensitivity in seeking voluntary informed consent*

Almost always, data generation involves an invasion of personal privacy to a certain extent (Stake, 1995), therefore gaining access through the acquisition of fully informed, voluntary and written consent from the various stakeholders was crucial (managers, pedagogues and children) (Coady, 2010; Hodgkin & Beauchamp, 2019). At this point, however, the necessity for ethical approval – therefore, the act of seeking written consent - was unfamiliar to the study participants and it could have been seen as culturally misplaced (Campbell-Barr, 2019). Written in a question-answer format in Hungarian, the consent form replicated the information I provided verbally, and participants felt more encouraged to sign to confirm their verbal agreement. This also privileged consent as a process rather than a product (Eaton, 2020).

##### *Children – a vulnerable group*

With the observational focus on adult-child interactions, children were also involved in the study. Being regarded as vulnerable necessitated parental consent (Coady, 2010; Sargeant & Harcourt, 2012). Although sought and gained, they were 'not an adequate standard in light of the rights of the child' (UNICEF Evaluation Office, 2002), therefore, I adopted an approach that shifted from individual assent to collective consent involving both children and pedagogues (Gibson et al., 2011). Through an informal visit to each group prior to fieldwork, information was provided verbally about children's participatory role as well as their right to withdraw. The explanation was tailored to the maturity of the children (Arnott et al., 2020) and to minimise the pressure of having to comply with adult expectations, I positioned myself in a 'least adult' role (Kirby, 2020:817). This also provided me with an opportunity to gauge how pedagogues felt about their own consent and if there may have been undue influence arising from the power differential between them and the gatekeepers (typically managers). Pedagogues were also proxies to represent children's interests and helped them make their decisions without undue pressure. Because of the possible implications of power relationships between children and adults I remained sensitive to children's wishes, verbal and non-verbal clues throughout the data generation phase (Cascio & Racine, 2018; Grieshaber, 2010; Sargeant & Harcourt, 2012).

### *Malffeasance*

Throughout the study, and in the data generation phase in particular, care was taken not to inflict social, economic or psychological harm on the participants through shame or embarrassment, coercion, travel costs or having to extend working hours. Reassuringly, there was a strong indication among participants that they valued the opportunity to talk about their multi-age practice not only for altruistic purposes but also to learn more about the pedagogical questions this model of group organisation raises (Hennink et al., 2020).

#### 4.6.4 Ethics in the analytical phase

##### *Internal anonymity*

Confidentiality presented a challenge in the analytical phase, because the findings included the voices of participants in the form of direct quotes. Although all data was anonymised, this only afforded external anonymity to be achieved. With the removal of all identifying features, internal anonymity was still not ensured (Bryman, 2016; Thomas, 2016). Removing specific features so that the kindergarten or indeed the specific group or pedagogue could not be easily identified had to be balanced with the quote providing appropriate evidence to demonstrate my point. With one male pedagogue among the participants, through using the numerical identifier and avoiding the use of the personal pronoun, I tried to protect his identity, although I realise there is no 'iron-clad guarantee' for anonymity and confidentiality (Braun & Clarke, 2014:63).

#### 4.6.5 Ethics in the dissemination phase

##### *Justice and doing no harm*

A key ethical consideration for me in this phase was justice, by which I mean reporting findings accurately and factually so that they were not inadvertently sensationalised (Hennink et al., 2020). My research integrity required me to report my findings with professionalism and honesty and offer an interpretation that was 'fair' and as unbiased as possible in order to ensure that the reporting of the research findings was not detrimental to the personal reputation and professional standing of the study population (Denscombe, 2017).

To conclude, as the above considerations demonstrate, ethical conduct during this study demonstrated compliance with both regulations and ethical

reflexivity (Gewirtz and Cribb, 2006) underpinned by the attributes and values of an ethically virtuous researcher (Rest, 1982).

#### 4.6 The methodological implications of translation

BERA's (2018:10) guidance sets the expectation that in cross-language and cross-cultural research, 'researchers should consider the effects of translation and/or interpretation on participants' understandings of what is involved.' It is suggested that the success of qualitative cross-language, cross-cultural studies hinges on how the source and target languages are used in the various phases. Therefore, it is imperative that translation is acknowledged as a methodological tool, and its implications are considered in advance (Rajan & Makani, 2016; Squires, 2009; Temple, 1997, 2002). This chapter section addresses the issues of translation, its procedures and the measures taken to ensure trustworthiness.

##### 4.7.1 Epistemological considerations

Bruner (1984) argues that there is a gap between life-as-lived, life-as-experienced and life-as-told and the direct link between text and experience has been problematised (Denzin & Lincoln, 2004; Riessman, 2007). It is also claimed that social reality-as-experienced is unique to each individual language and its 'epistemological community' (Chapman, 2006:104). Anyone speaking a different language would perceive this reality differently as each language has its own conceptual scheme, which is situated in its own cultural context (Court & Abbas, 2013). In this cross-language, cross-cultural study, these epistemological issues were even greater with the added challenge of 'life-as-told' having to be translated from Hungarian to English and subsequent analysis having to rely on these translations (Santos et al., 2015). Therefore, ensuring the fidelity of the translation to the source language was paramount (Eco, 2004).

##### 4.7.2 Axiological considerations

My positionality was also inseparable from the translation processes. Instead of framing it within the binary position of insider/outsider, my position may be better captured as a 'partial insider-outsider' or 'uncertain insider' (Kim, 2012: 274). My relationship with the research participants pivoted around the power imbalance perceived in my favour not only as a researcher with authority (Coady, 2010; Grieshaber, 2010) or the 'elite knowledge producer' (Caretta, 2014:501) but also as a translator with linguistic power (Cormier,



2018). My native-ness provided a space for emic or 'insider view' interpretations (Given, 2008:249), which had the potential to lead to more accurate descriptions and interpretations of the meanings participants conveyed in their native language. Cultural intuition was also beneficial in that it enabled me to understand culture-bound expressions and, in some instances, to pick up on 'silent understandings' (Johnson-Bailey, 1999:669).

#### 4.7.3 Considerations for the transcultural use of the research methods

Observations and interviews as methods of data generation were easily transferrable between research practices in England and Hungary due to their familiarity to both research traditions. However, the Q-method was not widely (if at all) known or used in Hungary. As discussed further on in Chapter 5.5, Q has always had a tenuous position in social sciences because of the use of numbers within qualitative studies (Ramlo & Newman, 2011; Stephenson, 1953; Watts & Stenner, 2012) but this served me well in Hungary, where the research tradition appears to have a strong affinity with mixed methods approaches and the use of numbers (Falusi & Ollé, 2008; Kontra, 2011). Although the participants were not familiar with Q, due to its similarity to the rank ordering of Likert-scales, participants were able to complete the task without difficulty. Therefore, my choices of methods were considered justifiable rather than culturally misplaced.

#### 4.7.5 The translation procedures

As my study employed a bi-lingual approach, the following questions were key to alert me to the methodological implications of translation: What should be translated? How do I address the linguistic differences between the source and target languages? What translation procedures are best suited to my data? What should the timing of these be? Who should do the translation? These questions are addressed in the sub-sections below.

I adopted a functional approach to translation primarily because it accommodated questioning terms and meanings in the source language in relation to the target language and vice versa (Maclean, 2007). This created conditions for conversations and helped reframe my perceived challenges as possibilities through using language as a heuristic apparatus and harness its potential for my research (Tazzori, 2019:4). Shifting my perspective benefitted my study in several ways: (i) increased my capability to comprehend my data (through simultaneous interlinguistic translation when

coding in another language); (ii) offered sophisticated interpretation, theoretical and conceptual hunches; (iii) helped refine analysis.

The flow-chart in Figure 2 summarises the sequential translation procedures I employed in my study.

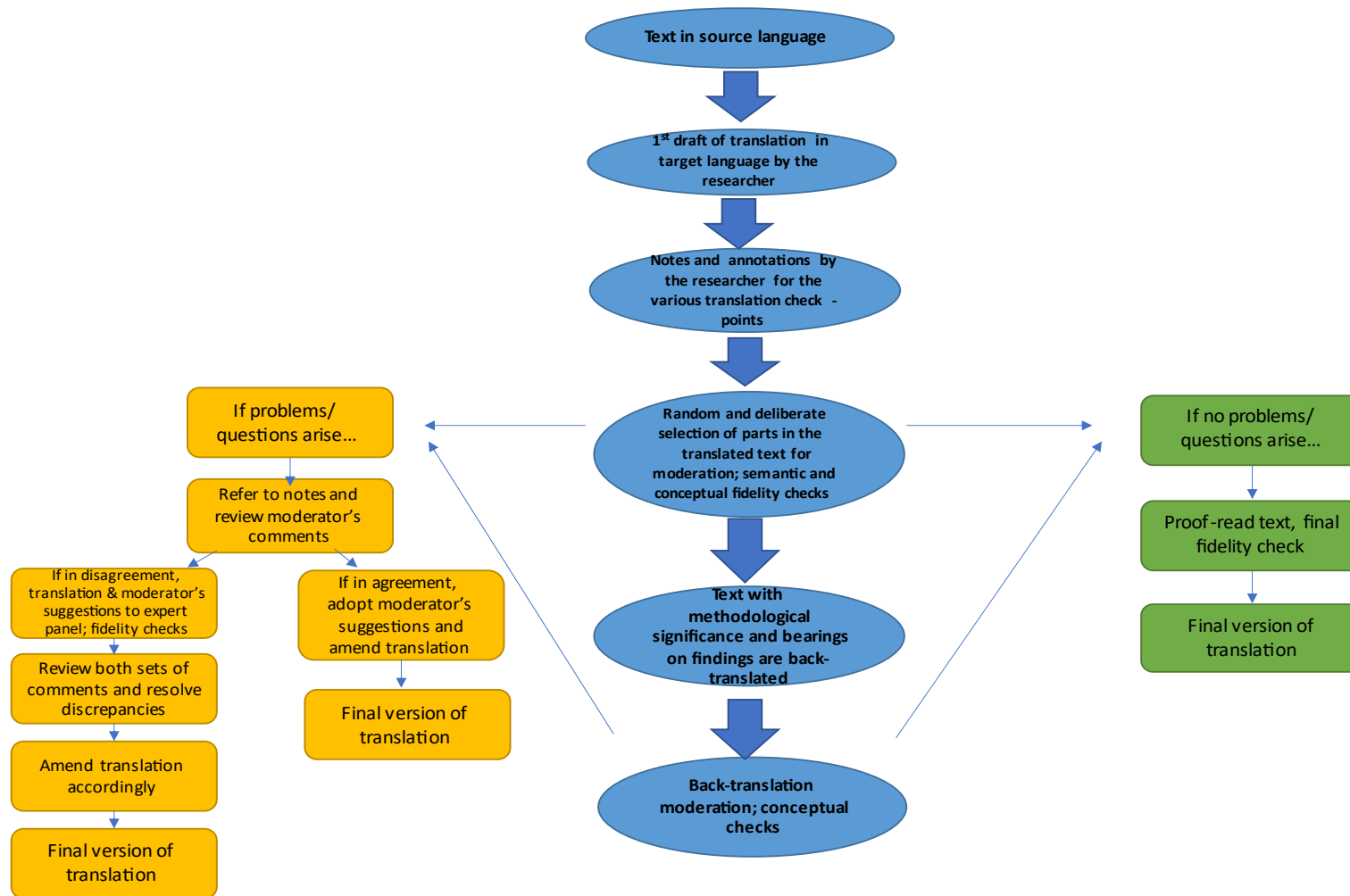


Figure 2. The sequential steps in the translation procedures

As Figure 2 demonstrates, forward and back- translation, transliteration (Regmi et al., 2010) and translation moderation (Baker, 2011) were adopted to ensure rigour and fidelity rather than the much-contested equivalence (AlBzour, 2016; Eco, 2004) in the translation process.

There were instances of the break in fluidity in my forward translation (Table 10), which could indicate autonomy as well as my loyalty to the source language, and it made me, as a translator as well as a researcher, visible (Wallin & Ahlström, 2006).

STATEMENTS	NOTES FOR MODERATOR	MODERATOR'S COMMENTS
<p>Mixed-age groups have a positive influence on young children's social development and pro-social behaviours.</p> <p><b><i>A vegyes életkorú csoportok pozitívan befolyásolják a kicsik szociális fejlődését és pro-szociális viselkedési formáit.</i></b></p>	<p>Van olyan hogy pro-szociális a magyarban??</p> <p>[Is there such a term as 'pro-social' in Hungarian?]</p>	<p>Igen a pro-szociális helyesen használt kifejezés.</p> <p>[Yes, 'pro-szociális' is a widely used term and correct here.]</p>
<p>Young children's more competent peers play a role in facilitating vocabulary development.</p> <p><b><i>A fiatal gyermekek több kompetenciával bíró társai szerepet töltenek be a a kisebbek szókinccse fejlődésének az előremozdításában.</i></b></p>	<p>Nem hiszem hogy ez így nagyon magyaros de nem tudom mire fordítsam a 'facilitate'-et.</p> <p>[I don't think this sounds very fluent in Hungarian but I am not entirely sure how to translate 'facilitate'.]</p>	<p>Ha a 'példamutató-t' hozzáteszed, úgy jó lesz.</p> <p>A kisebb és a társainál több kompetenciával bíró gyermekek szerepet töltenek be a többiek szókinccse fejlődésének az előmozdításában/segítésében.</p> <p>[If you add példamutató it will capture the meaning better.]</p>

Table 10. An example that demonstrates the break in fluidity in forward translation

When there was a concept that was well understood and frequently used in either English or Hungarian but completely lacked in the other, through the deconstruction of terminologies, 'transliteration' was used instead of translation (Regmi et al., 2010). Examples were terms such as 'agency' or 'szokásrendszer' [a system of habits] frequently used in one language in the context of ECEC but completely lacking in the other (Table 11). Insisting on semantic equivalence, rather than conceptual fidelity, would have brought with it an unavoidable loss of meaning and the sense of cultural difference (AlBzour, 2016; Court & Abbas, 2013).

IN SOURCE LANGUAGE	IN TARGET LANGUAGE – first attempt	MODERATORS' COMMENTS	BACK-TRANSLATOR'S COMMENTS	FINAL VERSION OF TRANSLATION THAT REFLECTS CONCEPTUAL AND DYNAMIC EQUIVALENCE
Mixed-age groups provide children with a sense of <b>agency</b> and create a feeling of family and community.	<u>Vegyes életkorú csoportok biztosítják a gyermekek számára az önirányítás érzését?? és egy családi, közösségi érzést teremtenek.</u>	VNA: 'sense of agency' is difficult to translate to Hungarian, we have not really got a word for it. It could be 'Önállóság' or 'Önszabályozás'. Or, instead of trying to find a word, you could explain it in a sentence: that children are able to make their own decision and lead their own play as experts in their own lives in a mixed-age group... what do you think?  Prof ZsM: I would suggest that you could either use 'önirányítás' as you are suggesting here or 'Önmeghatározás' and put 'agency' in brackets.	The term 'sense of agency' does not exist in the Hungarian language. In addition to that the potentially different meanings and usage of the word 'agency' provide further difficulty for the translator. I would definitely <u>consult</u> somebody with a deeper insight into early years education and the related professional terminology before attempting to find a precise translation for this particular phrase in my language.	<u>Vegyes életkorú csoportok annak a lehetőségét biztosítják a gyermekek számára, hogy maguknak hozzanak döntéseket és irányítsák a játékokat annak az érzésével, hogy ők szakértői a saját játékuknak. Vegyes életkorú csoportok családi és közösségi érzéseket is teremtenek.</u>

Table 11. An example of transliteration

As seen in Figure 2, an expert panel with language and cultural expertise, and subject and methodological understanding was recruited and utilised to check for cultural, conceptual and semantic fidelity and congruent value (Chen & Boore, 2010; Liamputtong, 2010; Temple & Young, 2004) of my translation when backward translation or translation moderation identified discrepancies (Table 12).

IN SOURCE LANGUAGE	IN TARGET LANGUAGE – first attempt	MODERATORS' COMMENTS	BACK-TRANSLATOR'S COMMENTS	FINAL VERSION OF TRANSLATION THAT REFLECTS CONCEPTUAL AND DYNAMIC EQUIVALENCE
Older children naturally, often unconsciously, erect scaffolds that allow younger children to stretch their skills.	<u>Az idősebb gyermekek természetesen és gyakran nem tudatosan, támasz szerkezeteket építenek a fiatalabbak számára, hogy a képességeiket próbára tegyék.</u> 'erect scaffolds' az, aminek nehezen találok a magyar fordítását [ 'erect scaffolds' is what I am finding difficult to translate]	Prof PS: Szerintem használhatod a proximális zónák kifejezést, mert mind a kettő ugyanahhoz a Vigotszkij koncepcióhoz kapcsolódik.	'Proximális zónák' is a concept that is closely related to it but not quite the same. It is the scaffolding that keeps children in the ZPD so, I feel, that the two cannot be translated the same and used interchangeably. I think your first attempt of translating 'scaffolds' is acceptable here and conveys the original meaning well. I would replace 'építenek' with 'biztosítanak'.	<u>Az idősebb gyermekek természetesen és gyakran nem tudatosan, támasz szerkezeteket biztosítanak a fiatalabbak számára, hogy a képességeiket próbára tegyék.</u>
Key components of mixed-age learning is independent learning, problem solving, empowerment, responsibility for own learning.	<u>A kulcs összetevői a vegyes életkorú csoportoknak az önálló tanulás, probléma megoldás, ??? és felelősségvállalás a saját tanulásért.</u>  Empowerment – meghatalmazás-felhatalmazás This does not quite feel right because it does not quite capture the 'self'.	VNA: Érttem amit mondasz és a 'hatalom' szó nem biztos hogy a legjobb itt. 'Önerő' nem lenne jó?  I think 'legitim önérvényesítés' captures it very well.	I agree with the translation. Suggestion for 'empowerment' in Hungarian: 'legitim önérvényesítés'.	<u>A kulcs összetevői a vegyes életkorú csoportoknak az önálló tanulás, probléma megoldás, legitim önérvényesítés' és felelősségvállalás a saját tanulásért.</u>

Table 12. Examples of negotiation between the translator, moderators and back-translator.

#### 4.7.6 The timing of translation

There does not seem to be a methodological consensus as to the timing of translation; it tends to vary depending on the needs and requirements of each individual piece of research (Shklarov, 2007; Squires, 2009). In this

study, early phase translation was required in the preparation of the research instruments for data generation. Data generation itself took place in the source language (Hungarian) and translation followed after the preliminary analysis. With two English speaking principal supervisors and one Hungarian external supervisor, the timing of translation needed to ensure possibilities of involvement and understanding for all. Preliminary analysis in Hungarian provided the foundations for the second phase analysis in the target language (English).

One criterion for the trustworthiness of qualitative cross-language/ cross-cultural study is when the meanings and experiences of the participants are as close as possible to the meanings as interpreted in the findings (Eco, 2004; Tazzori, 2019). In this study, meaning was transferred between the phases of analysis, which if lost, could have reduced the trustworthiness of the study. Being a bilingual researcher placed me in a unique position to safeguard meaning and representations in these transitional periods. My constant presence at the debates and discussion around the issues in translation provided the opportunity to reveal new layers of meaning, which contributed to creating the most faithful translation that the research design afforded.

#### 4.7 Quality considerations

There are no universal criteria to judge the quality of a piece of research, but various quality criteria have been developed with both prospective and retrospective purposes: to ensure and to evaluate a research study one undertakes (Braun & Clarke, 2014). Lincoln and Guba (1985) suggest measuring quality by trustworthiness, which is an umbrella concept used to capture measures employed to ensure the quality of a study and to check the alignment between the philosophical, ontological and epistemological underpinnings and the research design.

The key components of trustworthiness are confirmability, dependability, credibility and transferability, which correspond with the four criteria widely used to judge quantitative research of an experimental design: objectivity, reliability, internal and external validity (Guba, 1981; Lincoln, 1995).

Although Lincoln and Guba (1985) were criticised for this apparent parallel, their four criteria focus primarily on methodological concerns, which are, to

this day, found very useful and widely employed by qualitative researchers (Lewis-Beck et al., 2011).

#### 4.8.1 A set of criteria suitable for this study

Since Lincoln and Guba's work (1985), debates continue around the ever changing nature of what is regarded as good quality research (Creswell, 2007; Gordon & Patterson, 2013; Mertens, 2015; Tracy, 2010). Indeed, Hammersley (2007) questions if a single set of criteria is at all possible to determine the quality of qualitative research. To articulate measures taken to ensure the rigour and quality in my own study, I needed a model that drew on the 'classic' trustworthiness principles but also accommodated the salient features of my research.

In consideration for its bi-lingual and cross-cultural nature and with its focus on practice, Yardley's (2008, 2017) and Lincoln and Guba's (1985) principles were used conjointly in my study. Yardley's (2008, 2000) four open-ended and flexible principles (sensitivity to context, commitment and rigour, transparency and coherence, impact and importance), a theoretically neutral set of quality criteria (Braun and Clarke, 2014), show congruence with Lincoln and Guba's (1985) criteria in that they have 'confirmability', 'dependability' and 'credibility' already embedded in them. Table 13 below lists the combined five quality principles adapted from these two sets and the ways in which these concepts have been considered throughout my research.

Having engaged in critical reflection and reflexivity throughout my project, I believe that the trustworthiness of this current study has been evidenced throughout this thesis, and could be summarised as: the social constructivist philosophical stance is acknowledged and my sensitivity to the study context is demonstrated; the case is carefully selected and justified; the research processes are clearly explained; great care was taken in selecting methods for generating data and the procedures are documented in a transparent and auditable way; the unit of analysis is identified and the approaches taken to data analysis are clarified and congruent; on the basis of evidence and the reasoning provided, the conclusions drawn are 'warranted assertions' (Dewey, 1938:4).

<b>QUALITY PRINCIPLE</b>	<b>KEY COMPONENTS EXPLAINED</b>	<b>MEASURES TAKEN TO ENSURE THAT CRITERIA IS MET</b>
<p><b>Sensitivity to context</b> (Yardley, 2000, 2008)</p>	<p>A grounding in the philosophical approach adopted (Guba &amp; Lincoln, 1998).</p> <p>Awareness of relevant extant literature and related empirical work.</p> <p>Awareness of the socio-cultural context of the study and the relationship between the participants and the researcher (Coady, 2010; Denzin &amp; Lincoln, 2013:31)</p>	<p>A social constructivist approach employed through the study and reflected in every decision made.</p> <p>Extant literature (in both languages) and related empirical research findings are evaluated and reviewed.</p> <p>The broader and inside study context sections of the thesis reflect my awareness of the socio-cultural context.</p> <p>The design of the study has incorporated considerations for the perceived power imbalance between myself and the study participants.</p>
<p><b>Commitment and rigour</b> (Yardley, 2000, 2008)</p> <p><b>Dependability and Credibility</b> (Lincoln &amp; Guba, 1985)</p>	<p>Prolonged engagement at the site (Guba, 1981; Lincoln, 1995)</p> <p>The development of skills in using the methods of data collection.</p> <p>Immersion in data. Peer briefing to test out one's growing insights into the phenomenon under study, to expose one's thinking to probing questions (Guba, 1981:5)</p> <p>Adequacy of the sample (Watts &amp; Stenner, 2012)</p>	<p>Concentrated but sustained time spent in each kindergarten to conduct fieldwork. A timetable used for data generation to sample practice in varying circumstances and times of the day.</p> <p>Personal diary reflects my observational skills developing and the growing confidence this affords as well as researcher fatigue.</p> <p>Immersion in data is achieved by: translating it from Hungarian to English; iterations of initial observational findings (still in Hungarian); critical discussion with my Hungarian supervisor; interpretation of extracted factors checked with supervisors and a fellow PhD student employing Q-methodology; peer briefing was via personal communication with Simon Watts (author of <i>Doing Q-Methodological Research</i>) and Prof Rachel Baker at a Q-methodology 2-day convention.</p> <p>Q-method &amp; Observational sample: purposive sampling to generate in-depth understanding.</p>



	<p>Attempt to demonstrate a faithful picture of the phenomenon under investigation. Member checking ensures the records and reporting are an accurate account of the lived experiences of the participants (Rolfe &amp; Emmett, 2011)</p>	<p>Member checking took place at the preparatory stage of the Q-set (focus group member took part in the concourse reduction activity so she could authenticate the accuracy of statements drawn from the focus group); asked participants to clarify or exemplify what they meant in their rank ordering of the Q-set to ensure I shared their understanding.</p>
<p><b>Transparency and coherence</b> (Yardley, 2000, 2008) <b>Confirmability</b> (Lincoln &amp; Guba, 1985)</p>	<p>Clear convincing argument that does not describe but construct a version of reality (Bruner, 1991)</p> <p>Coherence is achieved by a fit between the research question, the philosophical perspectives, the methods employed and the analysis</p> <p>Transparency includes:</p> <ul style="list-style-type: none"> <li>• taking responsibility for ensuring that the process was logical, traceable (trackability (Guba, 1981), and documented, with all relevant procedures disclosed</li> <li>• This translates to 'replicability' as for the procedures employed in Q-method (van Exel et al., 2015) but not</li> </ul>	<p>Whilst constructing the individual pedagogue and factor profiles, I endeavoured to 'stay close' to the raw data. Structured crib sheets, joint displays were used to facilitate the interpretation of data findings. Researcher awareness and acknowledgement that findings are drawn from subjective configurations of both self-reported and enacted practice, through the eyes of the researcher illuminating things that might have otherwise been overlooked.</p> <p>Constructive alignment between the research aim, philosophical stance and methodological choices.</p> <p>The auditability of the data corpus is shown in Chapter Five and the appendices.</p> <p>The research processes and procedures are presented in detail to allow for the possibility of replication. Evidence for this is included in the Appendices for both the Q-method and observations.</p>

	<p>for the 'views' constructed (Watts &amp; Stenner, 2005a)</p> <ul style="list-style-type: none"> <li>• how the researcher stance and experience of the world (motivation, assumption, actions) influences the research findings. Lincoln and Guba (1985:290): 'the degree to which the findings of a study are determined by the [participants]' and not the 'biases, motivations, interests, or perspectives' of the investigator (confirmability)</li> </ul>	<p>Factor solution selected that allows for the most participants to be included in the factor interpretation processes. All observed pedagogues' profiles considered in the identification of practice clusters.</p> <p>Engaging in reflexivity throughout, questioning own assumptions, biases, beliefs and being aware of the possible influence of prior personal experiences. An attempt to mediate against this is the use of supervisor and peers to crosscheck understanding and to keep a priori assumptions under control.</p>
<p><b>Transferability</b> (Lincoln &amp; Guba, 1985)</p>	<p>In <b>small scale</b> research generalisations are not possible because the findings are intimately tied to the context and time of the investigation. The power and legitimacy lie in their exemplary knowledge of the <b>phenomenon</b> that has been explored, not in their generalisability (Thomas, 2016:69).</p> <p>Transferability requires provision of rich descriptions of both the transferring and receiving contexts for readers to be able to judge the relevance of the research and decide whether the claims made can be justifiably transferred to their context or not (Schwandt, 2007).</p>	<p>The study aimed to develop an in-depth understanding of multi-age practice in the Hungarian kindergarten context, with no intention to generalise findings.</p> <p>Purposive sampling ensured context relevant findings.</p> <p>'rich descriptions' of the study contexts (locations, participants, curriculum approaches...etc).</p> <p>Considering and articulating the strengths and limitations of the study.</p>
<p><b>Impact and importance</b> (Yardley, 2000, 2008)</p>	<p>The practical importance and the utility of the research to the community it was intended for.</p>	<p>The study fills a gap in empirical research and an in-depth documented understanding of multi-age practice.</p>

	<p>Not 'to map and conquer the world but to sophisticate the beholding of it' (Stake, 1995:43)</p>	<p>The study findings could potentially influence policies and practices.</p> <p>It is hoped that participants engage in critical reflection and revisit their understanding of multi-age practice. To enable this, a practitioner friendly research report is provided for all participating kindergartens.</p>
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Table 13. Quality criteria for qualitative research (Adapted from Lincoln & Guba (1985) and Yardley (2000, 2008))

#### 4.8.2 Reflexivity – Researcher identity

There appears to be a firm agreement on the impossibility of a neutral position for anyone conducting research (Grieshaber, 2010; Wellington, 2015; Musgrave, 2019). Social constructivist research is, by nature, subjective. Therefore, it is my responsibility to foreground my own interests, motivations and investments explicitly here. This foregrounding is what (Grieshaber, 2010:186) refers to as reflexivity. Being reflexive implies that I recognise that I am part of the social world(s) that I am investigating. Although it is not possible to be fully aware of my own subjectivities, undoubtedly, my long and intimate connection with 'multi-agedness' has influenced the way I have conducted myself throughout this study and the decisions I have made.

Wellington (2015: 102) recommends three layers for the examination of taken for granted assumptions, which can influence the outcomes of my study: first, self-reflexivity of my own values, ideas, prejudices and motivation. It drew my attention to the influence of my past experiences and prior knowledge of some of the kindergartens used as locations for my study (Malaurent & Avison, 2017). Secondly, I also needed to be aware of the assumptions of the settings: how their values were reflected in their ethos and the local pedagogical programmes they are working with and the assumptions due to possible sub-cultures. Finally, in demonstrating domain reflexivity, I needed to examine the language used when talking about multi-age practice to ensure everyone has the same understanding (Malaurent and Avison, 2017).

#### 4.8 Summary

To ensure transparency and to make the internal logic of the research design visible, in this chapter the methodological design of the study has been explained. I have argued that **this study** effectively combines the use of the Q-method to elicit viewpoints and observations to capture enacted practice. The subsequent chapter outlines the phases of data generation and data analysis and the specific methodological procedures employed in each phase.

## CHAPTER FIVE: Methodology - RESEARCH PROCEDURES

This chapter presents a detailed discussion of the procedures and phases of both data generation and analysis. The two methods selected for data generation are observations and the Q-method. A justification is offered for both in the sub-sections that follow a brief outline of the timeline for data generation.

### 5.1 Phases of data generation

The study location being in Hungary posed some restrictions as to the timing and the duration of fieldwork. The various phases of data generation were planned to be completed during my three-month PhD student mobility (from April to July 2018) and the phases outlined below in Figure 3 were planned for Q-method and observations to run parallel.

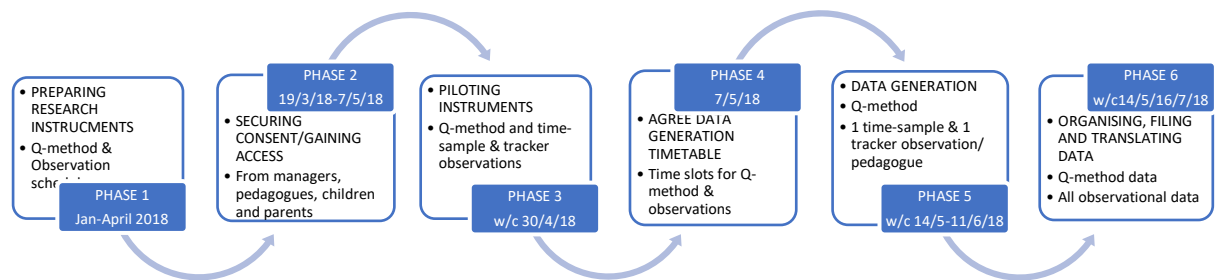


Figure 3. Timeline for the six phases of data generation

### 5.2 OBSERVATIONS – to capture action

Observations were used to generate evidence on the basis of which to provide a systematic description of the features of enacted multi-age practice, first individually, then collectively. To describe everything was impossible, therefore, a focus needed to be identified, which, in this study, was the pedagogues' interactions with children. How pedagogues interacted with children was considered as valid indicators of the characteristics of pedagogic practice (Ansari & Pianta, 2019b; Veraksa & van Oers, 2011) for the following reasons: (i) adult-child interactions are considered to be one of the most salient and 'profoundly important' aspects of teaching and learning in early childhood (Fisher, 2016:1; Hamre et al., 2012; Rudoe, 2020); (ii) interactions give indications of the how-s of practice in early education and

care (Siraj-Blatchford et al., 2002); (iii) they also capture the social and instructional aspects of practice (Ansari & Pianta, 2019b).

Here, I realise I have made the assumption that the observed pedagogues' interactions were expressive of the values they held in these professional contexts (Billups, 2020). The detailed explanation of the aims of the research and the observational foci that was provided to secure consent from the participants meant that they were fully aware what I was observing. This presented a kind of intrusion, which could have potentially influenced their behaviour (Hawthorne effect) (Angrosino, 2014; McCambridge et al., 2014). What was captured was my impressions and interpretations rather than an exact image of pedagogues' actions (Barrow and Woods, 2006). The selection of interactions in itself reflects the influence of implicit theories and pre-existing conceptualisation of multi-age pedagogic practice and what I have judged to be relevant and important (Biesta, 2020; De Vaus, 2001).

A semi-structured observation technique (McElwain, 2018) realised in time sampling and tracker observations, was used. Had I selected unstructured observations, they may have only offered an 'impressionistic judgement' (Gillham, 2008:5), which may have proven unsatisfactory in relation to the research questions and the coherence of the research design. On the other hand, because fully structured observations have a 'thin mechanistic quality' (ibid, p.9), they may have yielded rather detached data and posed more questions than answers. Therefore, the selected semi-structured design with its somewhat open nature enabled focus on the content (qualitative) and the frequency or longevity (quantifiable) of interactions allowing an inductive approach to be combined with the deductive as the two layers of analysis (Braun & Clarke, 2021b; Punch & Oancea, 2014).

### 5.3 Observational procedures

Using observations, data were generated through engagement with the daily lives of selected kindergarten groups. My level of participation could be described as passive: I did not interact or take part in activities but observed, from a vantage point, a 'continuous stream of movements and events' broken down into observable units of interactions (Billups, 2020).

The process of observing and recording were guided by an agreed timetable and schedules, which constituted the explicitly formulated procedures to

ensure that my approach was systematic and consistent with each of the twenty-two pedagogues of the twenty-eight study participants (six participants were managers not working directly with children). This afforded meaningful comparison between the observational records.

Observation schedules were used as 'analytically focussed resources' to help me focus my attention on pedagogues' interactions (Appendices 2 & 3) (Gibson & Brown, 2009:22) for four full days, taking care that the typical phases in a normal day were adequately represented. The first day of each week was used for familiarisation and preparatory purposes and as an adaptation period to reduce observer influence (Coady, 2010). In kindergarten 2, due to my time restricted to 3 days only, I needed to adjust my plan, but I felt that for ethical reasons and the quality of the observations it was important to keep the day of familiarisation and reduce both the tracker and time sampling observations from six to four providing the total of twenty-two observation units of each kind across the four kindergartens. Table 14 below summarises the type and number of observations as well as their coverage. Although the intention was to carry out one tracker and one time-sampling observation of each pedagogue's practice, due to absence and changing shifts, it was not possible to capture their interactions in a neat package like that.

Type of observation	Number of observations	Number of pedagogues observed	Time coverage
Tracker	22	16	Total of 1575 mins (26hrs 15mins) Kindergarten 1: 420mins Kindergarten 2: 330mins Kindergarten 3: 420 mins Kindergarten 4: 405 mins
Time sample	22	18	Total of 1470 mins (24hours 30 mins) Kindergarten 1: 410 mins Kindergarten 2: 250 mins Kindergarten 3: 405 mins Kindergarten 4: 405 mins
Field notes - retrospective	22	22	N/A

Table 14. Summary of the number of observations taken and their coverage

### 5.3.2 Time sample

Time sampling, or interval sampling, provided a sequence of snap-shot observations that were taken over a 15-second time period at three-minute intervals (Appendix 2). The purpose of this sampling was to establish, in a continuous time sequence, the frequency of the various styles of interactions (Gillham, 2008). Individual pedagogues were observed for either 60 or 75 minutes. Structuring these observations enabled me to use the same procedures with each research participant, therefore, facilitating meaningful comparisons. Taking a sample at set time intervals also allowed for the regularity of interactions, contributors to proximal processes, to be tracked, so the choice of this observation method was in-keeping with the bio-ecological theoretical framing (the chrono-system in particular) of this study. However, time samples did not provided me with the rich detail naturalistic observations would have (Angrosino, 2016) so in this regard, I found them wanting, hence the use of field notes (see section 5.4) and tracker observations (section 5.3.3) that offered more qualitative detail of pedagogues' everyday interactions with children.

The schedule for the time sampling observations included items that were relevant for the purposes of the investigation, and they occurred with sufficient regularity to be able to collect a reasonable amount of data (Denscombe, 2017). These were: the *participants* of the interaction, the *direction* of the interaction (who was initiating it), the *content* of the interaction and how interactions related to the *age heterogeneity* of the group. Four low-inference predetermined categories (Schermer & Fosker, 2019) were used to record between whom the interactions took place and what their directions were: 'adult to child', 'child to adult', 'adult to adult' and 'no interaction' and the coding was synchronous. Inductive coding of the content of the interactions and whether they utilised or inhibited group age diversity were asynchronous processes.

### 5.3.3 Tracker

Tracker observations followed the movements of individual pedagogues over the pre-determined 60 or 75-minute periods to gain a reasonable insight into the practice of each observed individual (Appendix 3). The temporal dimensions of both the time-samples and tracker observations yielded quantifiable data, the frequency and duration of interactions (McKechnie, 2012) and also qualitative data regarding the content of interactions.



The schedule for the tracker observations included: the measure of the *length of time* each pedagogue interacted with others in a particular way and the *content* of these interactions. The recordings were taken as a continuous narrative for each interaction period until they changed in nature. Whether the potential inherent in age-diversity was harnessed or forgone was established post-observation drawn from the qualitative detail in the records. When there was evidence in observed adult-child interactions of pedagogues' awareness of the potential inherent in multi-agedness through encouraging mixed-age play and/or deliberate attempts to utilise the mix of ages, the 'harness' label was used. In instances where pedagogues showed no awareness or attempts in their interactions to draw on the potential that age-diversity offered (or indeed made attempts to separate children into their biological age groups), the interactions were labelled as 'forgo'. (For examples, see Phase Three description in sub-section 5.12.4.). Thematic coding of the content of the interactions took place inductively after data generation (Braun & Clarke, 2006; Robinson, 2021).

#### 5.3.1 Pilot – preparing the instruments

The purpose of the observation pilot was two-fold: (i) to pre-test my skills required to use the time-sample and tracker observations; and (ii) to test the design elements of the research instruments. It was a vital step in gaining reassurance that the choices and decisions made were practically feasible and appropriate to address the research questions. Both the time-sample and tracker observation schedules were piloted in both England and Hungary prior to data generation. As a result of the first pilot in England, the interval of the time sampling observations was reduced from observing every five minutes to every three minutes to maximise the amount of data possible to gain. Completing a tracker observation helped develop my sensitivities to notice the changes in the nature of practitioners' interactions.

In the pilot carried out in Hungary, I used this already adjusted schedule, which enabled me to have a feel for recording the observations in Hungarian. To maximise the limited time period available for field work I also wanted to test and finetune the length of time I could pay attention to observing the pedagogues' interactions and movements. As a result of this, I felt I would be able to extend the periods of observation to 75 minutes,

should the agreed timetable require or allow it. Twelve of the tracker and nine of the time-sample observations were extended to 75 minutes.

Although the observation schedules included columns to record 'strategies employed' and 'harness/forgo age-diversity', no pre-determined categories had been identified. The intention was that the categories would be developed from the data via inductive thematic analysis. Both pilot observations confirmed that it would not be possible to make judgements about the employed strategies or how age-diversity was handled at the time of taking the observational records without compromising my sustained and focused attention on what was happening at the time. Therefore, these were established asynchronously, which also helped to keep a priori assumptions under control (Lincoln and Guba, 1985).

#### 5.4 Field notes

Field notes were taken to tell the story that was not necessarily captured through the semi-structured observations (Denscombe, 2017) (Table 14). Written as a narrative, they were to aid reflexivity (Braun and Clarke, 2014). They described the context in which each kindergarten pedagogue worked, recorded my impressions of the circumstances in which pedagogue interactions took place and the key features of how pedagogues worked in age heterogeneous environments. These involved 'on-the-fly' notes (Leavy, 2017:136), or 'interpretative asides' (Simons, 2009:119), which were jottings of words and phrases recording details as they occurred to me in situ while in the setting, to be able to take them forward when working through the data later (Appendix 2). I also made retrospective notes written out of the setting (typically at the end of the day) for each pedagogue to remind myself of particularly interesting features of observed practice. They offered additional insights into the data, but I am mindful that they could be challenged because of the possibility of 'hindsight adjustments' (Kellett, 2012:48) and because they were records of recollection and interpretation (Denscombe, 2017). However, the retrospective notes were taken before focused analysis, therefore, adjusting my notes without knowing what the findings might be, were not likely to happen.

#### 5.5 Q-METHOD to elicit views

As Q is widely used to capture participant-led subjective viewpoints about personal experience (Stainton Rogers, 1995), I employed this method to

seek pedagogues' perspectives of the characteristics of their practice in multi-age environments.

#### 5.5.1 What is Q- Methodology? A brief synopsis

Q-methodology was originally developed by William Stephenson in 1935 and appeared as a simple but innovative adaptation of factor analysis (Watts & Stenner, 2012). It continues to be used today as it provides a systematic, statistically rigorous approach to studying human subjectivity, where subjectivity refers to the communication of a personal viewpoint (McKeown & Thomas, 2013:2). It is widely employed, for example, in the field of health (Baker, *et al.*, 2006; van Exel *et al.*, 2015), psychology (Watts & Stenner, 2005b) human geography (Eden *et al.*, 2005; Robbins & Krueger, 2000) and education including early childhood (Brown & Rhoades, 2019; Ellingsen *et al.*, 2014; Fargas-Malet *et al.*, 2010).

Q-methodology has two central beliefs: (i) that subjectivity can be communicated (therefore recorded) and then measured (Brown, 1980, 1996; McKeown & Thomas, 2013) and (ii) that subjective viewpoints come out of a position of self-reference (Stenner, 2009; Watts & Stenner, 2012). Its synergy with qualitative methodologies is in its focus on rich and subjective data, whereas it resembles a quantitative methodology in that it uses statistical techniques such as factor analysis and by-person correlation. It seeks to construct meaning in a discursive way by keeping a focus on the meanings individuals place on a phenomenon under study (Simons, 2013; Watts *et al.*, 2017). The quantitative features of Q-methodology render it an unusual but still qualitative research methodology as it allows the researcher to quantify qualitative data (Stenner *et al.*, 2017). Therefore, Q-methodology operates with an *ontology* where realities are occasions of experience, they are subjective, discursive and complex. It assumes an *epistemological* position where the researcher, who enquires, and the participants whose views are inquired into, are interconnected in an interactive process, each having a dynamic influence on the other, so realities are socially and experientially constructed (Ramlo, 2016; Stenner *et al.*, 2017)

Q-methodology gains insights into views through a rank-ordering exercise of a heterogeneous set of stimulus items, known as the 'Q-set' (McKeown &

Thomas, 2013:4) and enables researchers to 'observe' subjectivity scientifically, through which minimising researcher bias (Ramlo & Newman, 2011; Stephenson, 1953). In the sorting process, those items that hold high psychological significance to a participant are ranked highly, and those of less significance are scored lower. The completed Q-sorts are subjected to by-person correlation and factor analysis, which reveals patterns of viewpoints. Factor analysis looks for groups of participants who have sorted the stimulus items in a similar fashion. Each extracted factor can potentially identify a group of participants who make sense of the Q-sort in a similar way and share similar views about a topic. There are five distinct stages of Q-methodology: developing the concourse, reducing the concourse to the Q-set, the actual Q-sort, extracting the factors and factor interpretation (Simons, 2013; Watts & Stenner, 2005a, 2012).

#### 5.5.2 Methodology or method

Q, as a research methodology provides a way of thinking about one's research and the distinct stages listed above reflect its internal logic and provides a systematic approach (Brown & Rhoades, 2019; Stenner, 2009) to 'empirical discoveries of a qualitative kind' (Stephenson, 1936:205). With the same procedures involved, Q is also used as a research method (Stenner, 2009; Watts & Stenner, 2005a, 2012) and my study utilises Q as a method for data generation to align with one of the research objectives: seeking pedagogues' views on the characteristics of their practice in multi-age groups. The five sequential procedures listed above, therefore, do not provide the logic for the entire research design, only for one part of it. To meet my study needs, I also added the pre-sort demographic questionnaire and a post-sort interview with each participant to increase the richness of the data, therefore, to achieve a fuller and more detailed understanding of each Q sort (Gallagher & Porock, 2010). The sequential design ensured the transparency and the rigour in the data generation procedures, which for clarity, are summarised in Figure 4.



Figure 4. Summary of the seven sequential Q method stages and their procedures

### 5.5.3 Justifications for the use of Q-method

Before selecting Q-method, other instruments to elicit views were also considered for my study, such as Likert-scales or the Delphi technique. Likert-scales would have been equally useful in building a degree of differentiation in participants responses. A closed questionnaire design would have been as quick and as easy for practitioners to complete and could have enabled me to select a larger sample size (Bryman, 2016) possibly more conducive for the results to be generalised to wider population of early childhood practitioners. However, I felt that using Likert-scales would not capture the personal sensitivities of participants' viewpoints on the characteristic features of their multi-age practice as participants would be confined to a maximum of 7-scale structure and the statements would have reflected my *a priori* assumptions.

The Delphi technique as a possible alternative to Q, was primarily designed to obtain the most reliable consensus of the opinions of experts (Landeta,

2006; Okoli & Pawlowski, 2004), who may approach an inquiry from a theoretical rather than a practical angle. Granted, they would bring a wide range of knowledge to the investigation, however, my study focuses on multi-age practice, therefore, seeking pedagogues' views rather than experts' views enables me to focus on particulars as opposed to universals (Rogerson et al., 2011). Employing the Delphi method requires several consulting rounds with experts, which is time-consuming and was not practical for me due to the limited time I had for field work conducted overseas.

I chose Q-method as it offered a rigorous approach to eliciting personal views while retaining the depth and richness of diversity and individuality that my study required. It offered a way to gain access to and explicate pedagogues' viewpoints in a systematic and qualitatively rich fashion (Watts and Stenner, 2012). Due to the self-referential nature of the sort, meaning was only attributed to a statement by the participant at the time of sorting and in relation to the other statements and nothing or no one else (Simons, 2013; Watts et al., 2017). Although Q claims to seek and respect respondents' views expressed in their sorts, yet the structure of the sorts in the upside-down pyramid-like grid forces respondents to rank only a few statements at the extremes of  $\pm 5$  and  $\pm 4$  (two and three respectively in my study) and rank a greater proportion of the statements at or near the neutral (0) (Akhtar-Danesh et al., 2008; Kampen & Tamás, 2014). While Q literature, albeit inconsistently, prefers a structured sort over an unstructured one for its ability to reduce the extremity of views (Brown, 1993), the forced nature of the sort limited the expression of the full strength of a view (Kampen & Tamás, 2014). The advantage of this was that it enabled me to get a purchase on interpreting the views in each extracted factor, with the acknowledged caveat that the forced ranking had increased correlations across respondents by reducing the variance in rankings (Kampen & Tamás, 2014). Using Q as a method rather than a methodology brought the benefit of allowing me to draw on data from participants who did not load on any of the factors to gain clarity of not only what a view was, but also of what it was not.

I felt that by putting checks on speculation, Q-method was amenable to reducing my investigator bias (Stephenson, 1986) and giving participants a significant level of control. While Cascio and Racine (2018) claim that the sorting exercise could be considered as an attempt to locate some of the power with the participants, there are others who question the claim that Q distances the bias of the researcher (Robbins & Krueger, 2000).

One of the aims of this study is to develop an understanding of features of multi-age practice through extracting the significance and the meanings participants' views carry. For this, I needed a research instrument that offered richness and the ability to work with subjectivities and **Q as a method** offered one way to do that.

#### 5.6 Developing the data generation instrument: From Concourse to Q-set

These next six sub-sections provide a detailed account of how Q-method as a data generation instrument was developed, accounting for the seven distinct stages demonstrated in Figure 4 above. To support the explanations, a glossary of terms is provided at the beginning of the thesis.

Stephenson (1968:24) asserts that 'all subjective communication is reducible to concourses' and that on any subject, there are only a limited number of viewpoints, therefore, these differences of opinions can be accounted for (Stenner, et al., 2017; Kenward, 2019). The overall population of statements or the 'universe of statements' (Stephenson, 1986:37) on a topic is referred to by the term 'concourse' (McKeown & Thomas, 2013:3). The quality of a Q study largely depends on the judicious, robust and replicable selection of statements, which offer a balanced representation of the varying viewpoints (Baker et al., 2014; Stenner et al., 2017). The robustness of the approach taken to developing a concourse in this current study is outlined in the subsequent sections.

##### 5.6.1 Framework for concourse development

The framework for concourse development was informed by the following considerations: what should be included (the breadth); what the scope and the focus of the concourse needed to be (depth), and how it should be organised and presented for reduction (Eden et al., 2005). The 283 concourse statements were achieved by data saturation and were drawn

from three sources: (i) research literature (written in English) (ii) cultural knowledges explicitly accessed in non-research-based literature (written in Hungarian), (iii) and cultural knowledges implicit in the accounts provided by focus group participants of their own practice in multi-age groups.

The concourse statements from literature evidenced the dominance of the developmental discourse, so to ensure a more balanced representation and coverage in relation to the main research question, a third source for the concourse was introduced in the form of a focus group interview (in Hungarian). This involved five pedagogues, other than the study participants, who had had substantial practice experience in multi-age groups. The schedule for the focus group can be found in Appendix 5.

The explanations and justifications for the statement selection from all the sources and their preparation for the reduction activity is outlined in the two sub-sections that follow here.

#### 5.6.2 Selection of statements for the concourse

The critical review of extensive literature enabled key sources and key findings to be identified and salient statements to be lifted to add to the concourse, as demonstrated in Table 15.

4	Rouse, E. (2015) Mixed-age grouping in early childhood – creating the outdoor learning environment. <i>Early Child Development and Care</i> 185(5), pp. 742-751, DOI: 10.1080/03004430.2014.953138	Journal article, saved as PDF in Reading folder/mixed-ages Hard copy in the black folder.	<ul style="list-style-type: none"> <li>• Developmental argument – older ones benefit outdoors as opposed to what has been claimed before about older ones losing out cognitively</li> <li>• Older ones benefit partly because of their size dominating the space</li> <li>• Mixed-age experience for children who don't have siblings</li> <li>• Children and adults have a real sense to share the care</li> <li>• Mixed-age grouping or not: educators to shift their thinking from a developmental lens to a lens where children are <u>seen as</u> agents of their own learning – post developmental way of viewing children as learners</li> <li>• In Australia age segregation is still a dominant way of grouping children</li> </ul>	(Emailed her.)  <b>Concourse statements:</b> <b>Mixed-age groups provide 'only' children (who do not have siblings) to socialise with children of different ages.</b>  <b>Older children in mixed-age groups benefit from outdoor play more because of the sheer size of them dominating the space.</b>  <b>In a mixed-age group there is a real sense that educators and children are sharing the care of children.</b>
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Table 15. Notes taken at the literature review stage with reference to inclusion of statements in the concourse

Further statements were selected from non-scientific literature and a focus group interview, which underwent thematic analysis employing an inductive approach (Braun & Clarke, 2006, 2014) (Appendix 4). Themes and sub-themes were established, which provided a structure for the organisation and presentation of the concourse to the working party undertaking the reduction activity (Watts & Stenner, 2012). Using 'raw verbiage' (Brown,



2002:8) from the thematically analysed transcription of the focus group allowed these statements to be directed back to the participants for rank ordering, which made the concourse development a reflexively more democratic process (Eden, *et al.*, 2005:416). Using the focus group data helped re-balance the concourse for more equal representation between theory and practice.

Statements that were selected from the literature and written in English were translated into Hungarian to enable the reduction activity to take place in Hungarian. Statements from the focus group interview and from literature written in Hungarian were used in their original form and not translated to English at this stage.

#### 5.6.3 The reduction activity

To make the rank ordering manageable for the study participants, the 283 concourse statements needed to be reduced to the final Q-set (Stephenson, 1978). The purpose of the reduction activity was to identify which statements were to be included in the Q-set to represent the different facets and the complexity of the concourse (Ramlo and Newman, 2011; McKeown and Thomas, 2013). Therefore, the rejection criteria included: repetition, unclear meaning and double-negatives, irrelevance to the study focus, particular bias towards a viewpoint, items including two propositions and value laden statements.

The recommended number of statements for a Q-set are between 40 and 80 (Brown, 1980; Stainton Rogers, 1995). After several rounds of revisiting, a total of 48 statements were selected, which were checked against the main research question for balanced coverage. The translation of the Q-set was necessary to ensure that they were accessible to both English and Hungarian speaking audiences. To ensure that all final statements faithfully represented the originally intended meaning, the processes of translation, moderation and back-translation were employed, which were explained in detail in Chapter 4.7.

#### 5.6.4 The Q-set (Q-sample)

The final 48 statements (Appendix 6) are the representative subset of statements (Newman & Ramlo, 2010), in which each statement made its individual contribution to the Q-set. In this study, because of the thematic analysis of the concourse, the sampling for the Q-set was according to the

themes and sub-themes and there was a deliberate representation of all of the themes (Barker, 2008; Paige & Morin, 2016), making it a structured Q-set (Kentzer et al., 2019). Table 16 below demonstrates how this was achieved.

MAIN THEMES	NUMBER OF STATEMENTS INCLUDED IN THE Q-SET
In relation to <b>pedagogues</b> and their role in MA practice	26
In relation to <b>children</b> and how they learn in MA groups	15
In relation to <b>parents</b> and how they see MA groups and MA practice for their children	7

Table 16. A pre-meditated proportionate representation of themes in the final 48 statements of the Q-set

### 5.7 Piloting the Q-method

Piloting the Q method was carried out with my Hungarian supervisor and a pedagogue in the campus kindergarten. Due to the unfamiliarity with this research instrument in Hungary, it was likely that the pilot participants would not have had prior experience of rank ordering in this way. Therefore, multi-layered checking was planned in the following areas:

- Readability (the wording of the statements)
- Clarity of the condition of instruction, which is an explanation of the context (condition) within which participants should consider each statement in the Q-set. The instruction guides the Q-sort.
- Usability of statement cards and the distribution grid: for durability, both the statement cards and the distribution grid were laminated
- Size of the Q-set
- Time required to complete the Q-sort
- Post-sort interview

Completing the pilot data generation in real time and seeking feedback from the pilot participants allowed refinement of the research instrument. The condition of instruction was made clearer by adding a sentence which explained that pedagogues needed to consider the statements in relation to their own practice in multi-age groups and not multi-age practice in general. The statement cards remained laminated to accommodate excessive handling, but the distribution grid was printed on an A3 sized sheet of paper so that participants could write the statement numbers into each square

after their rank ordering was completed. Piloting the post-sort interview led to a small change in adding a questions that enabled a shift of focus to items participants themselves wanted to talk about along with the statements placed in the extremes and the statements that caused them difficulties to place.

### 5.8 Undertaking the Q-sort

The Q-set of 48 statements were rank-ordered on the distribution grid demonstrated in Figure 5 below according to the condition of instruction "How characteristic is this statement of your practice in the multi-age group you are currently working in?" There was a small difference in the condition of instruction for the four area managers who were not working directly with children. To make the sort relevant to them and keep it aligned to the main research question, they rank ordered the statements in relation to "How characteristic is this statement of multi-age practice in the kindergartens you are currently managing?"

Two descriptors were placed in the extremes and the majority towards the centre of the pyramid-shaped grid, which forced the distribution of the statements to create a normal distribution curve (Cross, 2005).

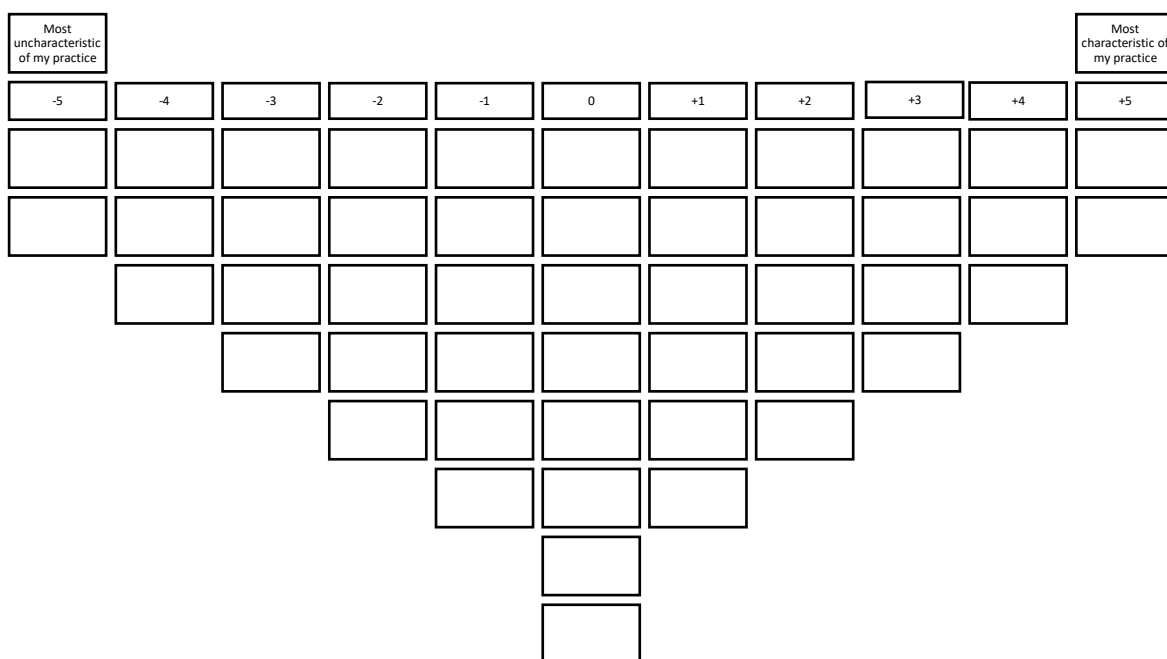


Figure 5.A visual representation of the distribution grid for the rank ordering of the Q-set

With each completed Q-sort my aim was to describe typical representations of varying viewpoints rather than to find what proportion of the participants

shared the same viewpoint (Simons, 2013). This description was enhanced by conducting follow-up interviews, which is explained in the section that follows.

### 5.9 Post-sort interviews

In the post-sort interviews, the focus shifted to participants providing a verbal account of the characteristics of their practice (Appendix 8). The primary aim was to discover why the participant sorted the items in the way they did and to give them an opportunity to explain the meaning and significance of the particularly salient items to them. It also offered an opportunity to follow up interesting or unusual responses and to understand the possible underlying motives behind each configuration of the rank ordered Q-set. Relevant parts of this narrative data were utilised in the interpretation of the factors/shared views as a way of 'embellishing their final representation' (Watts & Stenner, 2012:82).

### 5.10 Factor extraction, rotation, factor analysis and factor interpretation

Q-methodology enables by-person, rather than by-trait, factor analysis which enables individual and collective viewpoints to be revealed (Paige & Morin, 2016; Simons, 2013). For this to happen in this study, completed Q-sorts were manually inputted into a statistical software package called PQMethod2.35 (Schmolck, 2014), and the data was subjected to statistical analysis, which was a step-by-step approach involving three methodological transitions: (i) from Q-sorts to factors; (ii) from factors to factor arrays; (iii) and from factor arrays to factor interpretation (Watts & Stenner, 2012). In the sub-sections below, these sequential steps are explained.

#### 5.10.1 From Q-sorts to factors

In this first transition, PQMethod intercorrelated rankings (sort by sort) and generated a correlation matrix, which encapsulated the full (100%) meaning and variability in the study and accounted for the nature and extent of the relationships between the 28 sorts (Barker, 2008; McKeown & Thomas, 2013). Clusters of similarity or difference between the Q-sort configurations were detected in the matrix, and this is where the factors were extracted from. Factors are key viewpoints that the study participants held in common (Watts & Stenner, 2012).

To achieve maximum separation between the factors, varimax rotation was carried out that ensured that the viewpoints of the four factors were suitably focused (Brown, 1993). Rotation did not alter the relationship between the sorts, rather, it shifted the perspectives (angles) from which they were observed (Baker et al., 2019) in order to 'maximise the purity of saturation' of the factor (McKeown & Thomas, 2013:52). In this way, it was ensured that each factor was as distinct as could be and that as many sorts were included as possible. Deciding on how many factors/views to retain was informed by several statistical criteria:

- The *eigenvalues* of factors, which indicate how strong factors are statistically, their 'explanatory power' (Watts & Stenner, 2012:105). Eigenvalues above 1.00 should be retained for analysis. If the eigenvalues are below 1.00, they indicate that less than one Q-sort contributes to explaining the overall variance of the sample (Baker et al., 2019).
- In choosing the factor solution one should optimise the extent to which the *study variance* is covered in the number of factors retained. The guideline is that between 35%-40% and above is a good solution (Watts and Stenner, 2012).
- Factors with at least two significantly loading Q-sorts are also considered significant (Brown, 1980; Watts & Stenner, 2012). This is calculated by the equation of  $2.58 \times (1 \div \sqrt{N})$  (number of items in Q-set). Factor loadings that are at the level of  $p < 0.01$  are regarded as significant. In this study, this calculation gave the value of  $2.58 \times (1 \div \sqrt{48}) = 0.3723$ , rounded up to 0.38 (Watts & Stenner, 2012). Therefore, only sorts that loaded 0.38 or above were retained for further analysis.

Based on the statistical analysis a four-factor solution was selected. The eigenvalues, study variance and the number of significantly loading sorts for each solution are summarised in Table 17.

<b>Factors</b>	<b>Eigen values</b>	<b>Study variance coverage</b>	<b>Number of significantly loading sorts</b>
----------------	---------------------	--------------------------------	--

F1	4.48	16%	7 (Defining sorts:4, 6, 7, 8, 18, 19, 20)
F2	3.08	11%	4 (Defining sorts: 3, 10, 17, 23)
F3	3.08	11%	3 (Defining sorts: 2, 9, 16)
F4	2.52	9%	2 (Defining sorts: 27, 14)
<b>Total:</b>		<b>47%</b>	<b>16 Defining sorts</b>

Table 17. Summary of the statistical values of the four-factor solution

The four-factor solution, that identified four commonly shared viewpoints between the study participants, was selected for the following reasons:

- i. a 47% coverage of the study variance (considered significant for being above 40%)
- ii. the lower correlation demonstrated between the four factors made them more distinct from one another
- iii. The number of significantly loading sorts ranged between seven and two, meeting the above outlined criterion of minimum of two for a factor to be considered (Watts & Stenner, 2012)
- iv. the factor solution was consistent with the participants comments and explanations in the post-sort interviews giving a more nuanced representation of the four shared viewpoints (McKeown & Thomas, 2013; Stephenson, 1953)

Evidence for these were gained in the second and third methodological transitions, which examined the process of moving from factors to factor arrays, then to interpretation.

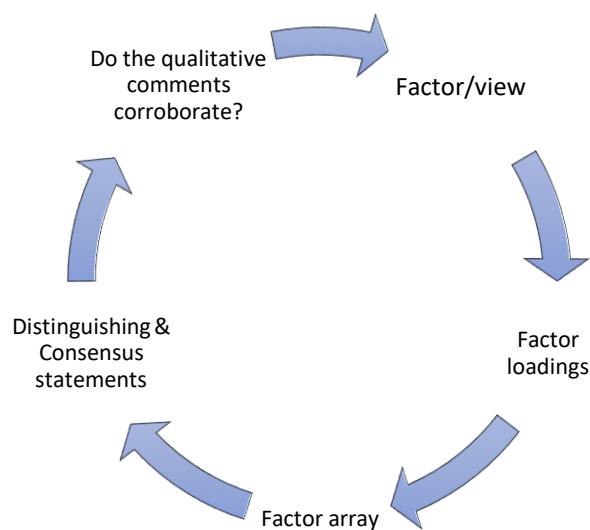
#### 5.10.2 From factors to factor arrays

In the second transition factor loadings were examined, which is the extent to which each individual Q-sort correlates with the factor (Baker et al., 2019). The individual sorts that loaded significantly on the factors, in other words the defining sorts, were examined by creating a representative Q-sort, in Q jargon, factor arrays (Baker et al., 2019). This representative sort derived from the Q sorts of those participants who loaded onto that factor

and it represented the views they commonly held, which was, in effect, the factor (Watts & Stenner, 2012) (Appendix 7).

### 5.10.3 From factor arrays to factor interpretation

In the third methodological transition, the designated software, PQMethod provided a number of outputs that helped me interpret the factor arrays. Among them were distinguishing statements that best defined a factor (viewpoint), and consensus statements that did not contribute to defining a factor because they were shared across a number of factors. Salient statements at the extremes, -5/-4 and +5/+4 were also examined for each factor along with statements that were ranked lower or higher by a particular factor than any of the other factor. To keep this cyclical and iterative process systematic and auditable, crib sheets were created for each factor, which included both quantitative and qualitative information (an example is included in Appendix 9). The cycle of interpretation employed is demonstrated in Figure 6.



*Figure 6. The cycle of factor/view interpretation*

Iterating round this cycle for each viewpoint was where Q's epistemological position of constructing realities experientially was brought into focus in, what might seem like, the most quantitative stage of the Q-method design (Eden et al., 2005). The aim of factor interpretation in this study was to utilise the statistical rigour as well as the researcher's subjectivity to uncover and fully explain the viewpoints captured in each factor (Stenner et al., 2003; Watts & Stenner, 2012).

## 5.12 ANALYTICAL PROCESSES

This previous sub-section outlined the congruence between the Q-method and the study's constructivist ontology, its discursive epistemology, and the logic of the study design. The sequential steps of Q data analysis explained in sub-section 5.10 form one part of the study's analytical framework the logic of which I was obliged and curious to follow. In this sub-section, I outline the stages and processes adopted for analysing both the qualitative and quantifiable observational data. Parallels in the principles of the Gestalt 'wholeness' and the by-person approach that guided the analysis of both data corpus is highlighted. The reflexively iterative processes included repeated revisiting of the data and 'connecting them with emerging insights, progressively leading to refined focus and understanding' (Srivastava & Hopwood, 2009:77).

To capture the richness of the multiple realities reflected in the observational and Q data corpus, the analytical framework needed to facilitate:

- (i) analysis at individual pedagogue level,
- (ii) analysis at sample cohort level,
- (iii) the bringing together of the two sets of findings so that both the reported and enacted characteristics of multi-age practice could be identified and described.

As Figure 7 below demonstrates, the processes of analysis had three main components: data reduction, data display and drawing conclusions, each of which involved concurrent streams of activities that interacted throughout (Miles et al., 2019).



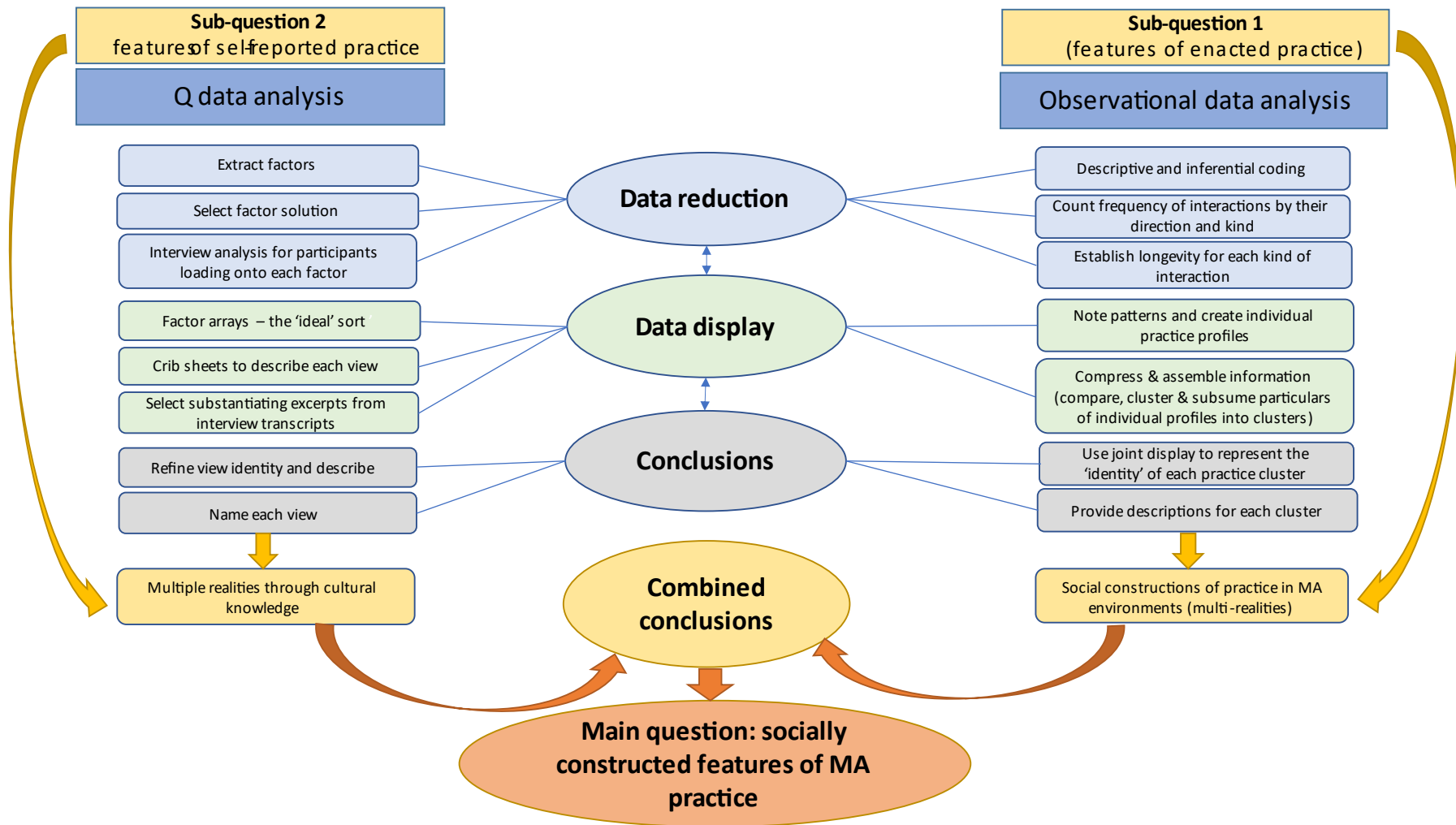


Figure 7. The three iterative procedures of data analysis

### 5.12.1 Gestalt and 'by-person' principles of analysis

Two analytical principles were adopted for the processes involved in data interrogation: the by-person and the Gestalt 'wholeness' principle working together. The 'wholeness' approach informed this study in multiple ways ensuring an internal logic and cohesiveness to the study: (i) in the Q procedures; (ii) in the interpretation of both individual and commonly occurring multi-age practices; (iii) in the study design.

Interrogating observational data through establishing patterns among the tracker, time-sample and field notes data was what provided a wholesome picture and the practice profiles for each pedagogue. 'Whole' did not mean the totality of every piece of observational data, rather the emphasis was on the linkage between the quantifiable and qualitative data findings. Similarly, commonly occurring practices were identified by making connections between the individual's practice profiles which were clustered together based on their discriminant features. Individuals' practices made better sense and were better understood in relation to the 'whole' cluster's practice characteristics. In this current study, the unit of analysis was the *pedagogue* and I sought to understand each individual unit as a whole, as well as the collection of units that clustered together as a whole. It built up a picture of the phenomenon (multi-age practice) that was more and qualitatively different from what the examination of each individual practice profile simply aggregated could provide. It was the established connection, first, between the individual cases and clusters, then, between the clusters and the overall 'case' of multi-age practice (De Vaus, 2001) that made 'the whole greater than the sum of its parts' (Hollway & Jefferson, 2013, p. 37).

The subsequent sections that follow serve as an audit trail to make the analytical processes for the observational data transparent by offering evidence that demonstrates they were systematic, well-organised and thorough (Lincoln and Guba, 1985; Punch and Oancea, 2014).

### 5.12.2 Synchronous analytical processes

Observational data was generated using time sampling and tracking schedules. The act of carrying out time sampling and tracking formed part of data analysis. Time-sample observational records used low inference pre-

coded categories, 'adult to child', 'child to adult', 'adult to adult' and 'no interaction', and coding took place synchronously.

#### 5.12.3 Asynchronous analytical processes

Although data reduction, data display and drawing conclusions happened throughout the entire analysis process in an iterative way, the majority of the analytical processes, demonstrated in Figure 7 above, took place asynchronously. Using 'interactions' as the sub-unit of analysis, data reduction began with summarising the frequency count of the interactions in the time-samples according to their participants and who initiated it (adult to child; adult to adult; child to adult; no interaction). The focus remained on the adults involved in interactions. These were presented in a quantifiable form for each pedagogue and enabled comparison to be made between and across all pedagogues.

Tracker observations provided a measure of the *length of time* each pedagogue interacted with others in a particular way, which was established by recording the start and finish times. The *content* of both the tracker and time-sample interactions was recorded as continuous narratives for each interaction period. Interactions were counted as one until they changed in nature which included: the pedagogue moving on from child/children and engaging with a different purpose; finishing one activity and starting another; changing his/her place in the environment; moving children on from one place to another within the environment or from one environment to the other. No pre-coded categories were used here, data interrogation took place post observations, asynchronously via thematic analysis (see sections 5.12.4 further details). This also included establishing whether the interactions harnessed the potential of group age-diversity, or it was forgone. The procedures used to interrogate the observational data were often interconnected, complementary and in parts overlapping, which required me to move fluidly backwards and forwards between the phases.

#### 5.12.4 Phases of observational data interrogation

The analytical phases are summarised in Figure 8 and each phase is explained in further detail below.

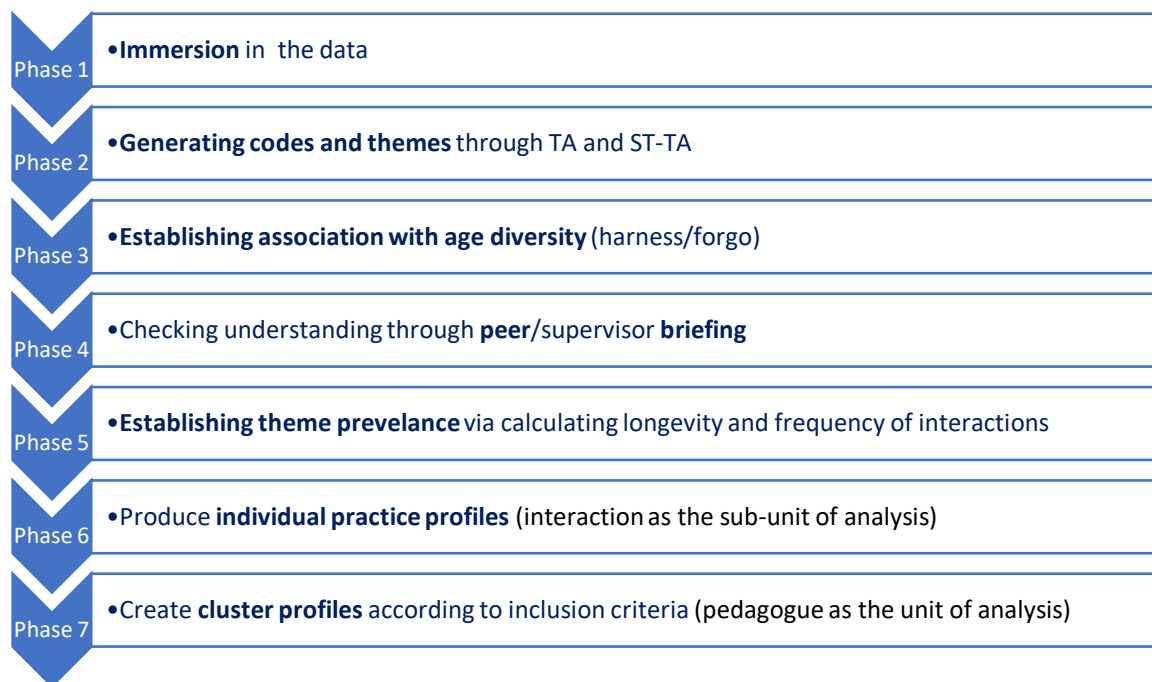


Figure 8. The seven phases of observational data interrogation

#### Phase One

Phase one required immersion in the data; the repeated reading enabled initial notes to be taken for possible descriptive codes. To facilitate this note taking, a column was inserted into the original table (Appendices 2 & 3). This immersive reading of the two data sets (time sample and tracker) helped me develop an early sense of recurring codes and possible patterns.

#### Phase Two

In Phase two, generating descriptive (1<sup>st</sup> level) and inferential (2<sup>nd</sup> level) codes, took place inductively then establishing themes followed deductively (Appendix 12) For the analysis of the shorter texts recorded in the 22 time samples and 22 tracker observations, Robinson's (2021) 'structured tabular thematic analysis' (ST-TA) was adapted (Appendices 2 & 3), which offered a number and word based technique for working with short qualitative data in a relatively structured way. Using this method of analysis suited the structured nature of my in-situ observational records yet offered flexibility in how the analytical processes were developed. Without requiring a specialist qualitative analysis programme, the analysis was done by hand starting with the original table format, which was extended at each analytical step by inserting new columns for the two levels of coding.

The suitability of this ST-TA technique for my study can be justified as follows:

- It could be used in a qualitative way for analysing short text content, but it also elicited quantifiable data under the established themes and codes, therefore, could be used flexibly in both qualitative and quantitative ways.
- The judicious use of numbers provided precision and greater clarity in my dominantly qualitative analysis. Quantifying was used to complement the primarily qualitative analytical process, rather than instead of it.
- ST- TA permits inductive, deductive and hybrid approaches (Robinson, 2021), and in this study, thematic analysis started inductively (by establishing initial and inferential codes) and the generation of themes was informed, deductively, by literature reviewed in relation to the multiple roles of adults in ECEC.

These were the first steps towards finding patterns in the data sets and groups of codes pointed to prospective themes. Five themes were then established deductively via a-priori literature-based theme development around the roles of adults in ECEC practice, which were: preparatory interactions, teaching and learning related adult-led interactions, teaching and learning related child-led interactions, interpersonal care and supervision. Because the five terms used for the five themes were rather generic, a description and explanation of what they meant in this specific study context were provided (see in Table 18 in Chapter Six).

As explained in Chapter 5.4, my qualitative field notes described the context in which kindergarten pedagogues worked, recorded my impressions of the adult-child interactions and the perceived key features of pedagogues' work in their age heterogenous groups. As with the direct observational records, these notes already included analysis, since the act of writing served as a process of sense making, in which my own values and experiences acted as a filter and reflected my theoretical hunches (Leavy, 2017). Therefore, axiological assumptions - which reflected how personally involved I became in the research process - occupied a greater space in the recording of the field notes (Denzin and Lincoln, 2000; Cohen et al., 2013).

Interpretive thematic analysis (TA) of my field notes took place concurrently with the Structured Tabular Thematic Analysis (ST-TA). It employed a deductive approach and applied the coding frame established by ST-TA to corroborate the findings of the time sample and tracker observational data. This also enabled the salient features of the individual pedagogue's enacted practice to be highlighted and with this, foregrounding the development of cluster profiles. There was a pluralist epistemological argument for using the ST-TA and TA together as a more balanced approach: the more varied forms of qualitative data meaningfully analysed, the greater the chance was to grasp the complexities of the realities of multi-age practice. Adding to this is the strength afforded by combining an interpretive qualitative (TA) and a critically qualitative method (ST-TA), both theoretically aligned and creative, to offer greater insights to the phenomenon under investigation (Braun & Clarke, 2019, 2021; Robinson, 2021).

#### *Phase Three*

In *Phase three*, the focus was to establish how the observed interactions related to age diversity using the labels of 'harness' and 'forgo'. That is, as explained earlier in section 5.3.3, showing awareness - or the lack of - the potential group age-diversity holds for children's multi-age learning and follow it through in interactions, such as facilitating peer modelling, peer support, collaboration between the ages. This process involved tabulating against the already coded data chunks by inserting another column into the original data table. This process was supported by my explanatory side notes, or 'interpretative asides' (Simons, 2009:119) taken at the time of data generation (Appendix 2 & 3). These notes also helped establish how the interactions were influenced by group age-diversity whether explicitly or implicitly expressed in pedagogues' interactions. (For example, a pedagogue stopping a 3-year old child from playing on the mezzanine play area because "he is too young" was labelled as 'forgo'. When a pedagogue narrated an older child drawing a car to give ideas to a younger peer or when praising a child who helped button up a younger peer's cardigan, the interactions were labelled as 'harness'.)

#### *Phase Four*

*Phase four* was dedicated to peer briefing, the 'peer' being my Hungarian supervisor at the time. Our critical discussion prompted reflexivity through

recognising that the way I coded the data was not only mediated but also constrained by (i) my own perspective and philosophical stance; (ii) the aim of my study; (iii) and my language and cultural heritage (Yardley, 2017). Any attempt to minimise my influence in the coding process could have also reduced engagement with the subject of my interest, which otherwise benefitted the study (Braun and Clarke, 2014; Yardley, 2017). This peer briefing was informal and discussion-based and pointed towards an initial working consensus, in the iterative and discursive process of which further questions arose that led to refining the definitions/descriptions of the themes as well as what was meant by 'harnessing' and 'forgoing' the potential.

#### *Phase Five*

In *Phase Five*, calculating the frequency and longevity of interactions took place, presented in quantified forms with the use of numbers. It has been claimed that doing qualitative research does not necessarily entail negating the language of number as a key tool for science. Indeed, numbers do not interpret themselves (Biesta, 2020; Maxwell, 2010, 2019; Onwuegbuzie & Leech, 2010). Here, the numbers (percentages) helped establish theme frequencies in pedagogues' interactions both across all observed interactions (offering a landscape view) and in those that related to group age-diversity (offering a zoomed in view), therefore, a more holistic understanding. The proportion of interactions under each theme already conveyed information on the importance or salience of these themes for both the individual and the developing cluster profiles.

#### *Phase Six*

In *Phase Six*, individual pedagogues' profiles were created, which was a crucial part of the analytical processes foregrounding the cluster profiles. By-person analysis mirrored the approach adopted for analysis in the Q procedures, which retained the logic and strengthened coherence and the internal consistency of the study. The summaries from the synchronous and asynchronous analytical processes enabled information to be progressively assembled in a systematic way.

The interrogation of the field notes through the interpretive TA were used to corroborate the findings from the ST-TA. Through an integrative description, which combined the 'brevity-and-breadth' findings of the time samples and

trackers with the 'length-and-depth' findings of the field notes, each pedagogue's individual practice profile was produced (Robinson, 2021:17), the component part of which are visually demonstrated in Figure 9 below.

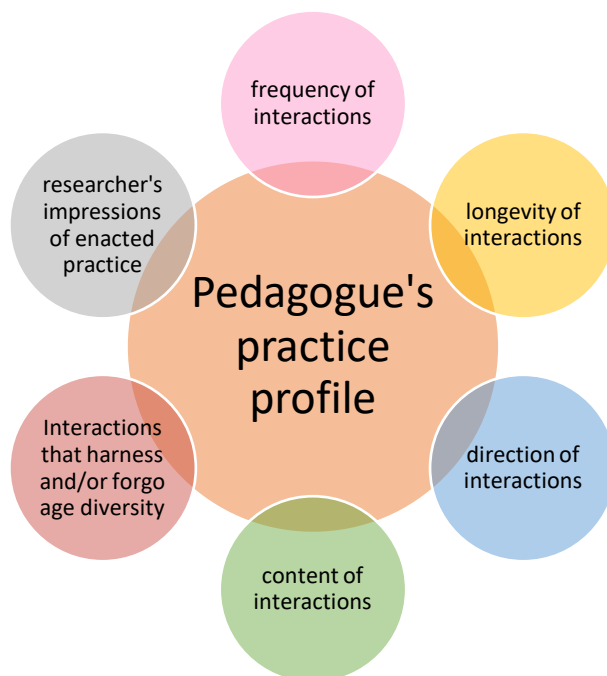


Figure 9. Components contributing to individual pedagogues' practice profiles

#### Phase Seven

In *Phase Seven*, through examining the relationship between individual pedagogues' practice profiles, the study design enabled focus both *within* and *across* the cases to maximise what can be learnt about enacted practice in multi-age groups (Punch, 2012). Repeated revisiting of individual pedagogues' profiles suggested initial clusters of practice then led to numerous reflexive iterations. Joint displays (Fetters & Molina-Azorin, 2019) afforded a more nuanced comparison of what was commonly shared between the qualitative and quantifiable constructs (Appendix 10).

The table in Appendix 11 summarises the inclusion criteria for the four practice clusters established. Taken into consideration were: (i) what proportion of the observed interactions relate to group age-diversity; (ii) whether the potential inherent in multi-age groups was harnessed or forgone; (iii) consistently or inconsistently applied multi-age interactions. To be able to answer the main research question, the focus remained on how pedagogues dealt with their groups' age-heterogeneity in their interactions with children.



### 5.13 Summary

In this chapter the data generation and analytical procedures employed have been explained. Q-method combined with semi-structured interviews provided instruments to elicit participants' views and observations to record their actions. The methods selected for data generation followed from the research questions and had the potential to offer insights into the two components of the main research question: pedagogues' self-reported and enacted multi-age practices. Two distinct components of the analytical framework have been outlined: participants' views were analysed following the Q procedures, whereas a seven-phase approach was employed for the interrogation of the observational data. The observational findings are now discussed in relation to the five established themes followed by the four practice clusters that derived from the above data interrogation processes.

## PART THREE: THE CONTRIBUTION

Part Three of this thesis is concerned with my empirical contribution, providing the evidence base for new knowledge to be created in subsequent chapters. Chapter Six outlines the observational findings, and Chapter Seven summarises the Q-findings.

### CHAPTER SIX: OBSERVATIONAL FINDINGS

This chapter describes the findings that enables the sub-question on features of pedagogues' enacted practice in multi-age environments, to be answered. To remain aligned to the internal logic of the study design, the Gestalt principle and the by-person analytical approach were applied to capture the characteristics of pedagogues' enacted practice in multi-age environments, which afforded two things, and in turn influenced how the observational findings are presented in this chapter: (i) it enabled the range of interactions between adults and children to be noted across the study locations, (presented below in sections 6.1-6.5); (ii) and informed the development of individuals' practice profile, which led to cluster profiles by comparing and contrasting features of individuals' practice, and through it, distinctive features of each practice clusters to be identified (presented in Chapter 9.6).

The findings of interactions between pedagogues and children are presented in relation to the five themes developed through thematic analysis (TA and ST-TA combined) outlined in Chapter 5.12.4. The thematic coding frame is included in Appendix 12 for reference. These five themes are intrinsically linked to the various roles of the adults working in early childhood institutions (Rose & Rogers, 2012; Siraj-Blatchford et al., 2002), and they are: (i) preparatory interactions, (ii) teaching and learning related interactions led and/or initiated by the adult; (iii) teaching and learning related interaction led by the child; (iv) interpersonal care related interactions; and (v) supervision. The descriptions in the table below illustrate in what sense these terminologies are used in this study.

<b>Theme name</b>	<b>What I mean by it ...</b>
<b>Preparation</b>	<i>Preparatory</i> interactions aim to achieve a state of readiness and accessibility in terms of the resources required for activities, moving between spaces as one 'event' ends and another begins, and how children, adults, equipment, resources...etc. are organised for these processes.
<b>Teaching &amp; Learning adult-led/initiated</b>	<i>Adult-led</i> interactions are the teaching and learning encounters between adults and children, which are the focus of the adult's planned time and differentiated according to the child's development. Although the adults may be sensitive and responsive to children's ideas, they remain in control. <i>Adult-initiated</i> interactions, on the other hand, happen in situations that arise from adult planning, which may be informed by in-depth knowledge of the children and their prior experiences. The activities or experiences are set up as open-ended and enable children of all ages to engage with them independently, which gives the adult the opportunity to provide or withhold support as required or indeed to draw on peer support.
<b>Teaching &amp; Learning child-led</b>	<i>Child-led</i> interactions are from scenarios that have evolved independently and created by the children. The children remain in control while the adults are attuned in order to know when it is appropriate to 'touch in' with support, suggestions, ideas or information.
<b>Interpersonal Care</b>	<i>Interpersonal care</i> related interactions reflect the adults' role in looking after children's physical and emotional needs as well as nurturing relationships. They include a relational process between the caregiver and the child, where the adult is 'in sync' (Rose & Rogers, 2012, p. 34) with children's needs and acts accordingly.
<b>Supervision</b>	<i>Supervisory</i> interactions are the result of adult's attentiveness to what children are doing. Supervision includes a proximity to children (both keeping a distance and/or staying close) and is characterised by a focus on safety, order and ensuring that children adhere to what adults regard as acceptable behaviour/code of conduct

Table 18. Explanations of the terminologies used in the five themes

The next five sections in this chapter present the observational findings in relation to each of the five themes. They are illustrated by examples, which I have limited in number to ensure the reader is not lost in the details. It is also noteworthy that some of example selected to demonstrate a point within one theme could serve as an example for another theme. To avoid confusion, I kept each example consistently with the same theme throughout the thesis.

## 6.1 Theme 'Preparatory interactions'

Thematic analysis generated four inferential codes that contributed to the theme development of 'preparation'. These are '*housekeeping*', '*resourcing*', '*transitioning*' and '*organising*' (Appendix 12). To remain focused on the main aim of the study, the findings presented here focus on interactions that were associated with multi-agedness in the groups.

### 6.1.1 Housekeeping

Different approaches were observed in pedagogues' interactions in relation to housekeeping. In some instances, housekeeping tasks bypassed children as adults took responsibility for them (P13, Tracker9, 31/05/18, 11:42am). The opposite was also observed, where, pedagogues involved children of all ages in sweeping (both indoors and outdoors), wiping and mopping in order to keep their environment clean. For example, two children in the cloakroom helped to sweep up the sand that came out of their shoes after playing in the large sandpit outdoors. Child176 (4yrs 7mths) and Child159 (6yrs 8mths) worked together, the younger child holding the dustpan, the older one sweeping up the sand (P16, Tracker12, 05/06/18, 11:35am).

### 6.1.2 Resourcing

Like with 'housekeeping,' resourcing interactions were either carried out by adults (P3 Time Sample1, 15/05/18, 10:00am), or the pedagogues involved the children in the tasks, including selecting and transporting equipment between the indoor and outdoor environments (P16, Time sample 11, 05/06/18, 9:51am; P19, Tracker14, 06/06/18). In other instances, adults controlled children's access to resources and play spaces based on their biological age as was observed in the mezzanine play area in Kindergarten 4: the youngest age group (3–4-year-olds) were denied access. This was explained by believing that younger children were not yet ready developmentally to mount the steps unaided (Field notes P26, 12/06/18), or by the lack of adult supervision because of high child-adult ratios (Field notes P23, w/c 12/06/18). Similarly, the music making play area was blocked off for the exclusive use of children leaving for school in Group 3. Pedagogue 7 actively separated the oldest children from the rest of the groups for this specific activity and, yet again, access for the younger children was denied (P7, Tracker5, 18/05/18).

In other instances, resourcing appeared to be a burden for pedagogues, even when a child requested some support. In one multi-age outdoor play scenario, one child (Ch247/4yrs 2mths) turned to the pedagogue hesitantly:

*Ch247: "It must be good to look at the ants with the magnifying glasses".*

*P24: "Why don't you?"*

*Ch247: "But I have not looked yet. They don't let me."*

*P24: "Oh child 247, look how much time is spent complaining. I have not got a magnifying glass that I could give to you. Why don't you go to the others and ask them to pass it to you?"*

*(P24, Time Sample17, 12/06/18, 10:45am)*

### 6.1.3 Transitioning

The initial descriptive codes for 'transitioning' captured interactions relating to moving between spaces and getting ready for activities or regular events in the groups' daily schedules. Some of these observed interactions harnessed the potential inherent in age-diverse groups, which included children choosing their partners (P19, Tracker13, 06/06/18, 10:26am; P26, Tracker19, 13/06/18, 10:07am) or making preparations for lunch, which included children setting the area up and laying the tables. In some of the groups (Groups 1, 7 and 9, for example), all children were selected to be the lunchtime helpers regardless of their biological age, and the helpers were encouraged to support one another. It involved carrying China bowls, plates, and glass cups from a trolley to the tables that they cover with a tablecloth and set it with cutlery and serviettes (P4, Time sample1, 15/05/18, 10:51am; Field notes for P10, w/c29/05/18).

This was in sharp contrast with practice, where only the two older age groups (4-5yrs and 5-6+yrs) could be helpers (P24, Tracker17, 12/06/18, 9:28am; Field notes for P13, w/c 28/05/18). Interestingly, in Group 12, children themselves chose the helpers for lunchtime and this included children from all the age groups (P26, Tracker19, 13/06/18, 10:07), whereas, in Group 11, all children went to the trolley, took their plates, bowls and glass cups, took them to where they were seated and laid the tables for themselves. These examples confirm the variation in how pedagogues involved (or not) children of varying ages in preparatory activities.

Further interactions were observed, where pedagogues separated out particular ages from the whole group (P7, Tracker5, 18/05/18, 9:55am) or

organised children into pairs that consisted of one older and one younger child (P11, Time sample10, 31/05/18, 10:09am). With the latter, adults attempted to deliberately mix the ages, which, inadvertently, resulted in separating them. This reinforced children's membership of a particular age group within the larger group and reflected a 'biological age over developmental stage' approach, where responsibilities were allocated purely based on age.

#### 6.1.4 Organising

The variation in approaches continued in interactions that aimed to organise children for various activities. In some instances, children were involved and organised themselves, which the pedagogues supported. For example, children could sit with their siblings at the table or in circle-time, and children could choose different partners each time if they wished to as they transitioned between activities and spaces (P16, Tracker12, 05/06/18, 11:41am-12:09).

Findings also point to interactions between pedagogues and children that separated the ages into micro-groups for particular activities (such as physical exercise, end of year performances or outings) not only within one group (P15, Tracker10, 31/05/18, 11:25am) but across all of the multi-age groups in one kindergarten, making events, such as a meeting a children's author in the local library, the privilege of the oldest children only (P11, Tracker5, 18/05/18, 9:55am). So did the deliberate organisation of children in a 'one older-one younger' pattern for dance, ring games (P3, Time sample1, 15/05/18, 10:00am), circle-time (P5, Time sample4, 17/05/18, 9:45am), or for going out for a walk in the kindergarten's vicinity (P13, Tracker9, 31/05/18, 10:28am).

As the practice examples suggest, in these preparatory interactions, there is evidence of considering both children's biological age over their stage of development and their ages over their stages of development.

#### 6.2 Theme 'Teaching and Learning Adult-led/initiated interactions'

Combining initial descriptive codes created five inferential codes that contributed to the theme of teaching and learning related interactions led and/or initiated by the adults. They are '*differentiation*', '*sustaining interactions*', '*evaluation*', '*encouraging collaboration*', '*attempting to homogenise*' (Appendix 12). The findings in this section are presented in

relation to these five codes. It appears that variation in practice continued, and interactions were observed both to harness and to forgo the potential that multi-age groups offered.

### 6.2.1 Differentiation

Observational records evidenced differentiated support to children as demonstrated by an example of P16 supporting Child182 (3yrs 5) as she was climbing on the arch shaped climbing frame for the first time. Instead of helping her over the brow, she noticed the child was almost paralysed by fear as she shouted for help:

*Child 182 (3yrs 5mths): "Ped16, Ped16, I am scared."*

*Ped16: "Are you scared? You have climbed so high and now you cannot come down."*

*Child 182: nodding slightly, seems afraid to move.*

*P16 lifted her off, hugged her and gave her a kiss on the cheeks. "I'll tell you something better: why don't you climb these rungs from underneath?"*

*(Time sample11, 05/06/18, 10:21am)*

Findings also provide evidence for activities set up for children for all abilities where appropriately differentiated support enabled them to engage with the same activity at a level that suited their individual needs best (Field notes for P22, w/c 05/06/18). For example, an adult-planned re-enactment of the story of Puss in Boots evidenced P10 allocating roles to children based on their stage of development rather than their biological age, which saw children between the ages of 4 yrs 4mths and 7 yrs 4mths acting out the story characters. The pedagogue differentiated by her prior knowledge of children's stage of development as children were selected for the various roles and P10 offered individually tailored support as the enactment commenced:

Child79 (7yrs 4mths)- Puss-in-Boots

Child80 (7yrs 1mth)- princess

Child100 (4yrs 4mths)- younger boy

Child81 (6yrs 10mths) – magician

Child97 (4yrs 10mths)- middle boy

Child82 (6yrs 8mths) – oldest boy

Child86 (6yrs 1mth) – the old King

Child82 (6yrs 8mths)- coachman (does two roles)

"We need to help Child86 (6yrs 1mth)". So Ped10 says his lines first and he is repeating them after her."

*(P10, Tracker7, 29/05/18, 9:20am)*

My interpretive field notes explained that the pedagogue said she knew where children were developmentally and knew who needed what kind of challenge. Some children were really taken by the story and they, regardless of their age, were picking up the narratives easier than others. As children hesitated or forgot the story line, P10 encouraged peer support instead of jumping in to help. She remained part of the audience listening intently and showing her appreciation of the children's performance by smiling, nodding and clapping at the end (P10, Time sample7, 29/05/18, 10:31am).

The previously mentioned 'developmental stage over biological age' approach was observed repeatedly as P19 did a counting game with mixed-age children during circle-time. After Child201 (5yrs 1mth) counted in twos, the youngest child (3yrs 9mths) in the group also wanted to have a go, which P19 welcomed. She was surprised and very pleased that the child could do it confidently, and praise was offered (P19, Time sample14, 07/06/18, 10:03am).

Observation also provided evidence for inconsistency in differentiation, which was sometimes according to children's biological age, other times to their stage of development. An example of this is PE (physical education) sessions where children were split into their various biological age groups (3-4yrs, 4-5yrs, 5-6+yrs) and they exercised in their age-homogeneous micro-groups. One pedagogue in Kindergarten 4 explained that for physical activity, younger and older children needed to be separated primarily for the safety of the younger ones but also to ensure greater physical challenge for the older ones. She felt this could not be provided for if they were together with their younger peers (Field notes for P24, w/c 11/06/18). However, the opposite was also observed. In Group 1, children were lined up in readiness for PE in their biological age groups, but when they reached the hall, all children had access to the obstacle courses set for various difficulty levels, and they were encouraged to test their physical abilities and use the apparatus they felt comfortable with. While this 'stage over age' approach was applied throughout most of the session, the pedagogue reverted back to 'age over stage' to end this PE activity with the 'Simon says' game, which was reserved for the oldest children, while the younger ones were taken to their room. As the examples suggest, the inconsistency in approaches was



evidenced not only between practices but also within one pedagogue's practice (P3, Field notes, w/c14/05/18).

Similarly, instead of separating the ages which would have excluded some of the children from a more complicated ring game, children, frequently (twice or more) in multi-age pairs, were encouraged to look out for and help one another (P4, Time sample1, 15/05/18, 10:24am). Contrastingly, this scenario played out very differently when children performed their ring game in their age specific micro-groups and for the dance, younger children were paired up with an older peer as a way of ensuring that the dance was performed to the adults' expectations (Field notes for P5, w/c 14/05/18).

These practice examples substantiate the findings that both the 'stage of development over biological age' and the 'age over stage' approaches were inconsistently applied in practice.

#### 6.2.2 Sustaining interactions

Sustaining interactions included the key element of reciprocity in the encounters between a child and an adult. When an adult received communication from a child (through verbal or non-verbal means), the adult offered something in return that sustained the interaction between them. Pedagogues tailored their support to the needs of individual children, in which they were guided by not only their ability to tune in but also by their in-depth knowledge of the children, their families and what they brought with them from home. This is illustrated by one adult-initiated scenario, where P16 set up an activity for children to fold paper boats using the wallpaper sample pack a parent brought into the kindergarten. One child repeatedly put his half-folded boat onto his head as if it were a paper hat [csákó], but because of the thickness of the paper, it did not stay in place. P16 offered to fold one out of newspaper for him, and although first shy, the boy seemed to love wearing it during the morning (P16, Tracker11, 05/06/18 8:38-9:01am). When P16 spoke to the parents the following morning again about the 'csákó', she found out that his grandad regularly folded these for himself in the summer for sun protection and the child may have emulated this in his play (Field notes for P16, w/c 04/06/18).

Another example from the same pedagogue during the paper boat activity demonstrated how a well-timed prompting question could sustain

interactions. P16 drew children's attention to the qualities of the various wallpaper samples they were working with:

P16: "Look at this paper, have a feel. To me it feels slippery, silky and shiny... this is the problem with it, when you fold it, it slips, and you cannot get it into shape. What could we do to keep the paper in place?"  
Ch159 (6yrs8) suggests gluing it together and Child 162 (6yr 5) fetches the glue. They try to glue it, but it would not hold together.  
Child177 (4yrs 5mths) "paper clips would hold it?" P16 brings a box of paper clips from her desk.  
P16: "Look at these clips."  
Ch166 (5yrs 9mths) says: "Cappuccino clips". P16 hands over the box, the child tries the clips, but they don't hold either.

(Tracker11, 05/06/18, 9:04am)

In other instances, pedagogues facilitated children's exploration and shared thinking by offering relevant information. Time Sample14 provides evidence of children of varying ages examining some bugs they found outside:

P19: "Look at this beetle."  
Child206 (4yrs 4mths): "This is a May-beetle [cserebogár]."  
Child201 (5yrs 1): "No. This is a rose beetle".  
Ped19: "What kind of a beetle did you say?"  
Child 201: "Rose beetle. I found a beetle like this at home with mummy."  
Child 188 (6yr 11mths): "And I found a St John's beetle."  
Ped19: "Oh yes, this is a St John's beetle, I think, you are right. Some people also call it a fire bug because, it glows in the night."

(Time Sample14, 07/06/18, 10:24am)

There were also instances when a lack of interest was recorded from pedagogues (Field notes for P11, P15, P20 and P27), exemplified by the extract below:

Ch248 (4yrs 1mth) runs to P27, holding the ladybird and it is crawling along her hand and on her arm. She says: "P27, shall we put it into a jar?"  
P27: "I have not got a jar." (Pedagogue carries on walking towards the bench and sits down.)

(Time sample21, 15/06/18, 9:24am)

My field notes also commented on adult-centredness, an almost self-absorbed way of practising, where, instead of sustaining interactions, pedagogues followed their own agendas, engaged with children on their own terms and failed to listen to children (Field notes for P17, P23, P20, P11, P14).

### 6.2.3 Evaluation

A variety of and somewhat contrasting practices were observed as pedagogues evaluated children's efforts. In some of the observed interactions adults took care with giving praise before children had the chance to self-evaluate, as the extract below demonstrates:

*Ch162 (6yrs 5): "Mine is not very beautiful."*

*P16: "Is that what you think?"*

*Ch162: Yes. It hasn't turned out very good.*

*P16: "Shall we correct it?"*

*Ch162: "yes."*

*P16 then helps her sharpen the folding lines hold its shape better and gives the paper back to her. "What do you think of it now?"*

*Ch162: "I think it is very good now."*

*(Tracker11, 05/06/18, 8:38am)*

When giving feedback to children, some of the pedagogues were explicit about what they praised in children's efforts. For example, when a child mastered propelling herself on the swing, P19 explained that pushing her legs backwards and forwards just at the right time kept her momentum going and propelling her successfully (P19, Time Sample14, 07/06/18, 10:30am). However, this example below evidenced pedagogues openly expressing negative views about children's play:

*(Two children are just coming down from the mezzanine after a short play.)*

*P23: Well, Child271 (5yrs 1mth) and Child262 (6yrs 7mths), are you coming down already?*

*(Time sample18, 13/06/18, 8:54am)*

### 6.2.4 Encouraging multi-age collaboration

Some of the observed interactions demonstrated that collaboration between peers was encouraged and supported, which included joint problem solving, negotiation, encouraging novice-expert interactions, adults offering ideas and resourcing children's play. An example of this is illustrated by the multi-age play scenario that took place outdoors in the sand pit where children, aged between 3 years 5 months and 6 years 8 months, wanted to make a lake on top of the castle, they had previously built, to float the paper boats they had folded indoors first thing in the morning.

*P16: "Why don't you plan how you want to do this? "*

*Child167 (5yrs 9mths): "We will make a big hole and that's where we can put the boats."*

*P16: "If we make this hole too big, do you think that the boats may fall in?"  
(Children continue to make a larger but shallower lake.)*

*Child 166 (5yrs 9mths): "P16, we only need water now."*

*P16: "Ok, let's get a piece of polythene so that the water does not get absorbed by the sand." (She goes inside, brings out a piece and hands it to Child 162 who is holding her hand out for it.)*

*Child 162 (6yrs 5): "Shall I put it here?"*

*P16: "Now, think about it, Child162. If we place the polythene like this, the water will run off it and it will end up at the bottom of the castle. Why don't you discuss how it should be done? You always have great ideas, you are good at finding solutions. Help each other."*

*Child162 (6yrs 5mths): "Do we have any scissors?"*

*P16: "Child167 (5yrs 9) is already gone to see 'Adult' about it. Look, he is just coming back with them."*

*Child182 (3yrs 5mths): "Let's fetch some water in this bucket." (She looks at Ped16 but Child166 (5yrs 9mths) picks up the bucket and runs to the outside tap with her holding her hand.)*

*Child 166 (5yrs 9mths): "Here is the water. Do you need it?"*  
*(P16 is watching them and letting them work it out between themselves. As the water is starting to flow out, she joins in again.)*

*P16: "I think I will have to raise this dam to make sure that the water does not flow away from this lake."*

*Child174 (4yrs 11mths): "Me, too!"*

*P16: "We are the dam builders."*

*Child 162 (6yrs 5mths): "P16, can I put my boat on the lake now?"*

*P16: "Would you like to?"*

*Child162: "This is really sweet like this" and she pours a little more water in.*

*P16: "I think we have a leak somewhere. Look, the water level is dropping, it must be seeping away somewhere."*

*Child170 (5yrs): "Where can I put my boat?"*

*P16: "Where would you like to put it?"*

*Child170 (5yrs): "You put it on." (P16 does.)*

*Ped16: "I still think the water is seeping away. We have less and less water in this lake." Child 177 (4yrs 5mths) takes a handful of sand and tries to build the dam higher. Child166 (5yrs 9) joins her and helps her where her dam is collapsing.*

*Ped16: "Do you think that this size of polythene will be large enough next time?"*

*Child 162 (6yrs 5): "No. We need bigger." Child165 (6yrs) carries on making the dam higher regardless.*

*(Time sample11, 05/06/18, 10:06-10:45)*

There were also instances when pedagogues planned activities for their multi-age groups and made a conscious effort to utilise the groups' age-heterogeneity as demonstrated by P19's words: *"Try and build this castle in a way that allows everyone who wants to get to it, including the younger ones, too."* (P19, Tracker13, 06/06/18, 10:31am). This was corroborated by some of my field notes that confirmed pedagogues utilising multi-agedness in their groups:

*P22 explained that every activity she plans is available to all children and she allows children to use any equipment that they feel they want to try. "Otherwise, how else will they learn to use it and, anyhow, they are very good at helping one another out and working together." She would not decide merely on children's age whether they are capable of doing something or not, or whether they can play together or not.*

*(Field notes for P22, w/c 04/06/18)*

#### 6.2.5 Attempts to homogenise

A key feature of pedagogues' multi-age interactions for this code was that they prioritised biological age over stage of development. This manifested in pedagogues separating the various ages within their multi-age groups and/or only providing access to certain activities for certain age groups. For example, in Kindergarten 1, a music-making and music writing activity was set up separately for the children leaving for school, and their play space was protected from younger peers by a row of chairs. Once the oldest children had finished playing with the musical sheets and instruments, younger children were allowed in the area to have a go at writing music but not playing with the instruments because the pedagogue felt that they were not yet able to control them, therefore, their play would be too loud and chaotic, which would disturb the peace and order in the group (Field notes for P7, w/c 16/05/18).

This 'age over stage' approach was also evidenced in pedagogues reinforcing the status that went with being either in the youngest or the oldest age group within their multi-age groups (P23, Time sample18, 13/06/18; P27, Time sample21, 15/06/18). As in the music making activity above, the youngest age group's status was reinforced through the notion of exclusion. Pedagogue 20's conversation with a younger child revealed that the child and her parents were looking forward to the time when she could move out of this age group and consequently have access to opportunities that this age group membership so far denied her (P20, Time Sample13, 06/06/18, 2:39pm).

Besides the age-related expectations, findings also suggest that pedagogues expected the same from each child regardless of their biological age, their stage of development or indeed what prior experiences they might have had. An adult-led craft activity expected children of varying ages to create an ocean-life scene on paper plates. All shapes were pre-cut, blue paint already mixed, and glue sticks at the ready with their caps off. Children were expected to complete the task at the same pace, and they had to wait for each child to complete one part of the picture before they could progress onto the next. It appeared that the pedagogue's intention was for all children to create identical pictures to meet her expectations regardless of their developmental stage, as the extract below evidences:

*P17: "I'll show you, this is how you do it. Make sure you paint the edges, too. You don't need much paint, we are only painting the ocean for now. You have to paint the whole paper blue because all of this here is water. We will glue the boats on later."*

*P17: "Child 166, wait a little bit. We will wait till everyone has finished painting the ocean. Those of you, who are already done, can wait. At least your paint is drying while you are waiting. Those who are ready, put your paintbrushes into the pot so I know you are ready with this phase of the painting. "*

*P17: "We are going to make the boats using these shapes (pre-cut white shapes for the body and sails of the boat). Child 166 (5yrs 9mths) pay attention. " P17 is showing the children how they need to put together the shapes to make the boat.*

*P17: "I have put this small dish here so that you can put the shapes you do not want into this because I do not like this mess on the table now. "*

*Child166: (5yrs9) asks child177 (4yrs 5mths): "Do you only have two fish?"*

*P17: (She is leaning over a couple of children's work, who have stuck quite a few fish on their paper plate ocean.) "Why did you stick all these on here?" and she takes off the fish from where the sail of the boat is. "We agreed that we will only stick fish underneath the boat."*

*Child168 (5yrs 7mths): " Ped17, I have not got any glue."*

*P17: "Yes. That is because we said that we will pass it on."*

*Child168(5yrs 7mths): "P17, how shall I glue the shapes on?"*

*(Time sample12, 06/06/18, 8:33-8:45am)*

This extract could suggest that P17 had not planned the activity with differentiation in mind and had no intention to utilise peer support. Additionally, these very precise adult expectations appear to have made some children hesitant in their capabilities during this craft activity and the adult-dictated pace took away opportunities for creativity, exploration, and indeed the peer support that a multi-age scenario could afford.

### 6.3 Theme 'Teaching and Learning Child-led'

The three inferential codes that make up the theme of teaching and learning related interactions initiated by children are: '*facilitating children's engagement*', '*encouraging peer support*' and what I termed as '*the visceral*', such as intuition, tactfulness and attunement (Appendix 12).

#### 6.3.1 Facilitating children's engagement across the ages

Facilitation manifested in various ways in teaching and learning encounters that were led by children. Pedagogues were observed contributing to shared thinking that were sustained by offering relevant information (Time sample14, 07/06/18, 10:24am), well-timed and sensitive suggestions as illustrated by the extract from one of the observations below. It began with a simple question and continued with children discussing their experiences in the various countries they visited with their families:

Child 223 (5yrs 7): "How do I eat this compote?"

P21: "Well, you could eat the apple pieces using your fork and then drink the juice since it is served in a glass."

Child212 (7yrs3): "It has got a thing called cloves in it. We had some in Germany."

Child230 (3yrs 11mth): "What's that?"

P21: "Yes, it is a spice and you can get it in many countries."

Child227 (4yrs 6): "I have been to Italy."

Child225 (5yrs 1mth): "And we often go to Austria."

(Time sample16, 08/06/18, 12:09)

Similarly, P16 was observed showing genuine interest and her interactions sustained children's spontaneous conversation and meaning making:

Ch166 (5yrs 9mths): "We caught an African catfish, because we put the right kind of bait on the hook. Then we took it to the farm and cooked it and we ate it."

Ped16: "What does an African catfish taste like?"

Ch166: "It's salty".

Ped16: I think you must be right, Ch166, I am sure it is not sweet tasting.

Ch159 (6yr 8mths): "I had a chocolate swirl pastry for breakfast."

Ped16: "we had that at kindergarten yesterday. Did yours taste sweet, too?"

Ch166 (5yrs 9mths): "Yes."

Ped16: Where do you buy your chocolate swirls?"

Ch166 (5yrs 9mths): "At the chemist's."

Ch159 (6yr 8mths): "At the bakery"

Ch166(5yrs 9mths): "In the cake shop."

Ped16: "Yes, at the bakery."

Ch175 (4yrs 7mths) comes along and says: "Well, I am going to take a seat here."

Ped16: "Come along and sit down here with us. We are about to start making paper boats, we just got distracted and started to talk."

(Tracker11, 05/06/18, 8:25am)

These extracts offer examples of pedagogues facilitating and supporting children's engagement. In other situations, pedagogues' interactions enabled children to enter each other's play (P3, Time sample2, 16/05/18, 8:57am) or resolve conflict (P24, Time sample17, 12/06/18, 10:15am).

### 6.3.2 Encouraging peer support

Pedagogues also encouraged peer support through multi-aged peer modelling in children's own initiated play. For example, in Group 1, children initiated a story and rhyme activity in the cosy area with children reciting a rhyme or retelling a story as they took turns in a chair specifically selected for this role. It seemed that the more confident and capable, typically older, children volunteered first (Child 27/ 7yrs 2mths; Child 38/ 5yrs 11mths; Child36/ 6yrs 2mth) followed by younger children (Child 48/ 4yrs; Child 43/ 5yrs). Both the adult and the children showed sensitivity through patience

and due attention towards one another and provided appropriately tailored support for each child, for example, whispering some lines along with the child to give confidence or prompting what happened in the story next (P4, Tracker2, 15/05/18, 11:17am).

### 6.3.3 The 'visceral' qualities of adult interactions

Some of the observed interactions evidenced pedagogues' intuition to pick up on signs of children's intentions and desires. Pedagogue 21's knowledge of a child's out of kindergarten experiences helped her notice that while playing on the stepping stones, one child kept rhythmically bending his knees every time he stepped onto a new stone. P21 had known that Child225 (5yrs 1mth) went to folk dance classes with his parents and this knowledge helped her tune into some discreet signs the child was displaying in his play. After preparing some space on the rug, she addressed the child directly: "*I have cleared some space for you if you want to dance with a partner.*" The child's face lit up and moved over to the rug to dance to the music the pedagogue also provided (P21, Time sample15, 08/06/18 9:03-9:12am). This led to a group dance of mixed ages, then short performances to a peer and pedagogue audience, which then switched to singing. Twins Child219 and Child220 (6yrs), asked for musical instruments to accompany their singing and when the music making became rather chaotic and uncomfortable for some children, P21 calmed the situation by taking out her own recorder and playing familiar tunes for the children to sing to. Soon after, the children moved back to the stepping stones and instead of stepping, they started to run through them. Children who appeared more confident in their physical abilities started to push past those who still needed to practice balancing. To avoid the situation getting out of hand, P21, tactfully and seamlessly, took her recorder to the stepping stones and played a rhythm then spoke to the children: "*Let see who can step out the rhythm I am playing*" (Time sample15, 08/06/18 9:15am). As the children responded, she did some modelling for those children who needed some support. These intuitive and pedagogically tactful actions enabled children to learn to respect the acceptable codes of conduct and children were also encouraged to look after one another (Field notes on P21, w/c 04/06/18).

These examples suggest that some of the pedagogues did recognise critical moments in children's play, consequently, they were able to draw on what



we might call, 'the visceral' or instinctive qualities in their interactions with children to enhance the teaching and learning opportunities.

#### 6.4 Interpersonal care

Interactions under this theme are intrinsically connected to the caring roles pedagogues fulfil in their everyday practice with young children and they were coded under the three inferential codes of '*meeting physiological needs*', '*meeting emotional/well-being needs*' and '*utilising peer support*' (Appendix 12).

##### 6.4.1 Meeting physiological need

Findings suggest that large proportion of care related multi-age interactions reflected the belief that it was important for children to learn about healthy and hygienic living including cleanliness, sufficient rest and feeding (Field notes for P22, w/c 05/06/18; P10, Tracker8, 29/05/18, 3:18pm). As before, variations in practice were evident. Sensitively differentiated hygiene support provided by the adult enabled children to carry out tasks by themselves (P16, Time sample11, 05/06/18, 11:00; P6, Tracker4, 17/05/18, 11:59am), but at the same time, peer support was also encouraged. In these instances, pedagogues considered children's individual skills, dispositions and stages of development over their biological age as they were allocated caring responsibilities for their peers. For example, more able children helped their peers with squeezing toothpaste on their brushes (P16, Tracker12, 05/06/18, 12:12). Also,

Surprisingly, although there was evidence of personalised hygiene support, combing hair before lunch and after sleep remained the adults' prerogative. The act of combing appeared calming and reflected an intimate dimension of the adult-child relationship, however, it privileged children with long hair only, and took away the opportunity for children to develop their independent skills and importantly, prevented peer support (P26, Time sample19, 13/06/18, 3:09pm).

At meal and snack times, differentiated support tailored to individual needs was observed as much as a 'same for everyone' approach. Pedagogue 6 helped Child20 (3yrs 10mths) and Child24 (3yrs 5mths) serve themselves soup from the bowl in the middle of the table (Tracker4, 17/05/18, 12:02), and P24 allowed Child258 (3yrs 4mths) to pour herself a drink because she

said she could (Time sample22, 15/06/18, 11:27am). While in some groups peer support was encouraged (P4, Tracker2, 15/05/18, 12:10pm), in others, adults took over denying children these opportunities (P28, Time sample22, 15/06/18, 12:06).

The inconsistency in approaches continued as some of the interactions reflected pedagogues' varying levels of sensitivity to the sleep and rest needs of children: both continuous waking up (P5, Time sample3, 16/05/18, 2:20pm& 3:06pm; P26, Time sample20, 13/06/18), and all children having to get up at the same time (Field notes for P28, w/c 11/06/18) were observed.

#### 6.4.2 Meeting emotional /well-being need

Most observed interactions demonstrated sensitivity to children's personal and emotional needs and some pedagogues utilised the mix of ages within their groups. An example of this was when a younger child needed his comforter and P4 asked the child's older friend's support to fetch it and to keep him company as he settled to watch his peers (P4, Time sample1, 15/05/18, 10:57am). A deep level of sensitivity was also illustrated by a perfectly timed intervention that intercepted an older child asserting unsolicited help onto a younger peer in Group 1 (P4, Time sample1, 15/05/18, 10:42am). Interestingly, the same incident went unnoticed by P4's working partner, P3, as Child38 (5yrs 11mths) repeatedly insisted to pair up with and help Child50 (3yrs 7mths) during their PE session, which made the younger child uncomfortable and eventually cry (Tracker1, 15/05/18, 9:28am). Observational records also evidenced P19 sensitively considering those younger children's emotional needs who would be losing their older friends when they left for school at the end of the summer (Time sample 14, 07/06/18, 10:00am).

#### 6.4.3 Utilising peer support

This code provided a label for pedagogues' interactions that intentionally utilised the groups' age-diversity, which included, for example, asking children to help one another during mealtimes (P22, Tracker16, 08/06/18, 15:06) and dressing or getting changed for outdoor play. Unhurried time was provided, and tolerance shown by both children and adults as children had a go at buckles, zips and buttons before the appropriate level of support was provided by either children or adults: for example, Child216 (6yrs

3mths) buttoned up Child229's (4yrs 4mths) cardigan and reassured her that she'd be able to do it soon enough (P10, Tracker7, 29/05/18, 10:11am).

### 6.5 Theme 'Supervision'

Supervisory interactions were observed to varying degrees, and they related to '*observing and reserving*', '*keeping order*' and moving around and watching over children, which I referred to as '*hover*' here (Appendix 12).

#### 6.5.1 Observing & reserving

The code of '*observing and reserving*' was used to capture the act of noticing but refraining from intervening or interfering in children's play. One example of this was demonstrated by P10, who watched over a group of children but did not intervene as Child93 and 94 (both 5yrs 3mths) protected their play space by moving on five of their younger peers (between 3yrs 10mths and 5yrs) from their play shop to another play area so that they could carry on the role play they had started (P10, Tracker7, 29/05/18, 9:28). Further incidents were observed that suggested that supervision took place in a way that gave children the space they needed to take responsibility for themselves and act independently but under the watchful eyes of the adults (P24, Time sample17, 12/06/18 10:12am).

#### 6.5.2 Keeping order

Supervisory interactions included instructions that were frequently (by which I mean twice or more throughout) used to reinforce rules and codes of conduct as interpreted and expected by the adult (P15, Tracker10, Cluster4, 31/05/18, 11:25am; Time sample12, 06/06/18, 8:54am). Instructions were frequently used to ensure orderliness: in children's behaviour (P23, Tracker20, 14/06/18, 11:25am), within the environment (Field notes for P7, w/c14 May 2018) and in children's appearance (P20, Time sample13, 06/06/18, 3:00pm).

Findings also evidence that pedagogues, in their supervisory interactions, interfered in children's play as demonstrated by the extract below:

*As Child262 (6yrs 7mths) and Child269 (5yrs 8) are looking at Child262's completed Logico board together to check it's correct. P23 comes by and addresses Child269: "What do you need to do? You need to find the relevant part of the image and match it up."  
The child is not responding in words but as instructed, turns away from his peer and starts to match up the pictures again on his board. P23 leaves him to continue and walks away.*

(P23, Time sample18, 13/06/18, 9:00am)

While some of the pedagogues appeared to be skilled at positive redirection, others established 'rules' to keep order that seemed harsh, insensitive or disrespectful to children. For example, P4, instead of asking children not to push, reminded them that they valued in the group "*when children [were] kind with their hands*" (Field notes, w/c 14/05/18). In contrast, a supervisory interaction from P27 heightened the insensitivity of the blanket rule for afternoon sleep: as children got into their beds, they were asked to lay head to toe so they could not "*mess around*" (P27, Tracker21, 14/06/18). Some of the observed supervisory interactions appeared to be more about managing the multi-age group rather than utilising the group ecology.

### 6.5.3 Hover

In this study, I used the phrase 'hover' to capture adults moving around play areas seemingly without any intention or purpose other than to check on children. As the observations evidenced, adults stopped briefly then moved on with or without offering children a comment, the occasional instruction or reminder (P27, Tracker22, 15/06/18, 10:03am). Some of this kind of supervision took place during children's sleep/rest time, in the rooms during free play or outdoors as children were engaged in their independently created multi-age play scenarios. Pedagogues in these instances tended to offer brief instructions to children without follow up or waiting long enough to see how children reacted (Tracker5, 18/05/18, 10:43-11.00am; P14, Time Sample9, 30/05/18, 2:30pm).

## 6.6 The four clusters of multi-age practice

The findings presented so far have outlined the range of multi-age interactions across each of the five themes and started to build a narrative of the different styles of multi-age practice. As outlined in section 4.12.4, in Phase 6 of the data analysis individual pedagogue profiles were created using the observational evidence thematically analysed. Then, these profiles were brought together for their conceptual coherence and the interconnectedness between the chain of discriminant features and the following four practice clusters have been identified: 'personalised multi-age practice'; 'adult-led consistent multi-age practice', 'adult-centred

inconsistent practice’, ‘the same for all’ practice. The inclusion criteria for each of the four clusters were outlined in Appendix 11. In the final subsection of this chapter, the identity of the four practice clusters is presented.

The cluster descriptions start with the quantifiable findings summarised in Figures 10-13, which demonstrate to what extent the five themes were represented in each cluster. Combining the quantifiable and qualitative findings from the five themes (in sections 6.1 – 6.5), helped identify characteristics of multi-age interactions that were unique to each and distinguished the four practice clusters from one another. The four joint displays (an example included in Appendix 10) played a key role in arriving at the final iterations of the cluster profiles.

Table 19 below provides a brief introduction to the four clusters of multi-age practice, listing the pedagogues whose observed interactions contributed to developing each cluster profile.

CLUSTER	DESCRIPTION	PEDAGOGUES
Personalised MA practice	A personalised approach to multi-age practice, where pedagogues remain attuned to child-led interactions. Collaboration is encouraged, peer support is utilised and the groups’ age diversity is harnessed.	P4, P16, P21
Adult-led consistent MA practice	An adult-led approach to multi-age interactions, where pedagogues assume greater roles for themselves than for the children. Peer support is encouraged mostly in care related interactions where age-diversity is harnessed.	P10, P19, P22
Adult-centred inconsistent practice	Adult-centred practice, where there is an inconsistency in how the potential in age-diversity is harnessed or forgone. Practice follows the adult’s agenda.	P3, P5, P6, P8, P11, P13, P24, P26, P28
‘Same for all’ practice	Multi-age interactions that forgo group age diversity outweigh those that harness it. Adults teach all children the same way and have the same expectations of all regardless of their age or stage of development. Interactions attempt to homogenise the group.	P7, P14, P15, P17, P20, P23, P27

*Table 19. A brief introduction of the four clusters with the associated pedagogues listed*

As the findings under the five themes are revisited, first, I return to an ‘at a glance’ view of the interactions, but this time, these are presented for each

cluster instead of each theme. The quantified summaries in Figures 10-13 are represented in blue, green and red columns. The blue columns show all observed interactions for each theme, green columns are used to show multi-age interactions (from now on referred to as 'MA interaction') that harness and the red columns for those that forgo the potential inherent in age-diverse groups. The green and red columns, therefore, represent a subsection of the blue column. Where no red columns are included in the figure (10 & 11), it shows that all MA interactions harnessed the potential in age-diversity, and no interactions were observed where the potential was forgone. This was key in determining the consistency or inconsistency in pedagogues' interactions. Figures 10-13 provide an insight into which of the interactions across the five themes were the most and least dominant in each cluster and what proportions of these interactions were associated with multi-agedness. This helps 'zoom in' on the multi-age interactions that were observed as either 'harness' or 'forgo' the potential of group age-diversity. As explained in section 5.12.3, first, the sub-units of analysis in the thematic analytical processes were the pedagogues' interactions; then in the determination of the practice clusters, the pedagogues themselves became the units of analysis (sub-section 5.12.1), mirroring the by-person Q analytical processes. Here, as the practice clusters are presented, both the qualitative and quantifiable findings contribute to the narratives for each cluster where the qualitative details and practice examples substantiate what is presented quantitatively. In the subsequent sections, the practice cluster profiles are provided and features that distinguish one cluster from another are highlighted.

#### 6.6.1 Cluster One: personalised multi-age practice

Figure 10 demonstrates that the teaching and learning related interactions led by children were the most while supervisory interactions the least dominant in Cluster One. All of the interactions that were observed to be associated with group age diversity attempted to harness its potential (green coloured columns), which pointed to a consistent approach to practising in a multi-age environment. Whichever way the three pedagogues in this cluster interacted with children, they consistently utilised what the multi-age ecology of their groups offered. The highest proportion of these interaction were recorded for the theme 'teaching & learning child-led'. Over half (15%) of the interactions relating to care (24%) utilised age

heterogeneity, which included feeding, hygiene routines, dressing, self-help skills, comfort, emotional support and rest.

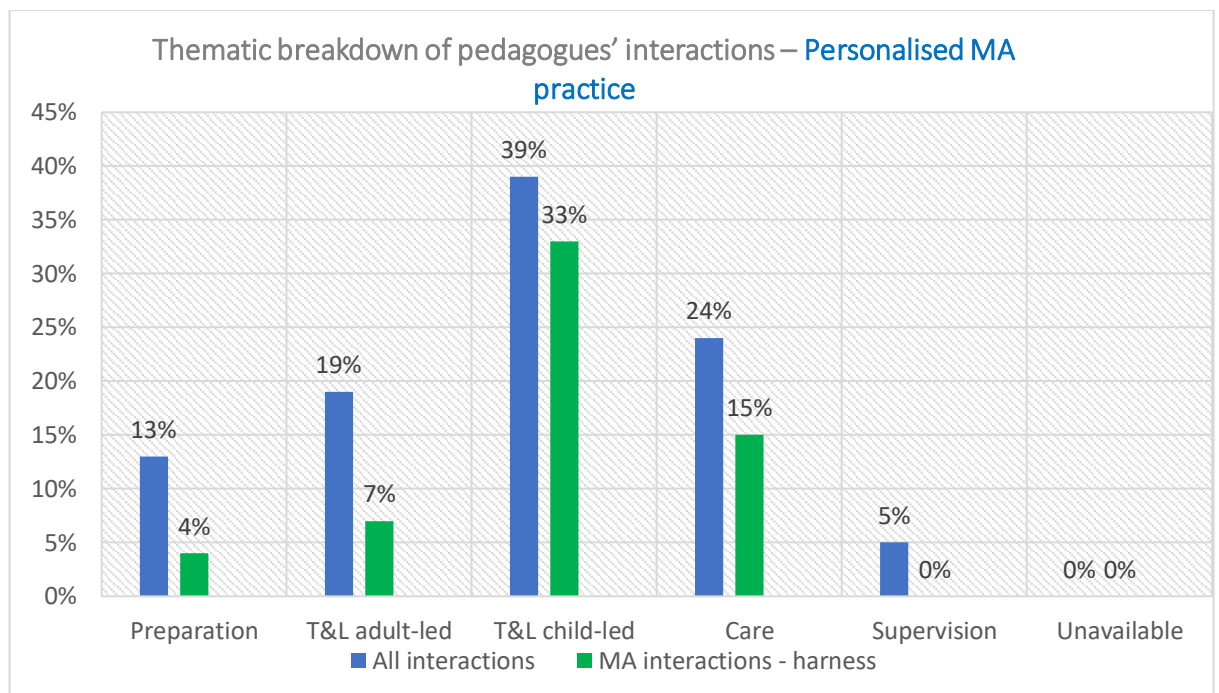


Figure 10. Summary of the percentages of the themed interactions for 'Personalised MA practice'

The three pedagogues' (P4, P16, P21) background information is already provided in sections 4.5.1 & 4.5.3, but it is worth repeating here is that all three pedagogues had over 30 years of practice experience and between 10 and 24 years working with multi-age groups. They were all in the 46-55yrs age bracket and working in Kindergarten 1 and 3.

Drawing on examples from these three pedagogues' interactions across the five themes presented earlier, the key features of multi-age practice in Cluster One are highlighted as follows:

- In-depth knowledge of the children and families and children's prior experiences, which enabled a personalised approach, where support is individually tailored according to children's unique needs and stages of development.
- Positive redirection is employed, and children are provided with opportunities to self-evaluate before praise is given
- Adults' engagement with children shows attunement and intuition, a visceral quality to MA interactions, which affords pedagogically tactful interactions.

- Age-diversity is consistently utilised: all children’s contributions are valued and encouraged in care and preparatory activities (regardless of their biological age), and children are provided with opportunities and responsibilities to lead their own play in multi-age contexts.
- Learning through joint problem solving, negotiation and collaboration between peers is supported and encouraged.

#### 6.6.2 Cluster Two: Adult-led consistent MA practice

As demonstrated in Figure 11, of all four clusters, Cluster Two evidenced the most even distribution of all observed interactions across four of the five themes (blue columns). The greatest proportion of observed interactions were recorded under the two ‘teaching and learning related interactions’ themes, at 23% each. Pedagogues provided as much supervision as care, both at 20%. Supervision in this cluster was four times as much as it was in Cluster One and preparation accounted for the least proportion of interactions at 13%.

Of the interactions that were associated with age diversity, the highest proportion was care related (17%), followed by child-led ‘teaching and learning’ interactions (14%), with the adult-led/initiated interactions accounting for 11%, supervision for 5% and preparatory interactions for 3%. Like in Cluster One, all observed multi-age interactions harnessed the potential inherent in age diverse groups (green coloured columns), which suggested a consistent approach to multi-agedness.

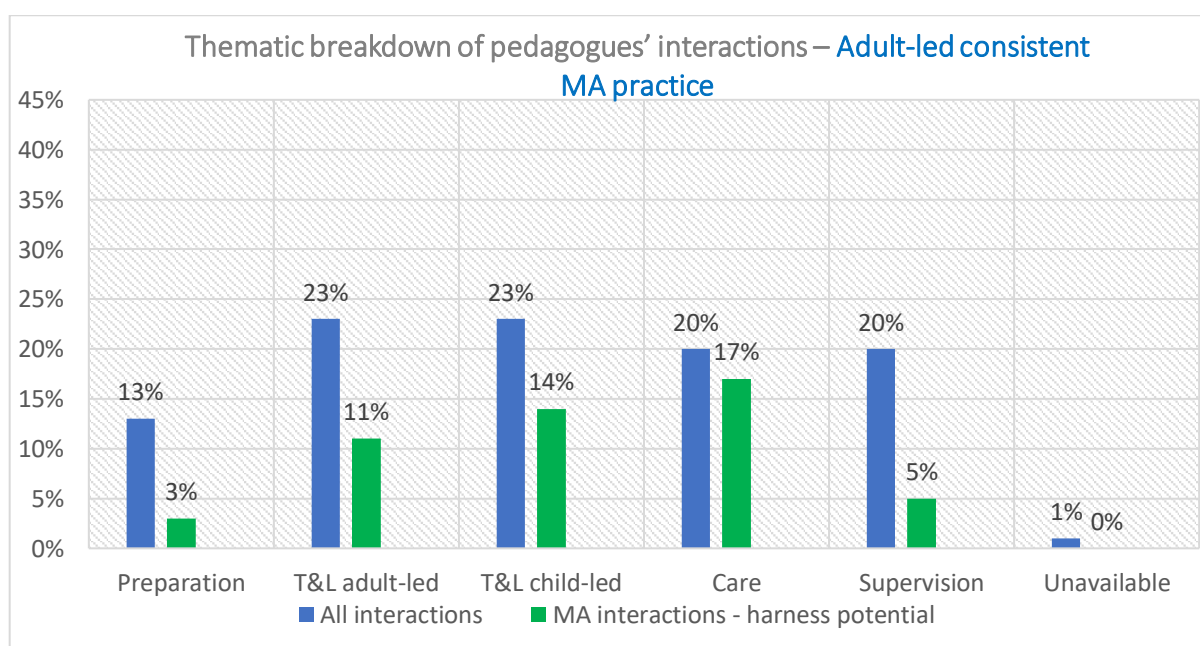


Figure 11. Summary of the percentages of the themed interactions for ‘Adult-led consistent MA practice



Three pedagogues contributed to the profile of Cluster Two: P10 from Kindergarten 2 and, P19 and P22 from Kindergarten 3. Their practice experience in multi-age groups ranged between 12 and 30 years (further detail in Chapter 4.5.2 and 4.5.3). Substantiated by examples from these three pedagogues' interactions across the five themes presented earlier, the following key features of multi-age practice in Cluster Two are identified:

- Assumed responsibility for 'teaching' and leading children's learning
- Differentiation consistently according to the children's stage of development and not their biological age.
- Peer support is most encouraged interpersonal care interactions.
- Conscious efforts are made to utilise the groups' age-diversity as a teaching resource and multi-age collaboration is encouraged.
- Supervisory and preparatory interactions provide children with space to practice independence and manage their own multi-age interactions.

#### 6.6.3 Cluster Three: Adult-centred inconsistent practice

As Figure 12 below demonstrates, in Clusters Three, supervisory interactions were the most dominant and appeared to be a key feature of practice. Although the observed multi-age interactions both attempted to harness and forgo the potential in group age-diversity, those that utilised multi-agedness were more frequently observed across the five themes. This could suggest, that although inconsistently, pedagogues made some efforts to utilise age-heterogeneity in their groups. The interactions that appeared to mostly harness what age-diverse groups offered were 'care' related and 'teaching & learning' led by adults.

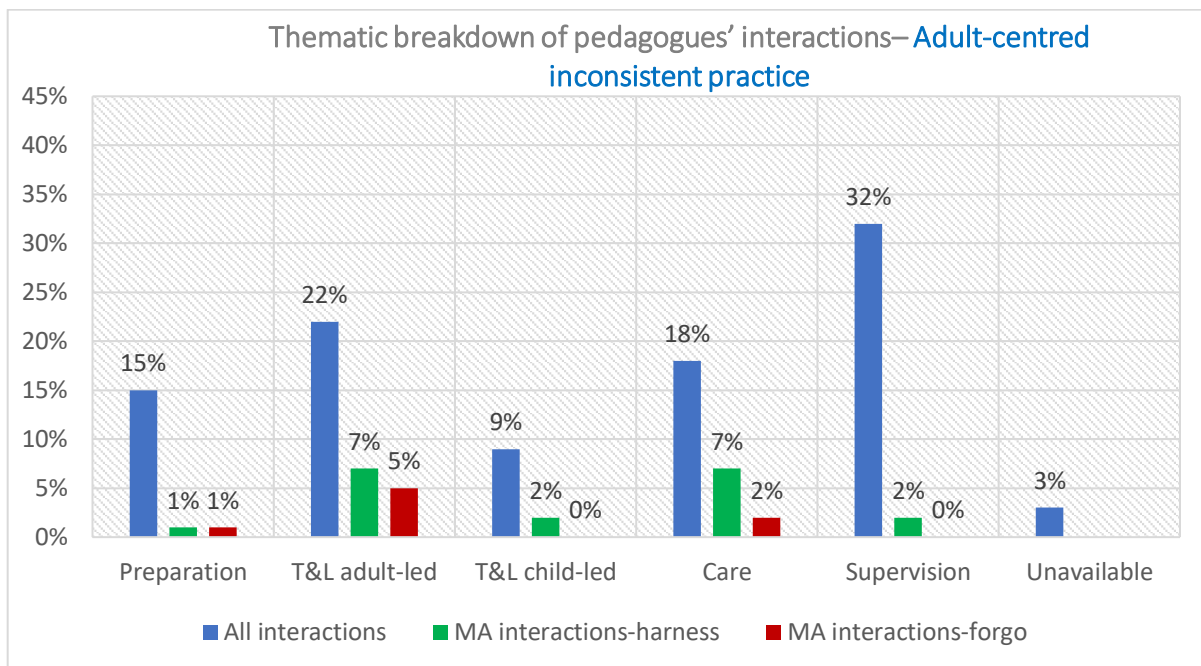


Figure 12. Summary of the percentages of the themed interactions for 'Adult-centred inconsistent practice'

Cluster Three represented nine pedagogues' practice: P3, 5, 6, 8, 11, 13, 24, 26, 28. (Detailed background information is provided Chapter 4.5.) What the nine pedagogues commonly shared was that they had not undertaken continuous professional development specifically on multi-age practice and were assigned to their groups. They had varied experience of working with multi-age groups, which spanned from four to thirty years.

Drawing on the findings from the thematic analysis, the following features are identified as characteristics of multi-age practice in Cluster Three:

- Both the 'developmental stage over biological age' and 'age over stage' approaches are employed.
- Inconsistency in how age-heterogeneity is handled, which breeds age-related expectations and reinforcing 'oldest' vs 'youngest' status. Both a 'same for all' and more individualised approaches are followed.
- Multi-age groups are frequently divided into their three component age groups (3-4yrs; 4-5yrs; 5-6+yrs), which denies or controls access to activities, resources and spaces for those children who are not positioned in the age-wise privileged age groups (typically oldest).
- The deliberate mixing of the ages- in a 'one older-one younger' pattern, in fact, separates children.
- Adult-centred practice follows the adults' agendas

#### 6.6.4 Cluster Four: 'Same for all' practice

As Figure 13 below demonstrates, like in Cluster Three, supervisory interactions were the most dominant and appeared to be the key features of practice in Cluster Four. This was already starting to give an indication as to what pedagogues focused on most and what their priorities were in their MA interactions with children.

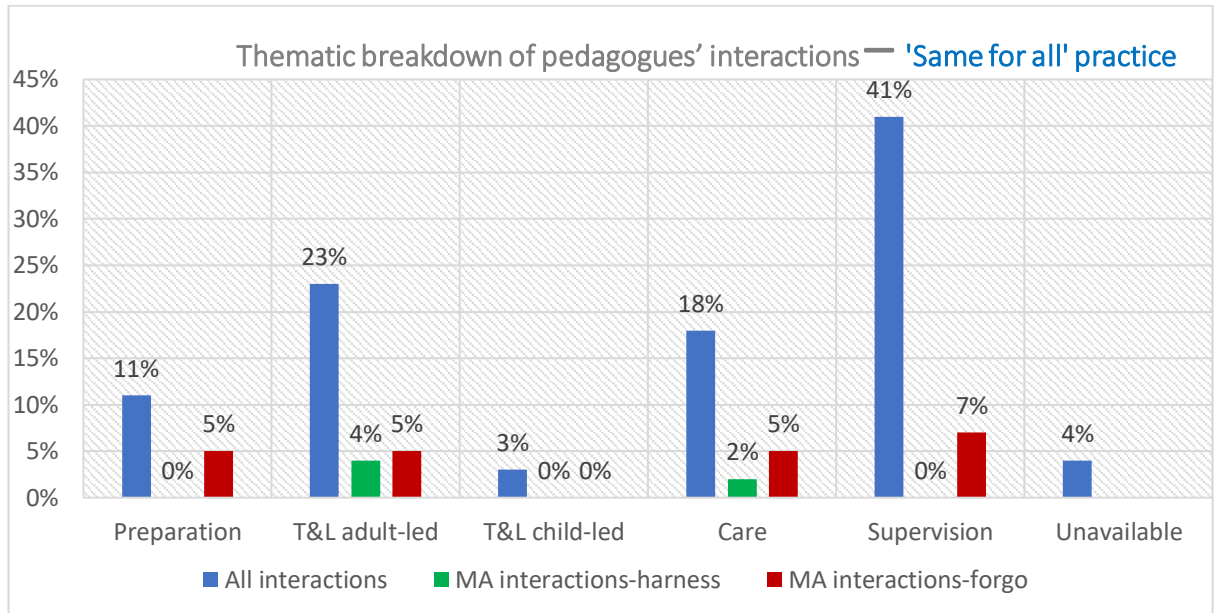


Figure 13. Summary of the percentages of the themed interactions for 'Same for all' practice

Compared to the other three clusters, it was in Cluster Four where the potential of age diverse groups was mostly forgone. In each theme, interactions exceeded those that harnessed the potential of multi-agedness. Child-led interactions were observed the least and it was only in the adult-led/initiated and interpersonal care interactions that pedagogues made minimal attempt to utilise the groups' age diversity.

Of the 22 observed pedagogues, seven met the inclusion criteria for Cluster Four: P7, 14, 15, 17, 20, 23, 27. (Background information for all seven pedagogues can be found in Chapter 4.5.). Like in Cluster Three, pedagogues had a wide range of experience with multi-age groups, which spanned between 1 and 24 years.

Using the practice examples for the five themes previously presented in this chapter, the characteristic features of multi-age practice in Cluster Four are identified as follows:

- Attempts to homogenise multi-age groups, which manifests in splitting them into their age-homogenous micro-groups of 3–4-year-olds, 4-5-year-olds, 5-6+ year-olds, and leads to:
  - lack of differentiation within the micro-groups
  - reinforcing age-related status within the group: 'the oldest' vs 'the youngest'
  - holding age related expectations of children, the same from everyone in their micro-groups
  - adopting a 'same for all' approach particularly evident in interpersonal care related interaction.
  - Removing opportunities for peer support
- Lack of evidence to harness the potential inherent in multi-age groups
- Oldest children's play spaces and resources are protected from younger peers.
- Keeping 'order' (as understood by the adults) is a priority
- Supervisory interactions aim to:
  - reinforce rules and expected codes of conduct,
  - maintain order and neatness within the environment,
  - ensure children's neat appearance

#### 6.6.5 Summary of the observational findings: the four practice clusters

The identified four practice clusters gave account of four different styles of multi-age interactions between adults and children. Figure 14 below demonstrates to what extent multi-age interactions were observed across the four practice clusters, therefore attesting to the variation in multi-age practices in the study context.

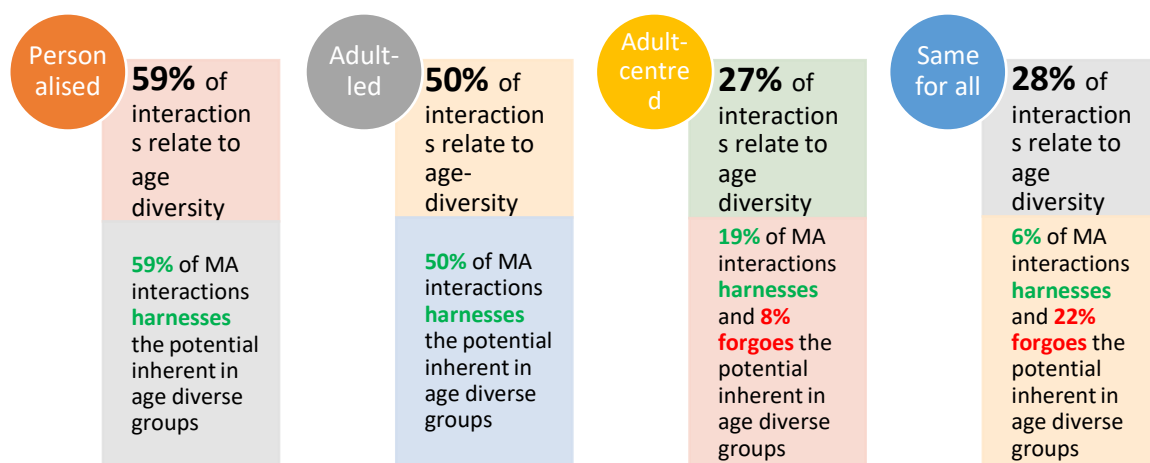


Figure 14. Percentage of MA related interactions that harness and/or forgo the potential of age diversity in each of the four practice clusters

A minimum of half of the interactions were associated with group age-diversity in the 'personalised' and 'adult-led consistent' multi-age practice, and pedagogues' multi-age interactions utilised their groups' age-diversity. Whereas in the 'adult-centre inconsistent' and 'the same for all' practices, approximately quarter of all observed interactions related to age diversity and attempts to harness the potential inherent in multi-agedness only succeeded in fraction of the instances observed. As the name suggests, the potential was mostly forgone in the 'same for all' practice cluster.

## CHAPTER SEVEN: Q-METHOD FINDINGS

The Q data analysis, as presented in Chapter Five, resulted in the grouping of 28 individual pedagogues' subjective views into four factors (shared viewpoints). Each factor offers a working descriptions of shared understanding of the characteristics of multi-age practice that pedagogues reported. Chapter Seven presents the findings derived from the systematically analysed data set consisting of: (i) 28 Q-sorts in which participants reported on the most characteristic and most uncharacteristic features of their multi-age practice; (ii) 28 post-sort individual interviews, which enabled respondents to elaborate on and explain the rank ordering of the statements in their sorts (Appendix 8); (iii) demographic information collected from each participant via a pre-sort questionnaire (Appendix 14). The characteristics of the study sample, in other words the P-set, are summarised in Chapter 4.5.1 – 4.5.4 and these will be cross referenced as the findings are presented here.

### 7.1 The defining sorts for each extracted view

The 28 Q-sorts (each of the 48 statements with their ranking value) were inputted and the dedicated computer programme, PQMethod 2.35 (Schmolck, 2014), intercorrelated rankings and generated a correlation matrix. This encapsulated the full (100%) meaning and variability in the study and accounted for the nature and extent of the relationships between the 28 sorts. A Varimax rotated four-factor solution was selected (explained earlier in Chapter 5.10.1), which accounted for 47% of the study variance with eigen values or 'explanatory powers' (Watts & Stenner, 2012:105) for factors one, two, three and four being above 1.0: 4.48, 3.08, 3.08 and 2.52 respectively (see Table 17 in Chapter 5.10.1).

The rotated factor matrix is presented in Table 20, in which the loadings demonstrate to what extent each individual sort approximates each of the four factors. The defining sorts for each factor are marked with an 'X'.

Q-SORT	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
P1	0.3650	0.2488	0.2639	0.1575
P2	0.1259	0.0475	<b>0.5749X</b>	0.1153
P3	0.1804	<b>0.4540X</b>	-0.0972	0.1540
P4	<b>0.5072X</b>	0.3721	0.3485	-0.0985
P5	0.0681	-0.0004	0.4990	0.5432

P6	<b>0.6801X</b>	0.1242	0.0739	0.2924
P7	<b>0.4553X</b>	0.3457	0.1507	0.1912
P8	<b>0.5804X</b>	0.2520	0.0962	0.0544
P9	0.3543	-0.0148	<b>0.5877X</b>	0.1444
P10	0.2398	<b>0.7389X</b>	0.1816	0.0567
P11	0.1650	0.4901	0.4553	0.2157
P12	0.4077	0.3763	0.5401	0.2220
P13	0.2512	0.6336	0.3596	0.4017
P14	0.1090	0.1143	0.1018	<b>0.3899X</b>
P15	-0.2694	0.3355	-0.2116	0.0700
P16	0.2973	-0.0832	<b>0.4224X</b>	0.1404
P17	0.2602	<b>0.4508X</b>	0.0007	0.2568
P18	<b>0.5057X</b>	0.1349	0.2936	0.1899
P19	<b>0.6697X</b>	0.2538	0.2728	0.2584
P20	<b>0.6809X</b>	0.1208	0.2743	0.2268
P21	0.5466	0.1698	0.5190	0.1156
P22	0.5323	0.2438	0.2842	0.4191
P23	0.3095	<b>0.4426X</b>	0.3099	0.2653
P24	0.5117	0.2741	0.1315	0.5131
P25	0.1211	0.3078	0.3428	0.0809
P26	0.0009	0.3396	0.4773	0.5208
P27	0.2368	0.3729	0.1697	<b>0.4929X</b>
P28	0.4254	0.1914	0.0482	0.6115
<b>Eigenvalue</b>				
	4.48	3.08	3.08	2.52
<b>Explaining variance</b>				
	16%	11%	11%	9%
Total: 47%				

Table 20. Factor matrix, where defining sorts are marked with an 'x' (indicates significant loading at  $p < 0.01$ )

For example, P10 has a factor loading of 0.7389 on Factor Two, which means that this participant's sort provides a 73.89% approximation of this factor. Seven participants loaded onto Factor One, four participants onto Factor Two, three participants onto Factor Three and two onto Factor Four. There are three null sorts (highlighted in yellow), which did not load significantly on any of the four factors and nine confounding sorts, which loaded significantly on a minimum of two factors (highlighted in green). Although these twelve sorts are not included in the factor interpretation and analysis here, their individual stories were examined and used as important contextual information when bringing together the Q and observational data

findings in Chapter Eight. Examining why they did not load significantly onto any one of the factors helped refine each factor description.

## 7.2 Introducing the four factors

Data interrogation revealed four factors, or four distinct views, on the features of multi-age practice and they were named according to their main focus was, as summarised in Table 21 below.

Factor	Defining sorts	Name	Focus
One	P4,6,7,8,18,19,20	<i>A family model</i>	Age-diverse groups operate like a big family, where teaching utilises the “naturally” occurring learning processes among children and pedagogues start from the child.
Two	P3,10,17,23	<i>It is all down to the pedagogue</i>	Pedagogues’ professional skills are key to effective teaching and learning in multi-age groups.
Three	P2,9,16	<i>The group type is of no significance</i>	When pedagogues are skilled and follow a child-centred, personalised approach, they are able to work in both models of group organisation. Same-and multi-age groups offer choice for parents.
Four	P14,27	<i>Lack of knowledge, training, and confidence</i>	Lack of training and knowledge makes pedagogues feel less confident in their multi-age practice, which can result in separating groups into age-homogeneous micro groups.

Table 21. Summary of the names and brief description of the four extracted viewpoints/factors.

### 7.2.1 The four factor interpretations

Each of the four views were represented in factor arrays, which are the ‘ideal sort’ (Eden et al., 2005:419) (Appendix 7). These, as well as the qualitative data gathered through the post-sort interviews, helped refine the ‘identity’ of each viewpoint. To be able to offer a description of the viewpoints, crib sheets were used, which afforded a systematic and transparent analytical approach to building a holistic picture of each viewpoint. The crib sheets served as a system of organisation to ensure nothing was overlooked and every item in the factor array was considered (Watts & Stenner, 2012). An example of a crib sheet can be found in Appendix 9.



The Gestalt principle of Q-methodology suggests that within a Q-sort (a gestalt or holistic entity) each item has its own specific meaning by and through its ranking place within the whole of the pyramid shaped configuration. Each Q-sort in this study captured participants' viewpoints as a whole and was followed by the intercorrelation of these sorts leading to factor extraction. The 'holism' Gestalt principle was also reflected in how each factor array, fundamentally a viewpoint, were represented in a single 'ideal' Q-sort (Eden et al., 2005, p. 419).

The intercorrelation between the 48 statements of the Q-set within the factor arrays was examined through their ranked positions, and started with the most salient statements in the extremes (+5/+4 and -5/-4) and continues with the distinguishing statements. This was particularly important here because, there was a greater degree of consensus on the uncharacteristic features of multi-age practice across the four factors, therefore, significant differences in viewpoints would likely to be represented by statements not only at +5/+4 and -5/-4 ranking positions but also in between these extremes.

Although the whole viewpoint remained the primary focus of my attention, Q being used as a method in this study afforded me with the opportunity to focus on individual statements (single variables). This cross-factor statement comparison helped refine the emerging picture and complemented Q's by-person analysis, where individual pedagogues were the variables themselves.

#### 7.2.2 Consensus among the four factors

Because the main aim of this study is to identify characteristic features of multi-age practice, the condition of instruction for the Q-sorts asked respondents to rank statements that reflected features ranging between 'most characteristic' and 'most uncharacteristic' of their own multi-age practice. The agreement on characteristics that all participants shared is captured by the eleven consensus statements. These, and their rankings for each viewpoint, are listed in Table 22 below.

Stat. No.	Statement	F1	F2	F3	F4
1	There is a concern about younger children's well-being and safety when placed in the same space as older children.	-3	-3	-2	-5

6	'Old timers' have a unique role in mixed-age groups to induct the newcomers into the learning community.	+3	+3	+1	+2
9	<b>Younger children are capable of contributing to more complex play in mixed-age groups than they could initiate if they were in same –age groups.</b>	0	-1	+1	0
20	<b>Parents report that they also witness their children's caring protective behaviours at home after they have experienced it in mixed age groups.</b>	0	0	0	+1
23	Pedagogues find learning most problematic in a mixed-age group: the organisation, the content of it and the opportunities for differentiation.	0	+1	-1	+1
24	<b>Parents and pedagogues fear that preparation for school is less effective.</b>	-3	-3	-3	-4
25	<b>There is lack of time for individual attention in mixed-age groups.</b>	-5	-4	-5	-5
26	<b>In mixed-age groups educators still separate children for certain activities.</b>	-3	-2	-3	-3
43	Stereotyping of children in a mixed-age group diminishes.	-2	0	0	0
44	<b>Differences in development are more noticeable, which urges pedagogues to differentiate, instead of teaching to the average middle level of development.</b>	+1	+2	+3	+2
47	<b>Pedagogues take advantage of the diversity and varying range of ability that naturally occur in a mixed-age group.</b>	+2	+1	+2	+3

Table 22. Consensus statements for all four factors: **bold** statements are non-significant at  $P > .05$ ; the others at  $> .01$ .

The consensus regarding uncharacteristic features (statements 1, 24, 25, 26) slightly outweighed features that were reported to be characteristics of multi-age practice (statements 6, 44, 47). There was consensus on the lack of concern for younger children's physical safety and well-being. In relation to 'teaching', pedagogues did not believe there was not enough time for individual attention in a multi-age group, neither did they believe that pedagogues separated the various ages within their groups for certain activities. The respondents did not believe that preparation for school would be less effective. Interestingly, statement 25 'There is lack of time for individual attention in mixed-age groups' is the only one that reached consensus at the negative extremes (-4 & -5). It was ranked at -5 by fifteen and at -4 by five of the twenty-eight participants. The highest ranking this statement received is +1 by one participant only. In the post sort interviews, there was confirmation from all the participants that there was time for individual children. In their view, it was not dependent on the group type: "How much time and attention are spent on each child depends

*completely on the pedagogue and how they organise and run each day.”*  
(P3)

The three positively ranked consensus statements (6, 44, 47) did not exceed the ranking value of +3, and the consensus was around pedagogues' ability to utilise the diversity in age and capabilities in their groups and to differentiate accordingly. The four consensus statements with neutral rankings centred around stereotyping (43), children's protective behaviours towards one another (20), the problems with organising the group for learning and differentiation (23) and the complexity of play in multi- versus same-age groups (9).

The consensus between the four views provided a backdrop for the interpretation of the four distinct views, which are presented in the subsequent sections.

### 7.3 Factor One: 'A family model'

*"We work as a family; this is how it feels to me. In a larger family, children are different, and, in our group, we have a family atmosphere, children are all different.”* (P4)

Factor One was represented by seven defining sorts, it had an eigenvalue of 4.48 and explained 16% of the study variance. The seven pedagogues associated with this factor were: P4, P6, P7, P8, P18, P19 and P20. They were all female, two pedagogues were under and five pedagogues over 45 years of age. Four of the seven pedagogues appear to be among the most experienced in the study sample with more than 33 years of practice experience, of which, 10-23 years in multi-age groups. Pedagogues 6, 8 and 20 had less experience (one, six and seven years respectively) and all these years were in multi-age groups. Four pedagogues were from Kindergarten 1 and three from Kindergarten 3.

#### 7.3.1 Describing the factor

Statements that enabled views to be distinguished from one another were typically the statements that were ranked either higher or lower by one view than any of the other views. The summary of these for Factor One are presented in Table 23 and 24 below, which is followed by a commentary.

#### *Salient statements*

No.	Statement	Factor score
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10	Development is at a greater pace in mixed-age groups because following the model older children provide, younger ones are prepared to take on challenges that require greater efforts.	+5
13	Life is based on the family principle: all adults take part in the nurturing and all children are full members of this group which is the continuation of their families at home.	+5
42	A mixed-age group operates like a big family; children are very accepting of one another.	+4
11	Children in a mixed-age group accept each other's abilities and appreciate one another for their various strengths.	+4
40	Pedagogues learn a lot from children in mixed-age groups; they are always amazed at how much children love, care for and protect each other.	+4
17	Parents feel that pedagogues are less able to look after each individual child in a mixed-age group.	-4
2	When help is given without it being asked for, it is used to demonstrate power in mixed-age groups: the one giving help assumes the power.	-4
30	In mixed-age groups activities are planned to the developmental level of the older children and easier tasks need to be provided for the younger ones who join in.	-4
25	<i>There is lack of time for individual attention in mixed-age groups.</i>	-5
28	Educators are less willing to work in a system that at first glance appears more complex.	-5

Table 23. Salient statements for the 'Family model' view – consensus statement in italics

The five salient statements at place values of (+5) and (+4) reflected the view that it was the children who were in the centre of multi-age learning, not the adults. In fact, adults learnt a lot from children. Identified practice characteristics related to children's accelerated development (expressed in statement 10 with the ranking value of +5; in abbreviated form from now on as 10:+5), like in a family, children learn from one another. Typically, younger children follow the examples of older children, who provide positive models, therefore, the pace of development is greater in the intellectual, language (4:+3) and the social and emotional domains (8:+3). Older children are also peer models for higher levels of impulse control (5:+2). P8 notes in her interviews that "*patience, tolerance, helping each other and following each other's example*" are more of a feature of multi-age than same-age groups.

Whilst these salient statements are important, much can be gleaned from the distinguishing statements for this factor. They help understand what Factor One is, what it is not and how the seven pedagogues' viewpoint differ from that of the other groups of respondents.

#### *Distinguishing statements*

This shared viewpoint focused on multi-age groups operating like a big family (13:+5) as seen in Table 24 below. They resemble a family structure

in that children of various ages are together with two adults (13:+5) as the excerpt from the interview with P19 explains:

*I emphasize this family model. This is not a characteristic of both types of groups – this is definitely for multi-age groups. With my partner pedagogue in the group, we complemented each other; like a mother and a father... So it's like in a family.*

This view claimed that daily institutional life in multi-age groups was similar to life at home with both adults and children engaged in the act of nurturing (13:+5). This is also supported by the salient statements in Table 23: older children providing security and protection for younger children (40:+4) and acceptance, a caring attitude and valuing one another prevailed (42:+4). Coupled with this was the appreciation for multi-age groups' ability to accommodate siblings, which "extends their time together in out of home care", as stated by P6 in agreement with P7 and P20 in the post-sort interviews.

No.	statement	Factor score			
		F1	F2	F3	F4
10	Development is at a greater pace in mixed-age groups because following the model older children provide, younger ones are prepared to take on challenges that require greater efforts.	+5	+2	-1	+4
13	<b>Life is based on the family principle: all adults take part in the nurturing and all children are full members of this group which is the continuation of their families at home.</b>	+5	+1	0	+2
11	Children in a mixed-age group accept each other's abilities and appreciate one another for their various strengths.	+4	0	+3	-1
35	The pedagogues' work is multi-layered in mixed-age groups because they need to provide greater level of differentiation.	+1	+5	-1	+5
41	<b>Mixed-age groups better meet pedagogues' needs: there are opportunities to nurture the 'babies' of the group and at the same time they can freely converse with the older ones.</b>	+1	-3	-4	-2
18	<b>Parents tend to choose the pedagogue whatever type of group they work in.</b>	-2	+1	+5	+4
30	<b>In mixed-age groups activities are planned to the developmental level of the older children and easier tasks need to be provided for the younger ones who join in.</b>	-4	+1	+1	-1

Table 24. Distinguishing statements for the 'Family model' view - bold print indicates significance at  $p < .01$ ; the rest at  $< .05$

When considering statement 41 placed at (+1) compared to its position in the negative by all the other views, as seen in Table 25, there was a sense that Factor One valued pedagogues' personal and professional well-being by considering their needs. This acknowledged characteristic was substantiated in the post-sort interviews, as these excerpts demonstrate:

*I love it (working in multi-age groups) because it stirs up mother instincts in me [ilyen anyai ösztönöket mozgat meg bennem]. I like to take the younger ones onto my lap, cuddle them, stroke them, ... .*  
(P6)

*The very reason we became pedagogues is because we enjoy working with the youngest of ages who require our love and our positive physical contact; but at the same time, we cherish the challenge of having serious discussions with the older ones.... All the beauty of a pedagogue's life is present in a multi-age group in one academic year. [Az óvónői élet minden szépsége jelen van a vegyes csoportban minden évben.]* (P18)

This came from a mature pedagogue (P18) with 36 years of practice and 15 years of experience in multi-age groups.

Connected to this sentiment was what five out of seven respondents commented on as a characteristic feature of their multi-age practice: a strong sense of community, evident in the highly ranking statements (13:+5 and 11:+4 in Table 24; 40:+4 and 42:+4 in Table 23) and echoed in the interviews (i.e.:P4).

The post-sort interviews suggested that all seven pedagogues believed 'personalisation' to be a characteristic feature of their multi-age practice, where children were treated as individuals, therefore, differentiation was to each child's stage of development and not to the developmental level of older children as indicated by the rank ordering of statement 30, rejected at -4 (in Table 23). This personalised approach was afforded by building on children's prior experiences, what they brought from home, as explained in the interview by P8: "... children come to kindergarten each day in a different mindset and what will be relevant to them is my job to find out".

Not restricting my attention to the salient and distinguishing statements of the Q-sort drawn from comparisons across the four factors, I was prompted

by the post-sort interview data to examine statements, as variables, between the extremes, which added further layers to the interpretation of this factor and pointed to another characteristic that separated this factor from the other three: the belief that multi-age groups provided an environment, where teaching, learning and development happened "*at a pace that suited children*" (P20). There was an affirming view that pedagogues utilised age-diversity and the greater range of capabilities that occurred in a multi-age environment (47:+2). Pedagogues facilitated peer tutoring that benefitted both the tutor and the tutee in the reciprocal learning processes (15:+2), and there was an appreciation of the unique role of 'old timers' in inducting the new comers to the group (6:+3). Aligned with this notion was the recognition of the rhythm of annual change in group composition as explained in the post-sort interview by P7:

*Over the three or four years ... they experience it all: sending their older friends off to school and receiving the little ones who need their help, so they show them the ropes [megmutatják hogy is van ez minálunk].*

In this view, the statement referring to a balanced 1/3, 1/3, 1/3 distribution of the typically three component age groups of a multi-age group (3-4, 4-5 and 5-6+ year olds) was not identified as a characteristic feature of practice (36:-1) (see in Appendix 7 in the factor array for Factor One), because, in P18's words, "*life is not like that*".

In sum, Factor One represented the view that age-diverse groups operated like a big family, where teaching utilised the "naturally" occurring learning processes and peer support between children. Pedagogues started from the child and followed their lead.

#### 7.4 Factor Two: "It is all down to the pedagogue"

*"We provide the opportunities for children to learn from each other. This, I find, is the most characteristic of our multi-age group." (P3)*

Factor Two had an eigenvalue of 3.08 and explained 11% of the study variance. Four pedagogues were associated significantly with this view, P3, P10, P17, P23, one from each of the four kindergartens. They were all female with varying levels of practice experience. P3 and P10 had four and twelve years of practice experience respectively and they had only worked in multi-age groups. P17 had 6 years of experience, five of which were in

multi-age groups and P23 had twenty-two years of experience, eighteen years in multi-age groups.

#### 7.4.1 Describing the factor

This section lists the salient and distinguishing statements for this view in Tables 25 and 26. These aided the factor interpretation.

##### *Salient statements*

No.	Statement	Factor score
48	Differentiated teaching strategies encourage educators to focus on the progress of individuals in a mixed-age group.	+5
35	The pedagogues' work is multi-layered in mixed-age groups because they need to provide greater level of differentiation.	+5
45	Children develop at a faster rate in a mixed-age group because pedagogues reinforce the behaviour of those children who are able to provide more mature models for their less developed peers; they are encouraged to follow these models.	+4
37	Organisation, planning, thinking ahead, teaching strategies are a greater challenge for pedagogues in a mixed-age group.	+4
32	Pedagogues can find appropriate opportunities during normal daily activities to provide more for 5-7-year olds so that they keep up with their oldest peers in same-age groups.	+4
25	<i>There is lack of time for individual attention in mixed-age groups.</i>	-4
16	One barrier is dissatisfaction and rejection by parents: parents feel that older children learn less; little ones are challenged intensely and lose confidence in their own abilities.	-4
17	Parents feel that pedagogues are less able to look after each individual child in a mixed-age group.	-4
19	Parents like mixed-age groups for when their children are the younger ones but not when their children are the oldest in the group.	-5
28	Educators are less willing to work in a system that at first glance appears more complex.	-5

Table 25. Salient statements for the "It's all down to the pedagogue" view – consensus statement in italics

The positively salient statements for this viewpoint identified characteristic features of multi-age practice in connection with the roles and responsibilities of the pedagogues, in particular, the pedagogic strategies they used (48, 35, 37). Pedagogues in multi-age groups trusted in their abilities and professional skills to cope with the more complex and multi-layered task of teaching children of varying ages (45, 32). This notion was reflected in the rejection of statement 28 [Educators are less willing to work in a system that at first glance appears more complex] at place value -5.

Factor Two represented an account that considered the characteristic features of multi-age practice in connection with pedagogues' professional skills and their ability to work effectively with this type of organisation.



Highly ranked statements highlighted what made pedagogues' work complex and multi-layered (35:+5): teaching strategies such as organisation, planning and differentiation on a larger scale (37:+4; 32:+4; 35:+5). These, consequently, presented a greater workload reflected in the positioning of statement 29 at +2, which was highest ranked by Factor Two than any other view.

Greater level of differentiation (35:+5) came across as a strong feature of multi-age practice and it was also a dominant theme in the post-sort interviews. P10 provided an explanation of what she meant by it:

*If you think three ability levels to plan for in a same age group, multiply this by 3 because of the three age groups in a mixed-age groups -so it is a much greater degree of differentiation.*

The rank ordering of statement 45 at (+4) reiterated the significant role pedagogues played in reinforcing more mature peer models, which resulted in faster rate of development for children in multi-age groups. However, the excerpt from the interview with P23 shifted the role of modelling from the children to the adult:

*Primarily we, pedagogues, are the models, the older children follow our examples and through this they become models for the younger children in the group. They pass our models on.*

The negatively salient statements mainly focused on how parents viewed multi-age groups and practice (16, 17, 19). The rejection that parents may worry about the lack of individual attention and that they preferred multi-age groups for their children when they were younger (17:-4, 19:-5) may be interpreted as a reflection of pedagogues' confidence in their professional skills to be able to successfully meet all children's needs in multi-age environments.

#### *Distinguishing statements*

The distinguishing statements further add to the narrative of pedagogues assuming responsibility for the effectiveness of teaching and learning in multi-age groups. Further rejection of parental dissatisfaction suggested that parents were not unhappy with pedagogues' practice and their children's learning in multi-age groups (see Table 26 below).

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No. statement

Factor score

	F1	<b>F2</b>	F3	F4
48 <b>Differentiated teaching strategies encourage educators to focus on the progress of individuals in a mixed-age group.</b>	+1	<b>+5</b>	+1	-1
32 Pedagogues can find appropriate opportunities during normal daily activities to provide more for 5-7-year olds so that they keep up with their peers in same age groups.	0	<b>+4</b>	0	0
36 <b>It is important to achieve the 1/3, 1/3, 1/3 ratio of the ages within the group, because if the younger children are higher in number, they dominate the level for developmental work.</b>	-1	<b>+3</b>	-4	0
33 <b>At the beginning of the academic year, after the older children have left for school, pedagogues play an important role in helping children develop their self-image and to settle status hierarchies.</b>	-1	<b>+2</b>	-3	-1
18 Parents tend to choose the pedagogue whatever type of group they work in – mixed-age or same-age.	-2	<b>+1</b>	+5	+4
8 Mixed-age groups provide an environment for pro-social behaviour to thrive such as helping, sharing, taking turns.	+3	<b>0</b>	+4	+3
5 Segregating younger and older children for safety is unnecessary when the older children are present to model/scaffold higher levels of impulse control.	+2	<b>-1</b>	+2	+2
16 One barrier is dissatisfaction and rejection by parents: they feel older children learn less; little ones are challenged intensely and lose confidence in their own abilities.	-2	<b>-4</b>	-3	0

Table 26. Distinguishing statements for the “It’s all down to the pedagogue” view - **bold** print indicates significance at  $p < .01$ ; the rest at  $< .05$

The distinguishing statements here are examined first in the context of the factor array and individual statements as variables are also used to interpret the factor as afforded by Q used as a method. In the factor array (Appendix 7), along with the distinguishing statement 5 about greater self-regulation and impulse control at the value of -1, further statements referring to spontaneously occurring two-way learning processes (7:-1; 15:0), more complex play (9:-1), supported by peer modelling, were ranked low (in the negative) by Factor Two. As reflected in P23’s comment, the risk of peer modelling was that “*there are models that are not so good... we have to admit, children copy both the good and the bad*”. Contrastingly, Factor One

appeared to be more comfortable with this (5:+2) as explained by P18:  
*"There is always something to learn from bad examples, too."*

One of the criticism of Q's claim of its measurement validity is drawn from instances when the 'ranking' of a statement in the post-sort interview context does not correspond with the ranking of the same statement in the actual sort due to the participant contentiously wanting to carry out the sorting instructions which, in turn, could unconsciously influence the placement of statements in the various ranking positions (Kampen & Tamás, 2014). The following could be seen as an example of this in my study, however, it drew my attention to a feature of multi-age practice in Factor Two: although respondents' rank ordering did not highlight multi-age groups nurturing pro-social behaviours (8:0) in, the post sort interviews emphasised that *"Social development [is] was very successful in MA groups"* (P3). However, as P17 clarified, this success was down to the initial adult models:

*...older ones give models to younger ones in behaviour, in social development, empathy, openness. Because ... we praise them, the younger ones have a go. If a younger one sees an older one do something in a certain way, then they believe me as well.*

This may raise the question if it is the multi-agedness of the group or the pedagogues themselves who are responsible for this perceived success in social development. This extends to another social phenomenon: settling status hierarchies at the beginning of each academic year (33:+2). Factors One, Three and Four rejected adult interference with status hierarchies at (-1) and (-3) (Appendix 7). However, in Factor Two, the notion of assumed adult responsibility in this matter is corroborated by P17's explanation in the post-sort interview. She claimed that when a proportion of children left for school each year, the oldest in the remaining group had to learn to become the positive role models for younger children. In her view, the adult reinforced the responsibility the 'oldest' status gave to children. Also notable in this narrative that practice was considered most effective when the group composition was balanced and the three age groups were represented equally (36:+3). This evoked an image of a neat arrangement, that was controlled by the adult, whereas Factor One recognised that annual enrolment inevitably varied (36:-1).

Another distinguishing statement for Factor Two was statement 32, which asserts that 'Pedagogues can find appropriate opportunities during normal daily activities to provide more for 5–7-year-olds so that they keep up with their oldest peers in same-age groups'. In the context of the unfolding narrative for View Two, its +4 ranking, compared to the lower (0) rank ordering of the same statement by all the other three factors (as seen in the factor arrays Appendix 7), may signify the affirmation of pedagogues' confidence in their skills. However, this confidence may not be completely unanimous across the four significantly loading respondents. Two of the four pedagogues' comments in the post-sort interviews raised the issue of the lack of training specifically for working with age-heterogenous groups (statement 27, Appendix 7). Although ranked at (-2), P3 states:

*... I think this deserve more attention and greater emphasis in our training. It would have been good to come with some formal training regarding MA practice not just the experience and the mentoring we receive from colleagues. This was like a cold shower to deal with the three different age groups.*

However, the characteristics accounting for pedagogues' skills of planning, organisation and differentiation in successfully practicing in multi-age groups were ranked high (48:+5).

In sum, pedagogues in Factor Two were of the view that their professional skills were the key and secured the success of teaching and learning in multi-age groups. Although planning, organisation and thinking ahead was a greater challenge, through appropriate differentiation they took responsibility for each child's individual progress.

#### 7.5 Factor Three: "The group type is of no significance"

*"If the pedagogue is well trained and skilled, she/he would work well in either a same-age or mixed-age group." (P2)*

This shared viewpoint had an eigenvalue of 3.08, explained 11% of the study variance and was represented by three significantly loading Q-sorts: P2, P9 and P16 from three different kindergartens. Demographic information of these respondents revealed that P2 and P9 were regional managers with 30 and 24 years of experience respectively managing kindergartens, whereas P16 had 36 years of experience working directly with children, 23 of which in multi-age groups. All three pedagogues were female, over 46 years old.

### 7.5.1 Describing the factor

For this Factor, it was the post-sort interviews that provided a more nuanced understanding of the shared viewpoint and made it more distinctly different from the other factors, in particular, from Factor One, the 'family model' view. The narrative reflected the belief that assigning children to age-homogeneous or age-heterogenous groups did not hold much significance for pedagogic practice. It was the pedagogues' professional skills that really mattered, a view already expressed by Factor Two ("It's all down to the pedagogue"). In the following two sub-sections, the identity of Factor Three are described by pulling together characteristics as identified by the three defining sorts and by the respondents' explanations from the post-sort interviews. Providing a starting point for the factor interpretation, the salient and distinguishing statements are listed in Tables 27 and 28 below. As the 48 statements were intercorrelated, some similarities in views between Factor One and Factor Three could be noted.

#### *Salient statements*

As the salient statements demonstrate in Table 27, Factor Three valued multi-age groups for nurturing children's social development (8:+4) and for learning together through the two-way processes of peer tutoring (15:+4). Like the 'Family model' view, Factor Three also recognised that multi-age groups operated like a family but ranked the 'child-centred curriculum' statement (46:+5) as one of the most characteristics of multi-age practice.

No.	Statement	Factor score
46	Mixed-age grouping is a child-centred approach where the curriculum fits their needs.	+5
18	Parents tend to choose the pedagogue whatever type of group they work in.	+5
8	Mixed-age groups provide an environment for pro-social behaviour to thrive such as helping, sharing, taking turns.	+4
42	A mixed-age group operates like a big family; children are very accepting of one another.	+4
15	There is a two-way learning process in which older children reinforce their own learning by teaching it to their younger peers.	+4
34	Children can start kindergarten in a mixed-age group at any point during the year, whereas they cannot in a same-age group.	-4
41	Mixed-age groups better meet pedagogues' needs: there are opportunities to nurture the 'babies' of the group and at the same time they can freely converse with the older ones.	-4
36	It is important to achieve the 1/3, 1/3, 1/3 ratio of the ages within the group because if the younger children are higher in numbers, they dominate the level for developmental work.	-4
25	<i>There is lack of time for individual attention in mixed-age groups.</i>	-5

2	When help is given without it being asked for, it is used to demonstrate power in mixed-age groups: the one giving help assumes the power.	-5
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*Table 27. Salient statements for the 'Group organisational model is of no significance' view – consensus statement in italics*

Statement 2, referring to the possible power imbalance between children, was rejected at the ranking value of (-5), which backed up the shared belief that multi-age groups supported the development of acceptance (42:+4) and pro-social behaviour including sharing and turn taking (8:+4).

The distinguishing statements in Table 28 below further sharpen the view on the characteristics of multi-age practice shared by the three respondents whose sorts defined Factor Three.

*Distinguishing statements*

The placement of statements relating to parents suggested that consideration for parental choice (18:+5), how parents feel (17:-2) and parental preferences for multi-age groups at the various stages of their children’s kindergarten lives (19:+3) were distinguishing characteristics of multi-age practice in this Factor Three. It was identified as one of the most characteristic features of multi-age practice that parents chose particular pedagogues, who they felt were able to provide for their children’s individual needs. The positioning of statement 19 at (+3) also reflected the view that parents preferred multi-age groups for their children when they were younger.

Another distinguishing characteristic was highlighted by the rejection of the need for an equally balanced distribution of the various ages in multi-age groups (36:-4). This statement was lowest ranked by Factor Three, which may reflect that, in the managerial task of assigning children to specific groups, a balanced distribution of the various ages did not or could not feature as high priority due to it being dependent on the composition of the intake of children each year. Although with the lower ranking value of (-1), this view was also shared by Factor One.

No.	statement	Factor score			
		F1	F2	F3	F4
46	<b>Mixed-age grouping is a child-centred approach where the curriculum fits their needs.</b>	+1	0	+5	+1

18	Parents tend to choose the pedagogue whatever type of group they work in – mixed-age or same-age.	-2	+1	<b>+5</b>	+4
8	Mixed-age groups provide an environment for pro-social behaviour to thrive such as helping, sharing, taking turns.	+3	0	<b>+4</b>	+3
19	<b>Parents like mixed-age groups for when their children are the younger ones but not when their children are the oldest in the group.</b>	-3	-5	<b>+3</b>	-2
7	Older children are closer in maturity and energy levels to younger ones, so it is more natural from them to learn from them than from adults.	-1	-1	<b>+2</b>	-2
35	The pedagogues' work is multi-layered in mixed-age groups because they need to provide greater level of differentiation.	+1	+5	<b>-1</b>	+5
10	<b>Development is at a greater pace in mixed-age groups because following the model older children provide, younger ones are prepared to take on challenges that require greater efforts.</b>	+5	+2	<b>-1</b>	+4
28	Educators are less willing to work in a system that at first glance appears more complex.	-5	-5	<b>-2</b>	-3
17	<b>Parents feel that pedagogues are less able to look after each individual child in a mixed-age group.</b>	-4	-4	<b>-2</b>	-4
33	At the beginning of the academic year, after the older children have left for school, pedagogues play an important role in helping children develop their self-image and to settle status hierarchies within the group.	-1	+2	<b>-3</b>	-1
36	<b>It is important to achieve the 1/3, 1/3, 1/3 ratio of the ages within the group because if the younger children are higher in numbers, they dominate the level for developmental work.</b>	-1	+3	<b>-4</b>	0

Table 28. Distinguishing statements for 'Group organisational model is of no significance' view - **bold** print indicates significance at  $p < .01$ ; the rest at  $< .05$

Factor Three provided an account that was concerned with pedagogues' professional skills and choice for parents. The characteristics that separated this factor from the other three came into focus through the narratives of the post-sort interviews, which reflected the strength of Q's factor analysis. Although statistically the three defining sorts expressed a shared perspective, the post-sort interviews afforded a more nuanced understanding of the three respondents' individual views: what kept them in

line with one another and what constituted the subtle differences between their views.

Factor Three shared the view with Factor One that multi-age groups provided environments for children, where status hierarchies sorted themselves out as reflected in the placement of statement 33 at (-3) (F1:-1). The rejection of the role for the practitioner to rearrange these at the beginning of each academic year was also echoed by P16 in the post sort interview: "*God forbid, we do this!*"

Although 'family-like' were identified as characteristics of multi-age practice by both Factor One and Factor Three, the latter did not believe that this went hand in hand with greater pace of development as the rank ordering of distinguishing statement 10 suggests at (-1). There was also a slight difference in how Factor Three and one of its defining sorts, P16, interpreted 'family-like'. Unlike the regional managers (P2 and P9), P16 worked directly with children, therefore, it could be assumed that her views were informed by first-hand practice experience. She felt that the way children related to one another and how they play together in a multi-age group could create an atmosphere that could be viewed as family like. However, "*it is not the aim of multi-age groups*", as she emphasised in the post sort interview. In her view, "*institutional care is not really family care*" and kindergartens could only complement the family's role in children's learning. In her interview, she strongly advocated for a personalised approach to children's learning and a curriculum that was tailored to individual needs, so to her, and according to the beliefs expressed in Factor Three, it was irrelevant whether children were in age- homogeneous or heterogenous groups. Congruent with her view was Factor Three's rank ordering child-centredness (statement 46) at +5, and with that identifying it as one of the most characteristic feature of practising in an age-diverse group, where differentiation enabled pedagogues to meet individual children's needs (48:+1; 44:+3) (as supported by further statements examined as individual variables in the factor array in Appendix 7). This notion was echoed and further explained by P16 and P9 in the post-sort interviews, claiming that "*the layers of differentiation is as many as the number of children in the group. So the differentiation is for each child*" (P16). This individualised approach needed to come from within, founded on thorough knowledge of



the child: *"I like the child, the child likes me but most importantly, we love playing together and learning in this way"* (P16).

Coupled with this was the notion expressed in the post-sort interviews that if pedagogues were *"well trained and skilled"* (P2), they were able to practice with either type of group organisation, although *"they can apply a greater variety of strategies in a mixed-age group"* (P2). Although this may have proven to be a greater challenge (37:+3), they did not see it as a greater workload for pedagogues (29:-1) (Appendix 7). Unlike the other three factors, Factor Three did not view working with children of mixed ages as an organisational model that deterred pedagogues from working in a system that at first glance appeared more complex (28:-2). Made possible by using Q as a method, shifting the focus from by-person analysis to examining single statements for their usefulness in refining the unfolding narrative of Factor Three, statements referring to professional skills including planning, differentiation, utilising age diversity, organisation (30:+1; 48:+1; 47: +2; 44:+3) were noted as they were positively rank ordered in this factor array, which confirmed the managers' views that professional skills were pivotal to working with either organisational model.

Factor Three was also concerned by choice for parents, which was notable in the narrative developing from the post-sort qualitative interviews with the two regional managers. One of the managers liked *"to give choice for parents wherever possible"* (P9) and the other claimed that *"Parents asked for siblings to go to the same group, and this is what started off the mixed-age group in one of the cluster kindergartens"* (P2). Statement 22 [Mixed-age groups can be created on parental request so siblings can attend the same kindergarten group.] placed at (+1) backed up this view. This statement (22) was ranked lower by all the other three factors (F1: 0; F2: -2; F4:-3) (Appendix 7). Coming from the managers, this acknowledged characteristic feature may have more to do with marketing rather than pedagogic practice, however, the shared viewpoint was that *"it is more typical that parents choose the pedagogue, not the type of group"* (P9) (18:+5), whether there was a choice between same- and multi-age groups for parents or not. Interestingly, statement 18 asserting that parents tended to choose the pedagogue was positively ranked by all factors but Factor One ('Family model') (F1:-2), which suggested that it was viewed as a distinct

characteristic feature of pedagogic practice in the study context in Hungary by most respondents.

To summarise, Factor Three attributed the greatest significance to a child-centred curriculum provided by a skilled workforce, which rendered the two main organisational model insignificant. However, multi-and same-age groups did provide choice for parents.

#### 7.6 Factor Four: “Lack of training, knowledge and confidence”

*“I came to this mixed-age group without any prior knowledge of mixed-age practice. I had no idea whatsoever.” (P14)*

This factor was represented by two defining sorts completed by P14 and 27. They were from Kindergartens 2 and 4 with practice experience of 3 and 2 years respectively, all of which in multi-age groups. Factor Four had an eigenvalue of 2.52 and explained 9% of the study variance.

##### 7.6.1 Describing the factor

The factor expressed a viewpoint of concerns for the lack of training combined with the lack of knowledge of multi-age practice, which resulted in pedagogues feeling less confident when working with children of varying ages within the same group.

##### *Salient statements*

The salient statements, ranked at the extremes of  $\pm 5$  and  $\pm 4$ , that enabled Factor Four to be distinguished from all the other views, are listed in Table 29 and 30 below.

No.	Statement	Factor score
27	There is lack of training for mixed-age practice.	+5
35	The pedagogues’ work is multi-layered in mixed-age groups because they need to provide greater level of differentiation.	+5
37	Organisation, planning, thinking ahead, teaching strategies are a greater challenge for pedagogues in a mixed-age group.	+4
18	Parents tend to choose the pedagogue whatever type of group they work in.	+4
10	Development is at a greater pace in mixed-age groups because following the model older children provide, younger ones are prepared to take on challenges that require greater efforts.	+4
17	Parents feel that pedagogues are less able to look after each individual child in a mixed-age group.	-4
24	<i>Parents and pedagogues fear that preparation for school is less effective.</i>	-4
34	Children can start kindergarten in a mixed-age group at any point during the year, whereas they cannot in a same-age group.	-4
25	<i>There is lack of time for individual attention in mixed-age groups.</i>	-5

1	<i>There is a concern about younger children's well-being and safety when placed in the same space as older children.</i>	-5
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Table 29. Salient statements for 'Lack of training, knowledge and confidence' view – consensus statements in italics

As seen from the salient statements, when identifying characteristic features of multi-age practice, its multi-layered nature (35:+5) and the uncertainty about planning appeared to be a central to Factor Four. This was partially connected to the lack of training (27:+5). Both respondents agreed that planning and organisation was a challenge (37:+4), however, their interviews revealed variation in how they planned for children's learning. P27 planned for the oldest children:

*I plan for the older ones primarily and linked to that I plan for the younger children. So, I plan for everyone but start the planning for the older children. In a mixed-age group we have the 3 age bands and the planning is 3 times as much work as it is in a same age group.*

P14 further elaborated on the demand of planning for the three levels relating to the three age bands and providing differentiation within each level. She also commented on the challenges of implementing the plans in the everyday realities of kindergarten life.

Both of the positively most salient statements (27:+5; 35:+5) considered multi-age groups in relation to the pedagogues, in terms of training and the complexity of the work that was required of them. Although neither of the two respondents had experience working in age-homogeneous groups, both pedagogues reported in the post-sort interviews that it was harder to plan in a multi-age group, which was mainly due to having to differentiate to a greater extent. It is interesting that even without any prior personal practice experience in both same-and multi-age groups, P14 rejected the idea that pedagogues were less willing to work in a group that appeared more complex (28:-3) (Appendix 7). Perhaps as a reassurance both pedagogues ranked statement 18 highly (+4): they may have lacked knowledge and confidence in practising in an age-heterogenous group, parents still chose them to care for their children.

#### *Distinguishing statements*

As seen in Table 30 below, statement 39, identified as a distinguishing statement for Factor Four, highlighted what appears to be one of the main characteristics of multi-age practice: the importance of planning and the emphasis on always planning anew.

No.	statement	Factor score			
		F1	F2	F3	F4
27	<b>There is lack of training for mixed-age practice.</b>	-2	-2	-1	<b>+5</b>
18	Parents tend to choose the pedagogue whatever type of group they work in – mixed-age or same-age.	-2	+1	+5	<b>+4</b>
39	<b>In a mixed-age group, pedagogues cannot reuse plans from previous years– they always need to plan anew.</b>	0	-1	-1	<b>+3</b>
16	One barrier is dissatisfaction and rejection by parents: they feel older children learn less; little ones are challenged intensely and lose confidence in their own abilities.	-2	-4	-3	<b>0</b>
48	Differentiated teaching strategies encourage educators to focus on the progress of individuals in a mixed-age group.	+1	+5	+1	<b>-1</b>
19	Parents like mixed-age groups for when their children are the younger ones but not when their children are the oldest in the group.	-3	-5	+3	<b>-2</b>
12	<b>Mixed-age groups are recommended for children from disadvantaged backgrounds because for their healthy development they require positive models and emotional adjustment.</b>	0	0	0	<b>-2</b>

Table 30. Distinguishing statements for 'Lack of training, knowledge and confidence' view - **bold** print indicates significance at  $p < .01$ ; the rest at  $< .05$

The post sort interviews provided an explanation for this rank ordering (39:+3). P27 argued that the annual changes of composition in a multi-age group necessitated new planning. She commented that,

*We had 15 children in the oldest age group last year. It is very different to do the weekly or daily planning for a group with 15 six-year-olds from when we have 15 children in the youngest age group. Topics we can utilise from previous years, but the actual activities will have to be planned fresh each year. (P27)*

Lack of training for multi-age practice did not seem to be a major concern for any of the other factors (F1, F2:-2; F3:-1). In Factor Four, however, it was not only a salient, but also a distinguishing statement placed at (+5). In the post-sort interview P27's commented on her Level 6 tertiary training programme from two years ago noting that,

*Even though I went to the campus nursery on placement when I was trained and there were mixed-age groups there, I still don't feel that I have received adequate training to work in mixed-age groups.*

P14, agreed and highlighted that understanding the theoretical underpinning for multi-age practice did not prepare trainees for the workplace.

The rank ordering of distinguishing statement 12 at (-2) could be connected to the family backgrounds of the families both pedagogues were working with at the time of data generation. As P14 explained in their post-sort interview, that Kindergarten 2

*...is also in the catchment for families from poorer backgrounds... and although positive models would be good, when there are so many children with behavioural problems, they learn the bad behaviour from one another.*

In the post-sort interview, P14 commented that she found "*working in mixed-age groups really hard*", which was echoed in statement 29 rank ordered at (+1) [Mixed-age groups present greater workload for educators.] (Appendix 7). The placement of statement 48 at (-1) may suggest that what she meant by "hard" could be due to lacking confidence in supporting the progress of individual children. Instead, the two pedagogues confessed to attempting to separate children into their age-homogeneous micro groups. In comparison all the other three views placed this statement about keeping focus on individual children's progress in the positive as a characteristic feature of multi-age practice (F1:+1; F2:+5; F3:+1).

This ran contrary to the placement of statement 26 at (-3), which described pedagogues splitting children into their age groups for certain activities (Appendix 7). This ranking value would suggest that Factor Four saw this as an uncharacteristic feature of multi-age practice. There also appeared to be a contradiction between the rank ordering of statements relating to peer support (10:+4; 6:+2; 15:+1) and pedagogues' ability to utilise it (47:+3), and what pedagogues said in their interviews after the sorts (a criticism of Q as explained earlier in section 7.4.1). P14's comments evidenced that she removed the oldest children from the rest of the group for activities that would prepare them for school. P27 also resorted to breaking up the group into its age banded component groups for activities such as PE, even though her experience was that children managed these activities in age-

heterogeneous groups well. P27 could see the irony of separating the ages in a group that was pedagogically designed to utilise age-diversity.

*I see the contradiction in this, that we have a mixed-age group but we are planning for the three age groups, by which we separate them.*

Lack of confidence and knowledge was also reflected in P14's post-sort interview, where she explained that she was particularly conscious that she was not able to practice as successfully in a multi-age group as her more experienced colleagues and she felt let down by her training.

Although placed at (0), statement 36, referring to the even distribution of the various age groups within a multi-age group, was commented on by both pedagogues in their post-sort interviews. This was a reoccurring theme in all four shared views, however, in Factor Four, the desire for a balanced distribution of the ages within the group seemed to be connected to the overall group size as well as what they experienced as the widening of the age span in multi-age groups. P14 noted that children could start kindergarten at the age of two and a half at the discretion of the manager, and with six-year-olds allowed to stay for an additional year, the increasingly more diverse age range exacerbated the difficulties they identified earlier with planning, differentiation and organisation.

In her individual sort, P27 placed statement 36 at (+4) and specifically raised the need for a balanced distribution of ages in her post sort interview. She rationalised this by describing her current experience:

*This year I have experienced the impact of the unevenness of the age groups in the group. Last year we had 15 children in the oldest age group, and they all went to school, so now we have 15 of the youngest children in the group replacing them... Eight four to five-year olds, and they really suffered the loss of the 15 friends who left for school and then were unsettled by the 15 youngest children joining the group. So, if we had the 1/3 distribution of ages then the change would always be the same.... (P27)*

The above interview quote seems to suggest that the challenges multi-age groups pose could be mitigated by a more balanced composition and the age span restricted. Interestingly, although the lack of training was identified as one of the most characteristic features of multi-age practice and the interviews acknowledged a lack of knowledge and confidence, these organisational issues were presented as the main cause for multi-age practice being challenging and presenting a greater workload. This was in

striking contrast with Factor One and Three, which did not see the balanced distribution of ages as a characteristic feature of multi-age practice at all.

To sum up, Factor Four reflected a lack of knowledge, confidence and training in multi-age practice. Planning and differentiation proved to be a challenge and presented a greater workload, which drew pedagogues into separating multi-age groups into age-homogenous micro groups to manage daily activities.

### 7.7 Summary

Findings from data generated using the Q-method provide a rich interpretive narrative of some of the constructions of multi-age practice offered by the pedagogues participating in this study. The four shared views, '*Family model*', '*It's all down to the pedagogue*', '*The group type is of no significance*', and '*Lack of training, knowledge and confidence*', are the product of rank ordering via giving each statement weighted scores. Factor analysis not only identified consensus in what each of the four views regard as characteristic or uncharacteristic features of multi-age practice, but also enabled more distinct shared views to be captured. Correlating the diverse views and recognising that within each shared view exists a range of viewpoints afforded the identification of reported characteristics of multi-age practice.

The aim of Chapter Eight is to bring together the two sets of findings in preparation for Chapter Nine, which offers an interpretation of them.

## CHAPTER EIGHT – BRINGING TOGETHER THE FOUR CLUSTERS AND FOUR FACTORS

The four clusters and four shared views presented in Chapters Six and Seven summarised the characteristic features of multi-age practice as enacted and reported to enable me to answer the first two sub-questions. Bringing the findings together here offers the answers to the third sub-question: *What is the relationship between the reported and enacted characteristics and what conclusions could be drawn about multi-age practice in the Hungarian ECEC context?*

The starting points for bringing the two sets of findings together were the practice clusters and their profiles. Adding to these four cluster characteristics were the features of multi-age practice as reported in the four shared viewpoints (factors). The reasons for this are manifold:

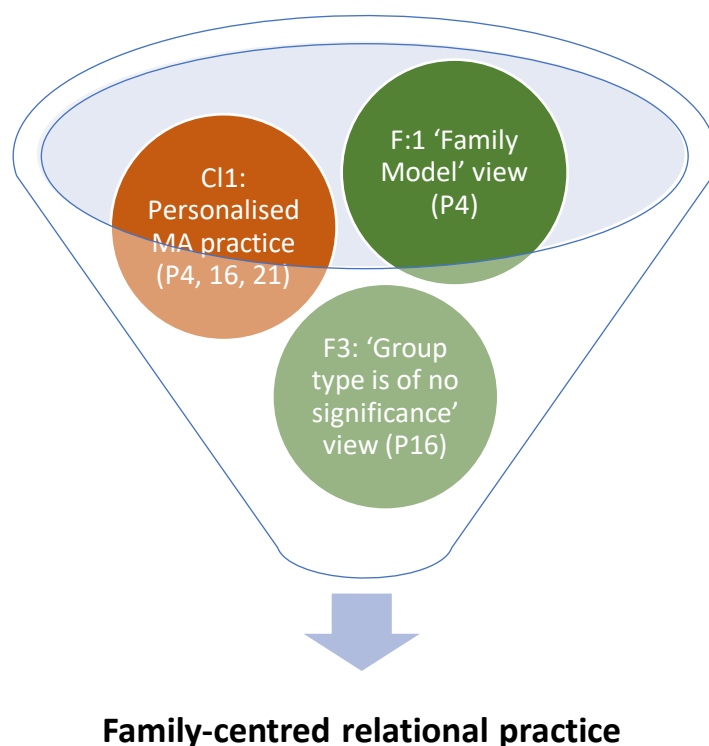
- a) Methodologically, my study design with its focus on adult-child interactions steered me to the observational findings as a starting point as I brought the two sets together. Had I conducted a Q-methodological study, I would have been obliged to start with the Q-findings and use the observational findings for corroboration.
- b) The observational findings accounted for 22 of the 28 study participants' practice (six were in managerial position not working directly with children). Whereas the four retained factors, although statistically providing a significant coverage of the study variance, only captured 16 of the 28 study participants' views. The twelve 'null' and confounding sorts, however, played a significant part in understanding what each of the four factors was and was not by examining either why they did not load onto one single factor or straddled more than one factors.
- c) Drawing together the observational and Q-findings in a joint display (Fetters, 2020) (Appendix 15) to discover linkages yielded new and iterative ways of thinking about my data, whereby the presence and prominence of the identified MA practice characteristics informed my decisions. Six out of the nine pedagogues in Cluster Three (Adult-centred inconsistent MA practice) did not share any of the four established viewpoints, which privileged starting with the observational findings over the Q-findings.



The combined characteristics, therefore, represent features of four different classes of practice, which bear the characteristics of both enacted and reported multi-age practices. They were named conceptually congruently via the synthesis of their features as (i) family-centred relational, (ii) adult-led intentional, (iii) adult-centred incidental and (iv) confused and homogenising practice. These are presented next. In the figures, orange-coloured circles are used for practice cluster (CI) and the colour green is used for factors (F).

### 8.1 'Family-centred relational' practice

As Figure 15 below illustrates, pedagogues, who contributed to the enacted 'personalised' MA practice cluster held views that practising in multi-age groups was like being a 'family' and that 'the type of group was of no significance' .



*Figure 15. A visual representation of which practice cluster and which viewpoint contributed to the 'family-centred relational' practice.*

The 'family model' viewpoint promoted a personalised approach in a family-like atmosphere, which was created by acceptance and tolerance, where children of varying ages played and learnt together and were cared for by two adults. The mix of ages and the greater variety of needs drew on pedagogues' varied skills of caring, nurturing and educating. Pedagogues'

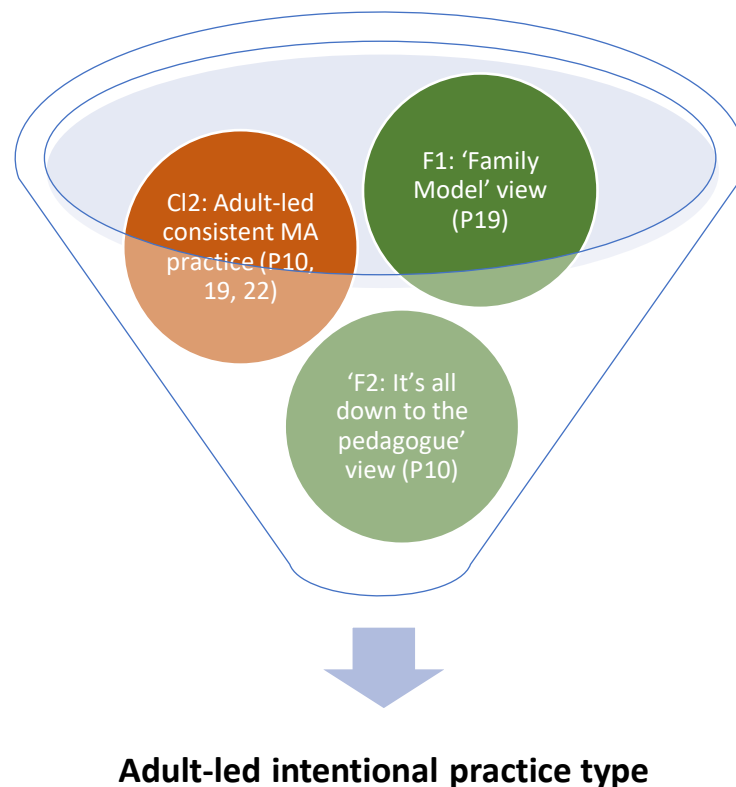
focus was on the learning processes rather than the stages of development as they followed children's lead. Children learnt from one another, and pedagogues utilised peer support and peer modelling. They also built on children's prior experiences to ensure that they met each child's individual needs and interests so that the curriculum remained relevant to them.

Pedagogues, who shared the view that the organisational model was of no significance, also claimed that a multi-age group operated like a family, where children supported one another and where both practice and the curriculum were child-centred and tailored to individuals. Although they recognised the value of peer-tutoring, they also claimed that effective practice, which provided for individual children's needs, depended on the professional skills and attitudes of the pedagogues. Therefore, it was of no significance whether pedagogues worked with a multi-age or a same-age groups.

This had synergies with practice observed in the 'personalised MA practice' cluster, where pedagogues drew on their in-depth knowledge of children and families and their prior experiences, which enabled the personalisation of the curriculum, where support was individually tailored to children's unique needs and interests. Peer support, peer modelling and the potential inherent in multi-age groups were consistently harnessed in interactions between the children and adults as they followed children's lead. It could be suggested that pedagogues' views and enacted practices aligned.

## 8.2 'Adult-led intentional' practice

Figure 16 below shows that in the 'adult-led consistent MA practice' cluster, one of the pedagogues shared the 'family model' view and the other the 'it's all down to the pedagogue' viewpoint, whereas the third pedagogue's sort was confounding but was statistically closest to Factor One ('Family model') (Table 20 in section 7.1).



*Figure 16. A visual representation of which practice cluster and which viewpoint contributed to the 'adult-led intentional' practice*

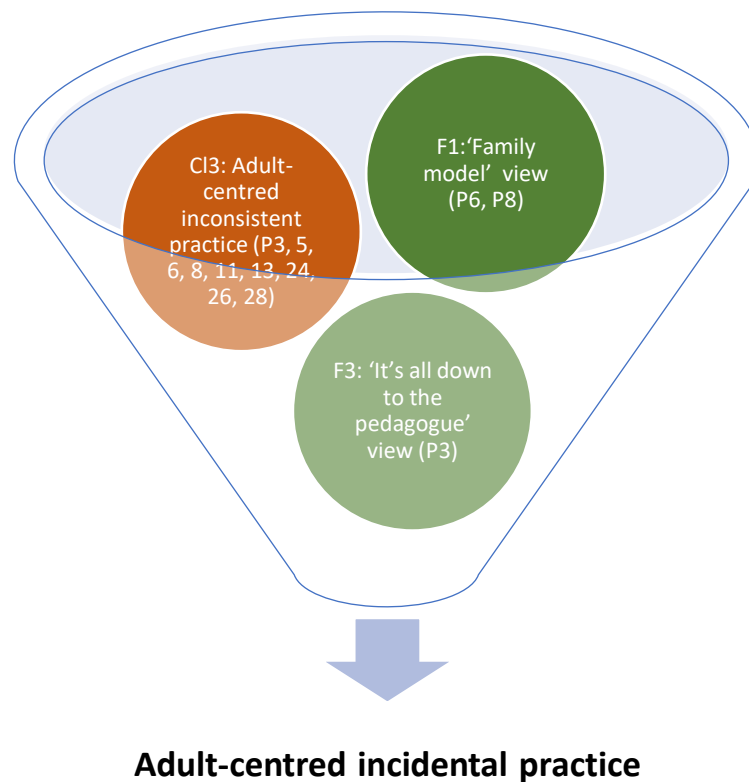
As explained in section 8.1, these views focused on a personalised approach, a child-centred curriculum and both believed that there was something family-like about multi-age groups, where the significance of peer modelling was recognised. Pedagogues' role was to differentiate to individual needs and stages of development and younger children's development was believed to be faster. What distinguished the two viewpoints was that in the 'family model', pedagogues claimed that they themselves learnt from children by finding out what they brought with them to the setting and what was relevant to them in relation to their prior experiences. They also claimed that through peer support and peer modelling children developed at a pace that suited them (unique to each individual). On the other hand, in the 'it's all down to the pedagogue' view, adults assumed greater responsibility in the teaching and learning processes and claimed that their role was pivotal in either approving child models or providing positive models themselves for children. Although organisation, planning and teaching strategies were more complex and provided a greater challenge in MA groups, there was less reliance on the reciprocal learning processes between children and more was

attributed to adults leading children's learning. They felt their job was worthwhile when they taught children something new.

As with the 'family-centred relational practice', observed practice, again, aligned with these reported characteristics in the 'adult-led MA practice' cluster in that pedagogues assumed a greater role in 'teaching' or leading children's learning than pedagogues in the 'personalised MA practice' cluster. Consistent differentiation to developmental stage was observed in pedagogues' interactions with children and conscious efforts were made to harness the potential inherent in the groups' age-diversity. They were observed in care related interactions the most, and adult-led teaching and learning interactions the least.

### 8.3 Adult-centred incidental practice

Interestingly, six of the nine pedagogues in the observed 'inconsistent adult-centred practice' cluster did not share any of the viewpoints identified through factor analysis. Two of these were statistically closest to the 'It's all down to the pedagogue' viewpoint and four pedagogues to Factor Four 'Lack of training, knowledge and confidence' (Table 20 in section 7.1). The three pedagogue who did share a viewpoint, were split between the 'family model' and the 'It's all down to the pedagogue' views as Figure 17 below demonstrates. This would suggest that pedagogues in this cluster had their own unique and individual ways of thinking about the characteristics of their own multi-age practice, which did not show statistically significant similarities to the shared viewpoints captured in the four extracted factors.



*Figure 17. A visual representation of which practice cluster and which viewpoint contributed to 'adult-centred incidental' practice*

Perhaps not unsurprisingly, just as they were divergent in their views, their enacted practice evidenced inconsistencies in their approach to multi-agedness: the potential inherent in age-diversity was both harnessed and forgone. These inconsistencies showed not only within practices across the cluster but also within individual pedagogues' practice. Differentiation to both developmental stage and biological age were observed in pedagogues' interactions, which frequently (observed more than twice) led to age-related expectations and to reinforcing 'oldest' and/or 'youngest' status. Multi-age groups were frequently divided into their three component micro-groups (3-4yrs; 4-5yrs; 5-6+yrs) for certain activities, which denied or controlled access to activities, resources and spaces for those children who were not positioned in the specific age groups by their pedagogues. However, peer support and conflict resolution were encouraged in some instances, and they frequently reflected prioritising biological age over developmental stage, which manifested in pedagogues asking older children to help younger ones. There was also inconsistency in care related interactions in that both a 'same for all' and more individualised approaches to care were observed. As

the two sets of findings were brought together, paradoxically, the inconsistencies in practice and the rather disparate ways of expressing views on MA practice was what created the synergy between enacted and reported practice.

#### 8.4. 'Confused & homogenising' practice

In the 'same for all' practice cluster, the seven observed pedagogues shared opinions that were represented by all viewpoints except for Factor Three that claimed that the type of group was of no significance (mainly held by managers) (Figure 18). Pedagogues from one cluster straddling three different viewpoints would normally point to a misalignment between enacted and report practices. But instead, here one reinforces the other: the 'same for all' practice shows lack of knowledge and confidence in practising with a mix of ages within one kindergarten group, which is reflected in pedagogues seemingly confused way of thinking about their practice, hence the disparate ways they reported on the characteristics multi-age practice in their Q-sorts. In short, what may appear as a contradiction is in fact a reinforcement between how pedagogues practice and what they say about their MA practice: both somewhat confused.

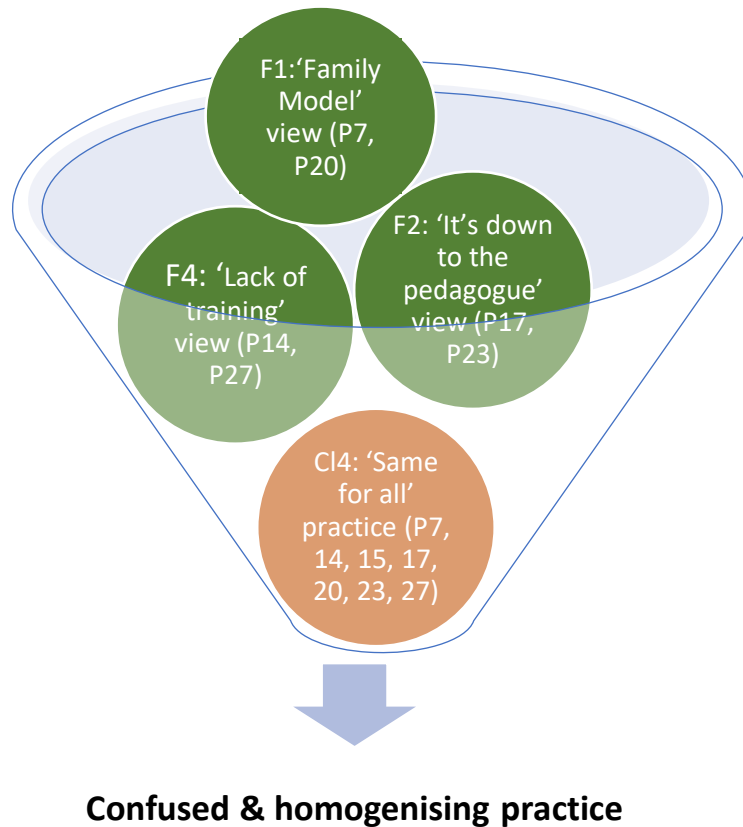


Figure 18. A visual representation of which practice cluster and which viewpoint contributed to the 'confused and homogenising' practice.

This 'lack of training, knowledge and confidence' view considered multi-age practice in relation to the increased workload and the demand it placed on pedagogues in the face of no pre-service training or CPD available that could have specifically supported pedagogues when working with children of 3-7 years old within the same group. While the 'it's all down to the pedagogues' view expressed a sense of confidence with which pedagogues approached age-diversity, in the 'lack of training, knowledge and confidence' view, however, the multi-layered nature of planning, the complexities of organisation and the difficulties in executing planned activities were reported to have made pedagogues' work more difficult. Differentiation was also seen as a greater challenge. To manage these complexities, pedagogues resorted to breaking children up into smaller age homogeneous micro-groups.

This view was echoed in the characteristics of enacted practice. A 'same for all' approach and attempts to treat multi-age groups as age-homogenous were key features of observed interactions in this practice cluster. These were particularly evident in care related interactions, which evidenced a lack of sensitivity to individual rest, dressing and feeding needs. The use of age-homogeneous micro-groups removed the opportunities for peer support and

cross-age interactions between children and keeping 'order', as understood by the adults, seemed to be a priority. As pedagogues' interview comments suggested, their taught theoretical only knowledge of multi-age practice left them unclear about how it might be implemented in real-life multi-age groups, therefore, their practice was focused on trying to manage rather than harness the potential inherent in age-diverse groups.

### 8.5 Summary

As the descriptions in the above sub-section demonstrate, there are instances where there is a reassuring alignment between reported and enacted characteristics of multi-age practice. In each cluster, there are pedagogues who 'practice as they preach', however, there are also pedagogues whose observed practice shows less synergy with what they say about their own practice. In these instances, in the 'adult-centred incidental' and the 'confused and homogenising' practices in particular, this lack of synergy paradoxically backs up what was observed as characteristics of their MA practice: inconsistencies and lack of confidence. These also strengthen the overall picture made up of reported and enacted characteristics at practice group level.

This variation in practice influences how multi-age practice is understood in the Hungarian ECEC context. In the next part of this thesis, what has been learnt so far is discussed and, through synthesis, the implications of these findings are explored.



## PART FOUR: THE SYNTHESIS

This final part of the thesis draws together interpretations of the two sets of findings and what is learnt about multi-age practice through this project. Chapter Nine discusses the study results, which is framed by Bronfenbrenner's Person-Process-Context-Time model developed from his bio-ecological theory (Bronfenbrenner & Morris, 1998, 2006). Finally, the study aims, and research questions are revisited, warranted assertions are made, the project is evaluated and conclusions are drawn in Chapter Ten.

### CHAPTER NINE: DISCUSSION OF THE FINDINGS

#### 9.1 Introduction: setting the scene for the discussion of findings

This study set out to explore multi-age practice in the Hungarian context with a specific focus on reported and enacted characteristics and the relationship between what was reported and what was observed. This chapter brings together the findings presented previously in Chapters Six, Seven and Eight, and they are discussed in light of the literature reviewed in Chapters Two and Three.

The aim of the discussion that follows is to highlight the significance of the combined Q and observational findings in developing more holistic insights of multi-age practice in the changing landscape of kindergarten provision in Hungary. Staying within the study's social-constructivist paradigm, the findings and their implications are discussed from a bio-ecological theoretical perspective through adopting Bronfenbrenner's PPCT model (Bronfenbrenner & Morris, 1998, 2006), where these four defining components frame the analysis of the four identified groups of practice outlined in Chapter Eight. The components of the model are fluid, simultaneously influencing one another, therefore, they are recommended to be examined together. However, for the purpose of interpreting the findings, the components of the model are discussed separately in the subsequent four sections before bringing them back together again for offering a taxonomy of multi-age practice in sub-section 9.6, which marks the main contribution of my study.

#### 9.2 Context

As discussed in Chapter 3.3, according to the bio-ecological systems theory the environment is a hierarchical series of systems going from the most proximal to the most distal (Bronfenbrenner & Morris, 1998). The child and his immediate family are at the centre in the micro-system, and ECEC is

situated in the meso-system together with the child's extended family, peer networks and further services that directly influence the child. For their relevance to this study, implicit policies, siblings, and the composition of multi-age groups are discussed as most immediate real-life contextual influences that affect multi-age EC practice and the child's experiences of it.

#### 9.2.1 Policy

Although the study focus connects my research to the micro- and meso-layers of the bio-ecological system, at a more distal exo- and macro-level, it is worth examining both national and local policy contexts that shaped the conditions under which pedagogues practised and interacted with children. The National Core Programme for Kindergarten Education (Ministry of Human Resources, 2019) lays down the principles for EC practice in Hungary, which does not include requirements for a particular model of group organisation, therefore, there is no explicit policy regulating how children are allocated to their kindergarten groups. Kindergartens and pedagogues are afforded high levels of autonomy to interpret and implement these principles in ways they see fit (Campbell-Barr, 2016).

Presently, there is little known about the reasons for the growing trend of multi-age groups in Hungary. In this study, the participating kindergartens adopted the multi-age organisation model either because their local programme required it or to provide choice for parents (Chapter 4.5.1-4.5.4). The rationale provided aligned with previous suggestion that local programmes, such as Montessori in Kindergarten 1 or Freinet in Kindergarten 3, can determine group organisation strategies and with that, teaching and learning practices (Ansari & Pianta, 2019b; Ramrathan & Ngubane, 2013). It could be suggested then that the adopted local programmes presented an implicit local policy, which appeared to fill the gap that existed in the explicit national policy.

The managers of Kindergartens 2 and 4, on the other hand, explained that multi-age groups had formed on parental request (Chapter 4.5.2 & 4.5.4). with the aim of providing choice for families (Ádám & Hegedűs, 2019; Villányi, 1994). However, instead of the choice between the two group compositions, geographical location and individual pedagogues themselves were reported as most significant in influencing parents' decisions (Teszeyi & Hevey, 2015). In these two kindergartens, parental and/or management

agendas yet again implicitly influenced which organisational model was adopted.

Whatever the reason, multi-age groups were made available for families, which presented a context for early childhood practice, straddling the two most proximal systems: children's homes (micro-system) and their kindergartens (meso-system). The stability of children's immediate learning environment was further strengthened by these connections when siblings, relatives or friends of varying ages attended the same group (Bronfenbrenner, 1995a). This will be discussed next.

#### 9.2.2 Siblings in out-of-home care

It is suggested that unlike single-age groups, multi-age groups can provide a very different ecology, a more familiar and familial context for interactions, which is claimed to provide opportunities for siblings to extend their time together in out of home care (Bornstein, 2012; Gass et al., 2007; Teszenyi & Pálfi, 2019). Placing as many sibling pairs in different groups as in same groups on parental request (Chapter 4.5.4) somewhat contradicts the claim that multi-age groups were formed on parental request. Whiteman et al. (2011) does support the notion that siblings and a family atmosphere help develop a sense of agency and belonging in multi-age groups and sibling allocation reflects this idea in three of the four kindergartens, where more siblings were assigned to the same group than not (Chapter 4.5.1 – 4.5.4).

When considering this in relation to transitions from home to settings, *Ádám and Hegedűs'* study (2019) echoes what the Q-findings suggested (Chapter 7.3.1): that settling-in for a new starter was smoother when a sibling was already in the same group because the older child could support the younger (Kinsey, 2001; Moller et al., 2008). The widespread belief about the advantages of the presence of siblings or other familiar peers in multi-age groups does not take away the responsibilities from pedagogues to support young children's transitions from home to institutional care (Datler et al., 2010). Sibling allocation to different groups could be explained by what *Kósáné Ormai* (2001) draws attention to: that the presence of a sibling may delay the new arrival opening up to and developing relationships with the rest of the group. Similarly, *Körmöci* (2004a) suggests that younger siblings

may hinder the play of their older siblings by their insistent presence and demand for attention.

The findings, giving evidence of siblings both in the same and in different groups, point to imperatives to carefully consider working with siblings in multi-age groups due to its social, emotional and interpersonal complexities.

### 9.2.3 Age composition and the ecology of multi-age groups

Research into multi-age practice has established that age composition is a key component of the ecology of a multi-age group (Ansari & Pianta, 2019a, Bailey et al., 1993, Winsler et al., 2002). Age also determines points of entry and exit in Hungarian kindergartens. As discussed in Chapter [Four](#), attendance is compulsory from the age of three and school starting age typically is the September after the child's sixth birthday (OECD, 2018), however can be delayed by a year to the September after the child's seventh birthday (Office for Education, 2023) (see section 4.4.1). In the study context, the youngest child was just under three and the oldest just over seven years old, creating a 4 years 5 months age gap. This has some congruence with the age composition and the age range multi-age groups straddle worldwide (two to seven years) (Doherty, 2012; Justice et al., 2019; Smit et al., 2015), although there does not appear to be a firm agreement on this.

According to Katz (1995) what matters more, is the proportion of the various age bands within the same group. Across the 12 participating groups, typically, four age bands were represented: 3-4yrs, 4-5yrs, 5-6yrs and those 6-7+year olds who stayed in kindergarten for an additional year. There were variations in the distribution of the ages as summarised in Chapter sections 4.5.1-4.5.4. Of the twelve groups, there were four where at least one of the age bands were either not represented or less than two in number (Group3, Group6, Group8 and Group11). The range of ages as well as the ratio of younger to older children is claimed to influence the ecology of multi-age groups and research literature mostly agrees with the balanced distribution across the age bands. The rationale offered for this is that when multi-age practice is implemented as a pedagogical choice, group composition is also considered as a matter of pedagogy (Ansari et al., 2016; Kravtsov & Kravtsova, 2011).

In the Hungarian context, the desirability for a balanced age composition across the 3-4yrs, 4-5 yrs and 5-6+yrs age bands in a multi-age group is supported by Kósáné Ormai (2001) who claims that if one age band accounts for more than a third of the group, then the developmental characteristics of that age group could dominate the level at which teaching and learning takes place. Correspondingly, two of the four shared perspectives from the Q-findings emphasized the need for a balanced distribution across the age bands (Factor Two and Four – Chapter 7.4.1 & 7.6.1) and in post-sort interviews pedagogues reported that in their planning they prioritised the oldest age group with adaptations made for younger children (P27, full details in Chapter 7.6.1). The three pedagogues, who shared the view that they lacked knowledge and confidence due to lack of training, considered the balanced age composition neither characteristic nor uncharacteristic of their practice. However, in their post-sort interviews they focused on the uneven annual change in age composition and the ever widening age span, which increased group numbers above the 25 recommended by local regulators. It is interesting to note here that extant literature only identifies three age bands in a multi-age group, adding those children whose entry is delayed by a year into the 5-6+yrs age band (Kósáné Ormai, 2001). However, the widening age span due to children starting kindergarten before they are three and some children staying till they are seven years old, is commented on by the pedagogues, as well as evidenced in the age composition of the participating MA groups (as outlined in sub-sections 4.4.1-4.4.4). In pedagogues' view, for the success of multi-age practice, both the even distribution of the ages and smaller group sizes were essential. Williams et al. (2019) also emphasize practitioners' concerns about the size of multi-age groups and assert that the proportion of younger and older children is one of the dimensions that significantly influences whether children and practitioners experience the group size as comfortable or too large.

When reviewing the Q and observational findings in relation to the context component of the PPCT model, it could be concluded that within this study, practice that harnessed the potential of group age diversity was represented by pedagogues who mostly did not think it was important to have a balanced distribution of the various ages in the group. These were pedagogues from practice types 'family-centred relational' and 'adult-led

intentional' and ranked the importance of the balanced age composition low in their Q-sorts. On the other hand, those three pedagogues' practice who ranked the balanced distribution of the various age bands highly, belonged to the 'confused and homogenising' practice type characterised by dividing groups into their age-homogeneous component micro-groups or treating the whole group the same with the same age-related expectations. In their practice, the potential in group age-diversity was mostly forgone.

Across the participating kindergartens, there was evidence of both balanced and uneven group age composition, which suggests that age composition in this study context bears little significance to pedagogues' ability to interact with children in ways that either harness or forgo the potential inherent in age-diverse groups. Neither did the implemented pedagogical approach seem to influence how multi-agedness was utilised. Although four of the six pedagogues from the kindergarten that worked with the Freinet approach, for example, were observed to harness age-diversity in their practice, only one of the six pedagogues from the kindergarten that followed the Montessori approach did. Children of varying ages and the adults present gave each group its specific internal structure. However, with the inconsistencies explained here, it is difficult to draw clear conclusions: there appeared to be variation in practices in age-diverse ecologies across and within kindergartens.

### 9.3 Time

Time and timing are related features of the environment (Bronfenbrenner, 1995a), and the findings of this study point towards certain temporal and spatial aspects of time at micro-, meso- and macro-levels that are considered as significant parts of the ecology of multi-age groups (Bronfenbrenner & Morris, 2006).

As explained in Chapter 3.4.4, both qualitative and quantitative concepts of 'time', referred to as Kairos and Chronos respectively, foreground the application of the PPCT model to give meaning to both sets of research findings. The temporal and spatial aspects of time, including longevity, continuity, cycles, pace, schedules and routines, the fluidity and rigidity of time are discussed in the next five sub-sections.

### 9.3.1 Longevity and continuity

In this current study, the concepts of longevity and continuity of macro-time were implicitly expressed in the local study context section 4.5 of Chapter Four as the age composition for each group was summarised. Each child and family stayed with the same two pedagogues for a minimum of three years, which is typical in Hungary (Józsa et al., 2018). Longevity in this sense is claimed to be the hallmark of multi-age groups (Edwards et al., 2009; Fu et al., 1999; Kryzer et al., 2007), and is currently made possible by national policy, which makes kindergarten care and education compulsory from the age of three with the school starting age at 6+ years (OECD, 2015:4). However, in each group, some of the children's entry to school was delayed by a year; 26 out of the 107 (24%) children leaving for school across the twelve participating groups (Chapter 4.5.1-4.5.4). Here, longevity in the multi-age organisation gained real significance, because it enabled children to seamlessly continue their time with the same pedagogue and in the same group for another year (Karcag, 2005; Körmöci, 2019).

For these children, the two practices (family-centred relational and adult-led intentional) that consistently utilised group age-diversity could potentially extend personalised provision and learning that was appropriate to them and their individual stages of development (Katz, 1995). They experienced the start of a new academic year (their fourth year) the same as in the previous years and their attachment to the pedagogues and the continuing presence of their peers helped them overcome the loss of their school-age friends (Körmöci, 2004b; Kósáné Ormai, 2001). This delay, however, would create a less favourable situation in same-age groups, because children would have to join a new group of 5-6+ year-olds for their final year and settle in again (Ádám & Hegedűs, 2019). Therefore, it could be concluded that multi-age groups are beneficial for those children for whom school entry is delayed by a year.

Extended time spent together is suggested to allow stronger relationships between practitioners and children and their families to develop (Ansari & Purtell, 2018; Broome, 2009). This longevity afforded pedagogues the opportunities to gain insights into the culture and beliefs of the families, which helped both parties to understand their motivations towards the child (Bailey et al., 2016; Hoffman, 2003). This was particularly evident in the

'family-centred relational' practice group (Chapter 8.1). Here, the children regularly shared their out-of-kindergarten experiences with the pedagogues (for example, the spices children had tasted and the countries they travelled to outlined in Chapter 6.3.1), which informed and gave meaning to how they interacted, and helped to ensure that the curriculum remained relevant (Fleer & Hedegaard, 2010; Katz, 2011; Taole, 2017).

Q-findings also support this notion as three of the four shared viewpoints reported parents' tendency to choose the pedagogue for their children "*not the type of group*" as a feature of multi-age practice (Chapter 7.4, 7.5, 7.6). Although choosing the pedagogue appeared to be a distinct feature of ECE provision in Hungary, it did not necessarily mean it was a feature of multi-age practice in general. In their previous study, Teszenyi and Hevey (2015) found that parents emphasised the need for the stability afforded by the continual presence of the same pedagogue, who they trusted. This was particularly important in multi-age groups where, over the three-year period, the annual change in group composition could potentially disrupt children's experiences (Teszenyi & Pálfi, 2019).

The concept of continuity in meso-time was recognised through the predictable and co-ordinated care provided by both the pedagogues and the family, which happened with 'temporal regularity' and was aligned with the child's biopsychological characteristics (Bronfenbrenner & Morris, 2006:820). Observed interactions varied across the four classes of groups: pedagogues in the 'family-centred relational' and the 'adult-centred intentional' practice groups (Chapter 8.1 & 8.2), accommodated and encouraged children's continuing efforts to care for one another and their environment (dressing and hygiene routines, sleep/rest needs, using comforters brought from home - Chapter 6.4), which reflected reciprocal respect between the institution and the family, who jointly took care of the children (Pestalozzi, 1894; Valkanova, 2015).

Contrastingly, pedagogues in the 'adult-centred incidental' and 'confused and homogenising' practice groups developed care and nurturing practices that suited pedagogues' needs, rather than co-ordinating it with the rhythm and temporal regularity that children might have experienced in their homes. Examples of this kind of practice included only allowing comforters for bedtime or children having to eat when pedagogues judged it was time



to do so, whether hungry or not (Chapter 6.4.1). Time, in these examples, was controlled by the adults and used as a commodity to be spent efficiently, which provided no space for children to respond to their inner cues that they might have brought with them from home (Cuffaro, 1995). This, therefore, could have potentially disrupted the continuity in their interpersonal care.

Continuity ensured in the family-centred relational (Chapter 8.1) and adult-centred intentional practice (Chapter 8.2) reflected a qualitative understanding of time (Kairos), which was in the possession of the children, and they could take and use time as they needed. However, continuity was forfeited in the two latter practice groups, where pedagogues used it in a quantitative sense (Chronos). Rather than children possessing it, they were possessed by it (Cocker, 2015; Cuffaro, 1995).

### 9.3.2 Pace

Pace as a temporal concept, again, was understood both qualitatively and quantitatively. Both Chronos and Kairos time were referenced in the Q-findings and were also highlighted by the observational findings in relation to the ebb and flow of learning driving development (Kairos) (Chapter 8.1, 8.2), and in pedagogues' age-related expectations and differentiation to both chronological age and developmental stage (Chronos) as summarised in Chapter 8.3 and 8.4.

The combined findings suggest that in the 'family-centred relational' practice (Chapter 8.1), pace of development, in the main, was considered as individual and unique. Q-findings ('family model' view) concurred that, like in a family, children learnt from one another, typically, younger children would follow the examples of older children, therefore, the pace of development could be faster (Chapter 7.3.1). This view appeared to have synergies with the assertions of Pivókné Gajdár (2012) and Fosco et al. (2004) on a faster pace of development for the younger children in multi-age groups, which they claim is partly due to the more mature models. It is also suggested that this could be attributed to children's willingness to tackle more challenging tasks as they interact with more mature peers (Körmöci, 2004a; Kósáné Ormai, 2001; Rouse, 2015) as seen in the outdoor play scenario where a younger child (3yrs 5mths) fetches water from the outside tap with the help of an older child (5yrs 9mths) to create a lake in the

sandpit (Chapter 6.2.4). Shared experiences like this, because of the greater variety of contributions from the various ages, could enable younger children to initiate interactions in more complex and more advanced play, which in return could accelerate the pace and rate of development (Ansari et al., 2016; Doherty, 2012).

However, pedagogues in the 'family-centred relational' practice (Chapter 8.1) also emphasised that children learnt at a pace that suited them (Kappler & Roellke, 2002; Song *et al.*, 2009). In this sense, whether children were in same- or multi-age groups had no significance as one of the three pedagogues reported (Chapter 7.5.1). Either way, children's unique needs and interests would inform pedagogues' interactions as they followed the child's lead and pace in their personalised approach. In this way, support was tailored to children's unique ways of learning and accordingly, peer support was utilised as a teaching resource (Fleer, 2003; Fleer & Hedegaard, 2010) (Chapter 6.3.2).

In the 'adult-led intentional' practice group (Chapter 8.2), the shared view, that claimed 'it was all down to the pedagogue' (Chapter 7.4.2) emphasised the role of adults in their interactions with children in multi-age groups. It was claimed that differentiation and adults reinforcing more mature models was what influenced the pace of development. This, however, assumed that typically younger children relating to older peers in their play elicited behaviours that included more mature and cognitively more complex play (Gmitrova & Gmitrov, 2004). It was also the pedagogues who ensured that children in multi-age groups kept up with similar aged children in same-age groups (Körmöci, 2019). In pedagogues' view, it was down to the pedagogue to implement instructional strategies (differentiation, planning and organisation), which, although a greater challenge in multi-age groups, matched the pace for various stages of development (Aina, 2001; Ansari & Pianta, 2019b) (Chapter 7.4.1). Observational findings evidenced practice where allocating roles or tasks to children was informed by adults' prior knowledge of children's various stages of development and dispositions. Offering tailored support enabled children to develop at a pace that suited their individual needs (Edwards, 2007), like in the Puss in Boots re-enactment activity (Chapter 6.2.1).

Observational findings suggested that pace was considered in relation to both chronological age and stage of development, and in the 'adult-centred incidental' practice, it mostly presented in inconsistently applied age and/or stage related expectations (Chapter 8.3). In other instances, chronological age informed how pedagogues organised children into the three age-homogeneous micro-groups, by which they applied the lock-step blue-print for single-age groups in a multi-age context, assuming that children's progression was hierarchical and at a predictable and expected pace (Kósáné Ormai, 2001; Tharu, 2007), for example, in PE and school preparatory activities (Chapter 6.2.1, 6.2.5).

In single-age micro-groups was typically the way practitioners planned for and implemented experiences for children as reported in the 'confused and homogenising' practice (Chapter 8.4). Teaching in age-stratified micro-groups reinforced the acceptance of typical rates of development for each chronological age group, and also the assumption that the older the children are, the more advanced their development is (Deliné Fráter et al., 1993; Rouse, 2015). Furthermore, direct comparisons with the pace of development of similar-aged children in same-age groups were made, as if to justify that the teaching strategies employed in multi-age groups were equally effective (Chapter 7.4.1 statement 32:+4). Worryingly, this reflects a handicapped view of multi-age practice (Benveniste & McEwan, 2000) and could potentially add stress to practice that was already inconsistent and confused by having to work towards age-specific goals (Edwards et al., 2009).

In the 'confused and homogenising' practice (Chapter 8.4), both observed and reported characteristics reflected pace that was understood in relation to children's biological age. In fact, it appeared that the three chronological age bands and corresponding pace of development themselves caused problems for pedagogues. To manage the complexities of multi-layered differentiation, they treated children the same in their age-banded micro-groups, or indeed within the whole group, which steered pedagogues towards overlooking the individual and varying pace of development in their practice (Körmöci, 2004b). This, against the nature of multi-age practice, reflected the assumption that children's development and learning could be paced by adult intervention (Penn, 2011; Stone, 2004, 2009), as

demonstrated by the craft activity detailed in Chapter 6.2.5, where children of varying ages were expected to create an ocean scene on a paper plate in the same way and at the same pace. Pace here, as a Chronos time concept, disregarded the notion that time for young children is more fluid. The adult used pace to assert control and authority, which left children powerless. Kairos was rejected in pursuit of Chronos (Cocker, 2015; Cuffaro, 1995).

Findings for the adult-centred incidental (Chapter 8.3) and the confused and homogenising (Chapter 8.4) practices reinforced the notion that development was linear, when it is widely recognised that children of the same chronological age vary in their pace of development (Fosco et al., 2004; Katz et al., 1993; Walsh et al., 2010). This created tensions for pedagogues between interactional strategies suitable for age-diverse groups and having to ensure progress towards predefined goals for the various stages and/or ages of development. The inconsistency and confusion could have stemmed from the prevailing influence of the two curriculum frameworks that preceded the current National Core Programme (Ministry of Human Resources, 2019). The 1971 and 1989 Kindergarten Education Programmes (Országos Pedagógia Intézet, 1971, 1989) both listed developmental outcomes for the three distinct age bands and the accompanying practice guidance placed expectations on pedagogues in relation to these. It could also be explained by humans' deeply engrained habit of setting out time in space, where the regime of Chronos time rules how adults render children's pace of development into calculable uniform measurements. This Chronos-time anxiety could have hindered, or indeed dominated, pedagogues' practice in multi-age contexts (Lipari, 2014).

### 9.3.3 Cycles

Another temporal feature of multi-age groups' ecology is cycles, a concept of Chronos, which marks the beginning and the end of a set period of time (such as a week or an academic year) repeating at regular intervals (Cocker, 2015; Lipari, 2014). Cycles are intrinsically connected to the pedagogic premise of multi-age education demonstrated in (i) the cyclical change in group composition, (ii) the annual change in the dynamics of the learning community (Bandura, 2006; Kozulin, 2003; Verenikina, 2004), (iii) recursive learning and successive modelling (Doherty, 2012; Moller et al., 2008).

The continuous cycle of the changing ecology shows in the change of group composition year after year (Proehl et al., 2013) as explained in section 9.2.3 above in relation to setting-in. Observational findings also pointed to children's varying experiences of the annual cyclical change. On the one hand, annually expected events, such as saying good-bye to friends or end of year performances, marked the passage of time and gave children's positive macro-time experiences an internal structure (Cuffaro, 1995), as seen in the adult-led intentional practice group (Chapter 6.4.2). On the other hand, in the adult-centred incidental (Chapter 8.3) and confused and homogenising practices (Chapter 8.4), children wished the annual cycles away so that they could gain access to roles and play areas that they had been so far denied (Körmöci, 2004a) (Chapter 6.1.2 & 6.1.4). It appears that the more practice follows adult agendas and the more the potential of age-diverse groups is forgone, the more children experience cycles as pressure rather than an accommodating rhythm to their kindergarten life (Cuffaro, 1995; Drabinski, 2016).

#### *Cyclical change in the dynamics of the multi-age community*

The annual change in multi-age groups ecology is suggested to go hand in hand with the annual lifecycle of its community (Purtell & Ansari, 2018), which could bring change in roles and status hierarchies, including children's leadership roles (Katz et al., 1993; Proehl et al., 2013). Q-findings for the 'family model' view suggested that younger children's responsiveness increased as they observed their peers' positive emotional expressions (e.g.: happy to be at kindergarten, joyful engagement in experiences) or as they gained pedagogues' approval of their behaviour (Stone, 2009) (Chapter 7.3.1). The disinhibition of socially acceptable and approved behaviour took place (Bandura, 1986) and in some instances, socially unacceptable behaviour as highlighted in the post Q-sort interviews (Chapter 7.4.2).

The oldest of children leaving for school provided opportunities for roles within the multi-age groups to rearrange, for modelling and leadership roles to be passed on to the younger members of the group (Katz, 1995). It has been suggested that leadership skills are organically woven into the fabric of multi-age groups (Proehl et al., 2013). Those children who attended the group for multiple years (typically three) could experience being both younger and older members of their community (Lillard, 2016), moving from receiving peer support to leading younger peers while consolidating their

own learning (Ansari & Purtell, 2018; Katz et al., 1993; Winsler et al., 2002).

How pedagogues reportedly dealt with these shifts in status hierarchies varied across the four identified practices. In the 'family-centred relational practice' (Chapter 8.1) pedagogues claimed that they trusted in children's abilities and did not interfere with the social processes that took place between them (Chapter 7.3.1). However, Kósáné Ormai (2001) identifies it as a role for adults to rebalance peer status at the beginning of each academic year. This is based on the assumption that with the change in composition, status hierarchies also change, from which some children gain, while others may be disadvantaged unless an adult intervenes. In the 'adult-led intentional' practice (Chapter 8.2) pedagogues reiterated the adults' role in helping young children learn to accept their own limitations and their place in their multi-age groups (Huf & Raggl, 2015; Katz, 1995). Their sorting values for settling status hierarchies, was the highest across the 4 shared viewpoints (Chapter 7.4.1). In the 'adult-centred incidental' (Chapter 8.3) and the 'confused and homogenising' practice (Chapter 8.4), pedagogues' interactions repeatedly reinforced 'oldest' or 'youngest' status, frequently (observed more than twice) at the younger children's expense of being excluded from certain activities or play areas, such as the mezzanine (Chapter 6.1.1 & 6.2.5).

As seen so far, three of the four practice groups reported or enacted assumptions that, with the cyclical change in dynamics and group composition, status hierarchies and peer standing also altered. Pedagogues in these groups took it upon themselves to manage the changes, whereas adults in the 'family centred relational' practice group left this in what they judged as the capable hands of children.

#### *Recursive learning & successive modelling*

Q-findings confirm what previous research has concluded about the annual change of composition in multi-age groups facilitating successive modelling (Kinsey, 2001; Moller et al., 2008). From legitimate peripheral participation, (Lave & Wenger, 1991) children moved to more active engagement serving as models for new members of the group (Chapter 7.4.2). In the 'family-centred relational' practice, pedagogues reported that this happened either spontaneously or they encouraged peer support and peer modelling as they

harnessed the potential of age-diversity in their groups. In the 'adult-centred incidental' practice, on the other hand, this potential was forgone as pedagogues separated the ages, hence limiting the opportunities for successive modelling. For example, in the rehearsals for the end of year performances (Chapter 6.1.4), the songs and rhymes were selected by the pedagogues at a difficulty level that matched their expectations of the three biological age bands and taught exclusively to age-stratified micro groups. This overlooked the fact that by its design, multi-age groups enabled children to revisit skills and curriculum content annually (Kósáné Ormai, 2001) and to access activities at a level that is appropriate for their stage of development at the time (Körmöci, 2004a; Meadows, 2017).

As the discussion here suggests, for recursive learning and successive modelling to work in multi-age groups, pedagogues need to provide the right conditions for children: enable (and value) them in their peer supporting role and utilise age diversity by capitalising on the rhythm and cyclical nature of the teaching and learning processes in multi-age groups.

#### 9.3.4 The fluidity and rigidity of time – Kairos vs Chronos

Whether understood quantitatively as chronological (Chronos) or qualitatively as the opportune time to do something (Kairos), 'the hidden curriculum of obedience to clock time' (Lipari, 2014:142) influences practice. Interactions in the 'confused and homogenising' practice that called out time ("*it's tidy up time*") reflected the adult's conception of time (Chapter 6.4.1). For children, time is more fluid, and what significance it holds for them often remains hidden from adults. The 'now moments' of time, or 'micro-time', as a temporal experience without space and quantification, is where adults enter children's worlds and how they respond to children's inner cues shapes children's understanding of the concept of time (Bergson, 1913; Cuffaro, 1995). With calling out time adults exercise downward pressure and a means of control on children. In contrast, pedagogues in the 'family-centred relational' practice group (Chapter 8.1), were observed to respect children's immersion in their activities and provided them with unhurried time (continuous snack, child-initiated story and rhyme telling over an extended period outlined in Chapter 6.3.2, 6.4.1). In the passing of time, as adults and children interacted, the main concern was to 'pry open Chronos to create a present long enough to accommodate Kairos' (Stern, 2004:27), and

with that, showed appreciation for the fluidity in children's understanding of time. In these invisible interactions between children and adults, indications of power hierarchies and power dynamics could be observed (Canning, 2019; Cuffaro, 1995), which will be discussed in the next section with a focus on routines and schedules.

#### *Routines and schedules*

It is suggested that it is via routines and schedules when time is viewed as a commodity to be spent effectively and efficiently, rather than an inner-experience associated with freedom (Cuffaro, 1995; Drabinski, 2016; Lipari, 2014). How pedagogues used time gave an insight into the nature of their interactions with children, their sense of authority and control, consequently, where power was located. For example, the flexibility of sleep/rest times provided choice for children to take as long or as short as they felt they needed in the 'family-centred relational' and the 'adult-led intentional' practice (Chapter 8.1 & 8.2). In sharp contrast, in the 'adult-centred incidental' and 'confused and homogenising' practices, pedagogues asserted their authority by making children stay in bed until a set time whether it suited their rest needs or not (Chapter 6.4.1).

#### *Stretched time*

The fluidity and flexibility in routines affords synergies with Kairos, honouring children's genuine immersion in the flow of time (Csikszentmihalyi, 2008), which could be achieved by what might be called 'stretched time' (Cuffaro, 1995:42) or 'unattended time' (Lipari, 2014:144). Stretched time adjusts to how children immerse in their experiences, rarely conforming to clock-time, and in the study context, it required pedagogues to view time qualitatively through valuing the present moment fully. It was most frequently observed in 'teaching and learning child-initiated' interactions, an example of children's spontaneous ideas leading to valued diversions and experiences stretches as the below example demonstrates (Chapter 6.3.1):

*Ch175 (4yrs 7mths) comes along and says: "Well, I am going to take a seat here."*

*Ped16: "Come along and sit down here with us. We were about to start making paper boats, we just got distracted and started to talk."*

The adult's decision to expand children's time, and with that her own time with the children, reflected that she considered the experience meaningful



and significant, which echoed one of the key features of the 'family-centred relational' practice: keeping the curriculum relevant to the children and remaining open to children's interests and prior experiences that they built new understanding on. Genuine time here co-existed with the occurrence of the unpredictable and novel turn in the conversation and time was created that was the possession of the children (Cuffaro, 1995; Gale, 2005). Neither the children nor the adult was imprisoned by Chronos time, but they together could stretch the experience to accommodate their questions and to seek understanding of the experience of catching and cooking a catfish. The pedagogue responded to the continuum of children's experiences as her synchronous listening and speaking acted as 'dialogic midwifery that gave birth to' shared understanding (Lipari, 2014:207). It is suggested that there is a rhythm to this kind of temporal experience, no stops and starts but merging and fusing (Fong, 2006). Time was given as opposed to taken by the adult. By shifting the locus of power and giving control to children, the pedagogue created an opportunity that harnessed the potential multi-age conversations between novices and experts afforded in this stretched Kairos time.

As the examples in this sub-section demonstrate, the linear, quantified Chronos time was used by adults to assert control, which frequently (observed more than twice) left the potential inherent in multi-ager groups forgone (as in the 'adult-centred incidental' and 'confused and homogenising' practices). On the other hand, time was also understood as a non-linear, non-spatialised concept of Kairos time in the 'family-centred relational' and 'adult-led intentional' practices, where interactions between adults and children created 'new synchronies of nonconscious coordination' (Lipari, 2014:141) leading to pedagogues harnessing the potential in age-diverse groups. This required pedagogues to hand over control to children and to be able to interact with them at the right time, at a suitable or critical moment, while remaining sensitive to how children's own peer support unfolded.

I will return to Kairos time again in sub-section 9.4, where adults' 'visceral qualities' and pedagogic tact is discussed as contributors to the proximal processes of the bio-ecological model.

## 9.4 Personal characteristics

In the PPCT model, three types of personal characteristics were identified in Chapter 3.4.2, that directly shape proximal processes: resource, demand and force characteristics (Bronfenbrenner & Morris, 1998, 2006). In this sub-section specific characteristics in relation to these three categories are discussed with reference to their dynamic interplay with the other three elements (proximal process, time, context) and for their relevance to the research findings.

### 9.4.1 Resource characteristics

Resource characteristics, linked to the various levels of the ecological system, influence an individual's ability to engage with proximal processes effectively (Rosa & Tudge, 2013). Training and qualification are examined as a macro-level personal characteristic, and practice experience at an exo-level intrinsically linked to age as a micro-level bio-characteristic. As the resource characteristics are discussed, demographic information of the participating pedagogues summarised in Chapter 4.5 provide a backdrop for the analysis of findings, which are regularly cross referenced.

#### *Qualifications and Training*

As discussed in Chapter 2.3, all study participants received higher education degree-level training (or equivalent if they completed their training pre-1993), which is comparable to other Central-Eastern European countries (Campbell-Barr, 2016). The problem, however, is the underrepresentation (or indeed absence) of multi-age instruction in pre-service training as reported both in Europe and in other parts of the world (Hyry-Beihammer & Hascher, 2015; Ramrathan & Ngubane, 2013; Taole, 2017; Tharu, 2007). As the Q-findings suggest, lack of training specifically for multi-age instruction was reported as a salient feature of the shared view captured in Factor Four, which may have resulted in lack of knowledge and confidence among some of the pedagogues (Chapter 7.6). Based on the findings and the fact that only two of the twenty-two pedagogues had accessed any training, it could be assumed that the pedagogues in Hungary developed their skills on the job, by doing, by trial and error and in dialogue with their colleagues (Hyry-Beihammer & Hascher, 2015). The need for pre-service training specifically designed for age-diverse groups (Ansari & Pianta, 2019b) and ongoing professional development is highlighted (Ansari & Purtell, 2018; Broome, 2016; Duncan & Magnuson, 2013). In Hungary, the

unlearning of strongly held views about how one works with age-heterogeneity in order to succeed may also be necessary (Körmöci, 2004b).

#### *Experience and Age*

Practice experience (and with that 'age') is another personal characteristic that influences proximal processes. Pedagogues' total years of practice experience and their experience in multi-age groups are summarised in Chapter (4.5.1-4.5.4) in each kindergarten. Although firm conclusions cannot be drawn, there may be a tentative link between experience and the ability to harness the potential of age-diverse groups. The greater the experience, the greater the knowledge and understanding that enables pedagogues to interact with children in a way that utilises group age-diversity (Ansari & Pianta, 2019b; Purtell & Ansari, 2018; Taole, 2017). Examples from this current study that seem to support this claim are the three pedagogues in the 'family centred relational' practice group (Chapter 8.1), who consistently harnessed multi-agedness. They were in all the 46-55years age bracket, had minimum of 30 years of practice experience and minimum of 10 years in multi-age groups. On the other hand, the pedagogue cohort in the 'confused and homogenising' practice group (Chapter 8.4), where the potential inherent in age-diversity was consistently forgone, was the youngest with only one pedagogue over 45yrs, and two of the seven pedagogues had the least experience in multi-age groups across the twenty-two study participants observed.

However, when looking at both multi-age and the total of practice experience, there are also examples of the potential forgone in three very experienced pedagogues' practice (P7, 15, 23; Chapter 4.5.2, 4.5.3, 4.5.4), which confirms that a 'cause and effect' conclusion is not appropriate to draw here. What is noticeable, however, is that four of the six pedagogues who consistently utilised age diversity in their teaching received training prior to the introduction of the degree qualification in 1993 and at the time when available practice guidance was age stratified. This contradiction between training and enacted practice raises questions: Is experience a greater indicator of pedagogues' ability to work with a multi-age philosophy than the training received? How does the current pre-service degree level training compare to the training pre-1993? Could the content and quality of training account for this discrepancy? Answering these questions is beyond

the scope of this study but further examination of the issue could be worthwhile.

#### 9.4.2 Demand characteristics

Demand characteristics illuminate 'how a person acts as a stimulus' on his environment and others (DiSanti & Erickson, 2021). In both the Q- and observational findings, characteristics such as (in)sensitivity, loving relationships, intimacy, control and maintaining order were noted that either invited or discouraged reaction in the adult-child dyads (Bronfenbrenner & Morris, 2006; Rosa & Tudge, 2013). These are discussed next.

#### *Loving, respectful relationships versus insensitivities:*

The 'family model' viewpoint (Chapter 7.3) and the observational findings (Chapter 6.4), pointed to the existence of loving and sensitive relationships particularly in the 'family-centred relational' and in the 'adult-led intentional' practices (Chapter 8.1 & 8.2). Indeed, cuddling and kissing children were observed (for example Chapter 6.2.1), where pedagogues demonstrated signs of genuine care for the child (Vekerdy, 2013). Perhaps what Ruddick (2009:305) calls 'maternal thinking' and a 'care-full' (Luff & Kanyal, 2015:1748) pedagogy were also at play. It has been suggested that the role of a kindergarten pedagogue requires some personal, innate characteristics, a disposition to want to work with young children, which could be understood in the context of linking care with mothering (Campbell-Barr, 2017; Hedlin et al., 2019; McGillivray, 2008; Osgood, 2010). Q-findings concur with this notion as some of the pedagogues commented on the joy of positive physical contact with children (P18, P19) that stirred up mother instincts (P6) (Chapter 7.3.1).

Unconditional love and loving environments are recognised as characteristics of Hungarian ECEC provision (Kovácsné Bakosi, 2013). Personal characteristics that influence micro-processes, such as the act of giving a cuddle or kissing a child (Chapter 6.2.1) are rooted in cultural, social and personal beliefs (Bronfenbrenner & Morris, 1998; Ceci, 2006). Although a simplified way of understanding love in Hungarian ECEC has been suggested (Campbell-Barr et al., 2015), the word love [szeretet] and its derivatives appear eight times in the twelve-page current Core programme for Kindergarten Education (Ministry of Human Resources, 2019) in the context of 'love and respect for the child', 'loving care', 'loving nurturance', 'loving

atmosphere', which cannot be overlooked. Q-findings that suggested that parents chose the pedagogue rather than the group organisation (Chapter 7.5.1, 7.6.1) and the observed displays of affection (Chapter 6.2.1) may go some way to underscore the suggestion that a pedagogue's love [szeretet] for a child is culturally accepted in institutional care in Hungary (Brayfield & Korintus, 2011; McGillivray, 2008).

In an English context, for example, what Page (2017, 2018) calls 'professional love', as affectionate caregiving, is accepted and expected in non-familial pedagogic relationships. Echoing a family-like atmosphere captured by the Q-findings (Chapter 7.3), is the Pestalozzian principle of teaching through love in a classroom of multi-aged children he considered his family (Nutbrown & Clough, 2014;). In Hungary, love [szeretet] is talked about freely in an early education and care context (Campbell-Barr et al., 2015), and the key tenet of the 'family model' viewpoint was that multi-age groups operated like a family (Chapter 7.3). This, however, held the assumption that 'loving' was associated with the 'family atmosphere' and warrants future empirical research.

As much as the loving and respectful personal characteristics had the potential to contribute to positive proximal processes in two of the practice groups (family-centred relational and adult-led intentional -Chapter 8.1 & 8.2), observational findings highlighted insensitivities in adult's interactions in the 'confused and homogenising' practice (Chapter 8.4), which could have potentially led to inverse proximal processes (Merçon-Vargas et al., 2020). For example, children being asked to lay head-to-toe for their afternoon nap (Chapter 6.5.1), or openly expressing negative views of children's play (Chapter 6.2.3) did not invite but discouraged reciprocity from children. Although it is contested what level of reciprocity is essential for positive proximal processes, there is agreement on proximal processes not being unidirectional (Bronfenbrenner & Morris, 1998).

#### 9.4.3 Force characteristics

Force characteristics illustrate how the resource and demand characteristics actively play out (DiSanti & Erickson, 2021). In relation to this study's findings, it is understood how age, experience, qualifications and loving,

sensitive or insensitive dispositions manifest in physical touch, pedagogically tactful or controlling action.

#### *Touch and embodied interpersonal care*

Touch as 'adult-initiated haptic behaviour' is 'intrinsically interactional and dialogic' (Bergnehr & Cekaite, 2018:313). Responsiveness and sensitivities in interpersonal care interactions are personal characteristics that shape the preeminent proximal processes of caregiving (Cassells & Evans, 2020). As the Q-findings demonstrated pedagogues reported that it gave them job satisfaction to be able to nurture children through interpersonal care (Chapter 7.3.1) (Nyitrai et al., 2009). Observational findings also provided evidence for pedagogues' close physical interactions, such as waking children from sleep by stroking, washing children's feet after outdoor play, combing children's hair or reciprocating a child-initiated affectionate hug and kiss (Chapter 6.4, 6.2.1). In these examples, physical touch helped create close relationships between children and pedagogues (Bowlby, 1969) nurturing children's psycho-social well-being (Underdown et al., 2010).

Observational findings demonstrated that pedagogues used physical touch in their interactions with children in all four practice types, which suggests that they are not closely associated with group age-diversity. Although the debate is widespread on what is too much or too little in terms of touch in ECEC institutions (Hedlin et al., 2019), this aspect of embodied care is intrinsically tied to pedagogic, social, socio-emotional and cultural values of the people and places in which they take place (Cekaite, 2015; Goodwin, 2017). Dahlberg and Moss (2005) assert that even when there is practice and curriculum guide available, pedagogues act in accordance with their own norms and beliefs and the variation in practice could be vast.

#### *Intuition, attunement, pedagogic tact versus order and control*

The visceral qualities of intuition and attunement are essential to reading the situation and making decisions in the moment (Vagle, 2011; van Manen, 2015). Observational findings account for situations in the 'adult-led intentional' practice type, where the pedagogue held back and allowed children to sort out disputes themselves, which I described in the 'observe and reserve' section in Chapter 6.5.1. Knowing not to step in resulted from the adult's attunement to the children's needs and desires. She understood what she saw, sensed the significance of children protecting their play space

and this attunement triggered action that was pedagogically thoughtful in that moment (van Manen, 1992). Similarly, attunement, fuelled by in-depth knowledge of the child and his family's culture, guided the pedagogue in the 'family-centred relational' practice (Chapter 8.1) to notice a child's attempt to fold a paper hat like his grandad was known to (Chapter 6.2.2), a child's attempt to dance when rhythmically bending knees on the stepping stones (Chapter 6.3.3), and letting the focus of communicative exchanges take a detour from paper boats to African catfish (Chapter 6.3.1).

Sipman et al. (2019:1186) claim that pedagogic tact is an enactment of intuition and define it as a 'teacher's ability to instantly and adequately act upon the complexity of classroom situations... that require immediate action'. Described in Chapter 6.3.3, pedagogues' strong intuitive sense informed action that emerged in the moment and, in one instance, prevented chaos and injury to descend on the stepping stone activity, and in another, gave impetus for a 'doctors' role-play (Vagle, 2011). The personal quality of pedagogic tact enabled these pedagogues to make an on-the-spot decision without conscious reasoning (Sipman et al., 2019).

Touch was discussed in a physical sense above as a force characteristic, but, it could also be understood as 'touching in' or exerting influence on another (van Manen, 1992) in a non-physical sense. These above discussed examples of pedagogically tactful interactions or non-physical touching-in, show synergies with some of the categories of physical touch discussed and exemplified in the 'touch, embodied care' section above. Assisting touching-in was demonstrated in the paper hat scenario; initiating a change of direction in a conversation (African catfish scenario) could be understood as educative touching-in; and a controlling 'touching-in' could be seen as the pedagogue invited children to step out the rhythm she played on her recorder. Pedagogic tact could, therefore, be understood not only as an act of intuition but also a non-physical touching-in. Although not limited to multi-age contexts, this practice characteristic warrants further exploration.

While attunement is recognised as key in relational responsive pedagogy (Blades & Bester, 2013), the study participants differed in how they were able to tune into and use intuition in their interactions with children in the

four practice groups. Without these visceral and intrinsic qualities, pedagogues in the 'confused and homogenising' practice (Chapter 8.4) turned to extrinsic means such as control and order in their interactions with children. Prioritising orderly behaviour, neatness in the environment and in children's appearances (Chapter 6.5.2) underscored pedagogues' desire to overcome the messiness, complexities and challenges, as they saw it, multi-age groups imposed. Without the skills to harness the potential inherent in multi-age groups, pedagogues adopted a more authoritarian style in some of their interactions (Villányi, 1994). The reactive nature of pedagogues interactions with children prohibited the improvisational characteristic necessary for pedagogic tact to be employed in the immediacy of the Kairotic moment (Cocker, 2015; van Manen, 2015).

To conclude this section, it has been suggested that practitioners with specific personal characteristics may be better prepared and equipped to work with multi-age groups (Ansari & Pianta, 2019b; Manship et al., 2016). Those who get to know children more intimately through family-like relationships, are sensitive and more attuned to children's individual learning characteristics and personalities could be better suited to support children in age diverse groups (Hoffman, 2003; Körmöci, 2004a; Kovács & Bakosi, 2004; Ramrathan & Ngubane, 2013). As the study findings demonstrated, generative personal characteristics, such as sensitivity, love, affectionate touch, intuition and pedagogic tact, are conducive to and sustain positive, proximal processes (Bronfenbrenner & Morris, 1998, 2006). Whereas those that are disruptive characteristics (i.e.: insensitivities, lack of attunement, power), can impede adult-child interactions and lead to inverse proximal processes (Bronfenbrenner & Evans, 2000; Merçon-Vargas et al., 2020).

### 9.5 Interactions as contributors to proximal processes

Adult-child interactions are salient features of early childhood practice (Siraj-Blatchford et al., 2002) and in this study, they provided the mutual influences, inter-relations and the bi-directional exchanges between the adult and the child, which altogether constituted the practices children were exposed to (Bronfenbrenner, 1994; Bronfenbrenner & Morris, 2006). At the beginning of this sub-section, it is important to establish that interactions



differ from proximal processes. Proximal processes are considered the engines of development (Bronfenbrenner & Morris, 1998), whereas interactions, here in the adult-child dyads, are essential contributors to proximal processes, which are much more broadly understood. For interactions to be considered as proximal processes, the following properties are identified as essential: (a) with people and/or the environment (b) with regularity, (c) over an extended period of time, (d) long enough for the interactions to become progressively more complex, (e) bi-directional with energy exchanges in both directions (Merçon-Vargas et al., 2020; Tudge et al., 2016). In this project, the limited time available for field work did not enable me to generate sufficient observational evidence for all of these criteria, therefore, the findings presented in this section need to be considered in light of this limitation.

As outlined in Chapter 3.3, there is a dynamically interactive relationship between the PPCT model's four defining components. The proximal processes, are heavily influenced by the immediate environmental contexts (discussed in 9.2 above) and the regularity and longevity of time (Chapter 9.3) and by the biopsychological characteristics of the person (Chapter 9.4) (Bronfenbrenner, 1995a). The way children and adults experience these proximal processes are likely to be affected by the characteristics identified for the four different practices.

The discussion in this sub-section, therefore, is structured in relation to the four classes of practice (summarised Chapter 8), each with their distinguishing characteristics highlighted with reference to observed adult-child interactions and the characteristics that pedagogues reported. Combining these two sets of characteristics enabled me to identify then to name the styles of interactions that corresponded with the salient practice features in each of the four classes. These are inter-subjective-action, trans-action, intra-personal-action and inter-reaction, and they are visually represented in Figure 19 below. Together with the characteristics relating to the other three components of the PPCT model, the figure offers a taxonomy of multi-age practice in the Hungarian study context. In each segment, the four co-centric gradually shaded circles represent four components of the PPCT model, starting with the defining characteristic of the adult-child

interactions in the outer circle, through to how 'time' is used in the inner circle with the pedagogues' 'personal characteristics', and key features of the multi-age 'context' in between. The figure foregrounds my theorising in section 9.6 and is used as the frame and tracking for this sub-section to ensure the clarity and coherence of my discussion. The title of each sub-section serves as a reminder for the practice group and, correspondingly, the distinguishing style of interaction in each.

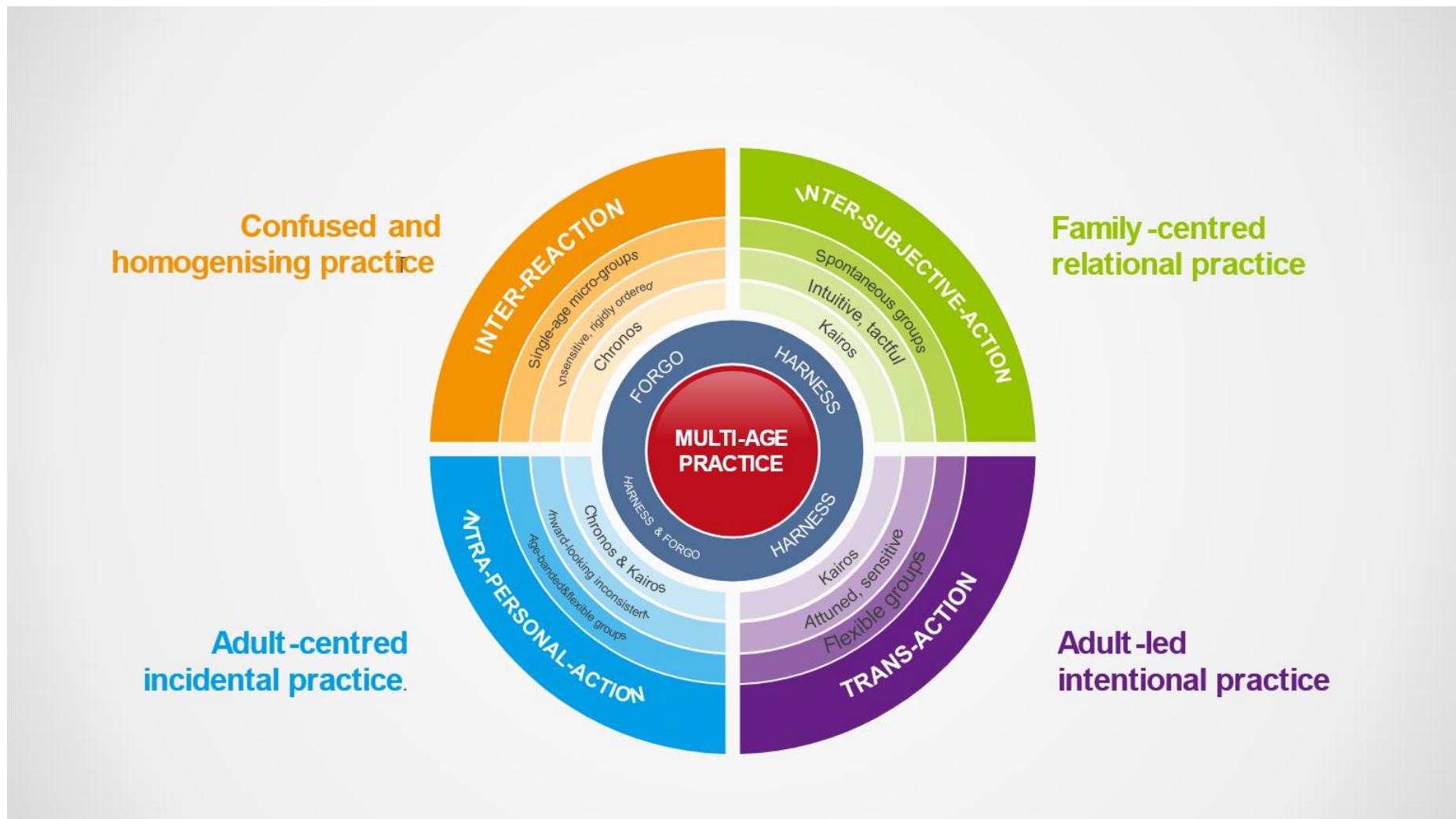


Figure 19. The taxonomy of multi-age practice in the Hungarian study context

### 9.5.1 Inter-subjective-action in 'Family-centred relational' practice

As both the observational and Q-findings suggest, in the 'family-centred relational' practice (Chapter 8.1) pedagogues drew on their in-depth knowledge of the children's personal, family and community backgrounds and their prior experiences, which enabled them to interact in socially and culturally supportive ways (Edwards, 2005; van Oers et al., 2010). The paper hat folding activity (Chapter 6.2.2) and the rhythmically bending knees on the steppingstone incident (Chapter 6.3.3) provided examples for this. Being attuned to children enabled pedagogues to see them interacting with their environment via their cultural tools, consequently, to be recognised as agents of their culture (Fleer, 2006, 2010). Pedagogues' interactions reflected the understanding that children learnt in real-life contexts, where places and situations were not deliberately created for learning, through observing their siblings, parents and other people in their community. Children's activities were, therefore, anchored in cultural and societal values (Fleer, 2003; Hedegaard, 2009). Findings point to children's 'home' ways being strengthened by the adults adapting the activities to the cultural variations these children brought into the settings (Fleer, 2010; Fleer & Hedegaard, 2010).

Similarly, in the "How do I eat this compote?" spontaneously occurring lunchtime scenario (Chapter 6.3.1) support was tailored to children's unique levels of understanding and interests. The pedagogue's interaction drew on children's varied socio-cultural and familial capital (Rogoff, 2003). This was echoed in the Q-findings in the viewpoint shared by these pedagogues, which did not only emphasise the need to understand the uniqueness of each child and his family but also that multi-age groups operated like a family (Chapter 7.3.1). This relaxed conversation over lunch offered a staging for children to act as they would with older or younger siblings or members of their communities (Bandura, 1977).

In their interactions, pedagogues in the 'family-centred relational' practice (Chapter 8.1) facilitated joint problem solving and remained sensitive to the direction children were taking their play in. This was demonstrated in the paper boat folding play scenario, where the various sheets of paper behaved differently, and children were encouraged to find solutions to keep the folded paper in place in order to make their boats (Chapter 6.2.2). As the

lake for the boats to float was created outside (Chapter 6.2.4), hands-on cross-age learning was facilitated at individual skill levels allowing children to have a sense of self-efficacy and enabling them to learn about and value their own and each other's contributions (Broome, 2009; Hoffman, 2002). Through the pedagogue's facilitative approach, multi-age collaboration and experimentation could take place (Smit & Engeli, 2015) with encouragement explicitly expressed,

*P16: "Why don't you discuss how it should be done? You always have great ideas, you are good at finding solutions. Help each other."*

and with carefully considered timing (Chapter 6.2.4), that recognised critical micro-moments (Fleer, 2010) as well as stretched time (Cuffaro, 1995) in children's play. The explicit identification of the reasons for joint problem solving and well-timed interactions between the adult and the children utilised guided peer tutoring as a teaching strategy, which has been found more powerful and beneficial for both tutor and tutee than voluntary inter-age peer tutoring (Hyry-Beihammer & Hascher, 2015; Roberts & Eady, 2012).

Bandura's (1977) social learning theory highlights children's development through observing models in community activities, which had synergies with housekeeping interactions that enabled and also encouraged two children (4yrs 7mths, 6yrs 8mths) in the cloakroom to sweep up the sand brought indoors from the large sandpit outside (Chapter 6.1.1). The children worked together, the younger child holding the dustpan, the older one sweeping up the sand. This concurs with peer effects literature in that these multi-age groups provided an environment for children where peer support and modelling was utilised by the adult (Justice et al., 2014). In this instance, the model was provided by the older child and through observational learning the novice copied the expert, and consequently learnt the foundations for more sophisticated competencies (Meadows, 2017). Aligned with this was the highly ranked reported characteristic that highlighted utilising peer modelling in pedagogues' multi-age practice (Chapter 7.3.1). What we saw here in these above examples were cross-age inter-subjective exchanges. In these nurturing multi-age environments, utilising peer support in learner-centred activities enabled the pedagogue to harness the potential inherent in age-diverse groups (Doherty, 2012; Justice et al., 2019).

As the observational findings suggested, intuition, a kind of emphatic sensibility and wisdom (van Manen, 2015) as well as pedagogues' acute awareness of the social order between children (Huf & Raggl, 2015), afforded pedagogically tactful interactions to take place (Sipman et al., 2019). One example of this was illustrated by one pedagogue's perfectly timed intervention that intercepted an older child asserting unsolicited help on a younger peer (Chapter 6.4.2). Another was at a later stage of the 'walking on stepping stones' activity discussed earlier, as it started to turn into more chaotic and presented a risk to less confident children getting hurt. The adult calmed the situation tactfully and seamlessly by taking her recorder out, playing a rhythm and asking children to copy it (Chapter 6.3.3). In both of these instances, the pedagogues sensed the significance of the incident that called for exercising inter-subjective sensitivity, read the situation and acted swiftly and considerately. The pedagogues' immediate, improvised but intuitively informed tactful action diffused the situation that otherwise could have disrupted the flow of children's play (Valle, 2017; van Manen, 1992, 2015). There seemed to be a visceral quality to the adults' interactions here (as discussed in more detail in section 9.4.3).

To summarise, the 'family-centred relational' practice followed a personalised approach, support was individually tailored according to children's unique needs and interests and adult interactions consistently utilised group age-diversity. Adult-child interactions demonstrated that, regardless of their biological age, all children's contributions were valued, learning through joint problem solving, negotiation and collaboration was encouraged, while children were also provided with opportunities and responsibilities to lead their own play in multi-age contexts. The relational and attuned nature of the interactions between adults and children, underpinned by inter-subjective sensitivities, led me to recognise the kind of interaction that I named ***inter-subjective-action***.

#### 9.5.2 trans-action in 'Adult-led intentional' practice

In 'adult-led intentional' practice (Chapter 8.2), observational findings suggested that group age-diversity was consistently utilised, and pedagogues assumed greater responsibility and control over teaching and leading children's learning than pedagogues in the 'family-centred relational' practice. This concurs with the claim that effective multi-age instruction

requires less personalisation, more adult direction and adjusted instruction (Smit et al., 2015). Similarly, Grieshaber (2015) calls for intentional active educator practices. Play situations, such as the conversation about the beetle found in the garden (Chapter 6.2.2), were utilised by the adult to teach children new information they could anchor to their lived experiences.

Differentiation required pedagogues to make appropriate decisions as to how they interacted with children based on their knowledge of individual children's strengths and needs, their knowledge of child development and learning. Sophisticated skills were also required to differentiate the curriculum at instructional, content and resource level to accommodate learner diversity (Hyry-Beihammer & Hascher, 2015; Mede, 2016; Taole, 2017). In this kind of practice, pedagogues consistently differentiated to developmental stage in their interactions with children, demonstrated by the role allocation for the 'Puss in Boots' story re-enactment for children between the ages of 4 years 4 months and 7 years 4 months (Chapter 6.2.1). As in the 'family-centred relational' practice, the adult encouraged peer support instead of stepping in to help herself, which also helped children develop tolerance and acceptance (Guo et al., 2014). The pedagogue remained attuned and engaged in inter-listening as part of the attentive audience (Lipari, 2014).

Huf and Raggl (2015) suggest that, although it is important to understand that age diversity does not necessarily equate to skill diversity, differences between children in multi-age groups do not only become more obvious but also more legitimate. Activities were both observed and reported to be set up for children of all abilities, where appropriately differentiated support enabled them to engage with the same activity at a level that suited their individual needs best. Examples of this were the puppet or the flag making activities (Chapter 6.2.1), where the diverse competencies through the representation of various chronological age bands together afforded less competent children to develop their skills through participating in the life of their learning community that included more competent peers (Dewey, 2011). These kinds of interactions from adults taught children adaptability and personal initiative. Aina, (2001) proposes that biological age-related stereotyping is rare in multi-age groups, the benefit of which was evident in the above craft activity examples: the pedagogue was not tempted to teach

to the average (Körmöci, 2019) but, in her interactions, she recognised the diverse nature of children's skills.

Practitioners used different support strategies that matched the varying and changing needs and evolving capabilities of children in their multi-age groups (Chapter 6.2.1), which is in contrast to the single-age organisation, where expectations for skills and capabilities are claimed to be standardized to a typical age, and ability homogeneity is expected (Bailey *et al.*, 2016; Berry & Little, 2006). Edwards *et al.* (2009) suggest that, in this way, age-heterogenous grouping can reduce practitioners' stress associated with working to goals identified for chronological ages. However, as the Q findings here through highly ranked statements suggest, teaching strategies such as organisation, planning and differentiation on a larger scale (35:+5) made pedagogues' work not only complex and multi-layered (37:+4; 32:+4; 35:+5) (Chapter 7.4.2) but also presented a greater workload (Berry, 2003; Proehl *et al.*, 2013). The post sort interviews confirmed that differentiation was one of the aspects of practice that pedagogues reported as the most challenging (if not stressful) and they identified lack of training as one of the reasons for this (Chapter 7.2.2, 7.4.2). Körmöci (2019) acknowledges the complexity of differentiation due to the wider range of ages and stages of development in multi-age groups as discussed in section 9.4.1.

Observational findings suggest that differentiation to individual's developmental stage was also a key feature of some of the multi-age practices observed, an example of which was the counting game during circle-time (Chapter 6.2.1). The pedagogue here looked at how the younger child's number skills had evolved rather than relying on age 'as the index of development' (Bandura, 1977, p. 30). Through successive modelling and recursive learning (Doherty, 2012), the child's potential level of development could have been enhanced by more capable peers, or 'more knowledgeable others' (Bekiryazıcı, 2015, p. 914; Vygotsky, 1978, p. 86), so that the child could make continuous progress at his own pace, culminating in managing the task ahead of expectations for his age.

Q-findings also reiterated pedagogues utilising age-diversity by reinforcing more mature role models for children (Ch 7.4.3), which was corroborated by



observational findings, as one of the pedagogue's interaction below demonstrated (Chapter 6.2.4):

*P22: "Well, what else do you want to draw? A car? Will you draw a car?"  
"Look, Child264 (6yrs 6) is showing you how to draw one." She narrates  
child 264's drawing: "First the two wheels, then the body, the windows..."  
Child 279 (4yrs1) is now drawing the wheels of the car.*

The pedagogue here understood that teaching was a process of socially constructing culturally valued knowledge, in which peers and adults played an equally significant role (Colliver, 2019).

Further observational findings suggest that conscious efforts were made to harness the potential inherent in multi-age groups in both preparatory (for example, serving food, setting the table for lunch) (Chapter 6.1.3) and care related interactions (for example, children helping each other get dressed after their sleep, helping with personal hygiene), both reflecting the interpersonal nature of peer support being valued (Cekaite & Bergnehr, 2018). Adults provided opportunities for children to move between receiving and giving peer support which aided collaboration (Ansari & Purtell, 2018; Katz et al., 1993). One example of this was when a child of 6yrs 3mths buttoned up a younger peer's (4yrs 4mths) cardigan and provided reassurance that she'd be able to do it herself soon (Chapter 6.4.3). Physical touch, the embodied act between these two children, and the intimacy of the support demonstrated the interpersonal nature of care, through which their cross-age social relations could be nurtured (Classen, 2012; Fulkerson, 2014).

Although there is warning from Hyry-Beihammer and Hascher (2015) that peer support activities should not place a burden on either the younger or the older learners of a multi-age community, in this instance, the child followed the pedagogue's example, the supportive interaction that could have been observed by the child in the cloakroom, possibly within the family context or indeed in her wider community (Keränen et al., 2021). The diversity of skills through the mix of ages here provided the adult with the opportunity to optimise the socio-emotional pedagogic potential of peer learning (Baines et al., 2007). It could also be suggested that the age-related asymmetry in this child-child dyad could have legitimise the younger child receiving help because she was not yet capable of doing something, and the older child giving support because she saw herself as more

competent in comparison to her younger peer (Laging, 2010). However, here, peer support was voluntary and facilitated in an emotionally and socially supportive multi-age environment. In fact, it could be argued that this care interaction between the two children promoted agency and self-efficacy (Broome et al., 2015), where unhurried time was provided and tolerance shown by both the children and the adults as children had a go at buckles, zips and buttons before the appropriate level of support was provided by either children or adults. By consciously planning for peer support, the adult created situations where children learnt co-operation, tolerance for one another and they learnt to read each other's intentions (Körmöci, 2004b; Kósáné Ormai, 2001).

The observational and Q findings suggested that in this 'adult-led intentional' practice there was greater emphasis on the intentionality of pedagogues teaching and extending child-initiated learning through their interactions. These pedagogues were comfortable with actively engaging with children's exploration in situations that provoked action from them, which, in return, triggered transformation in children's understanding and experiences as they participated in the exchanges with the pedagogues (Cuffaro, 1995). Correspondingly, I named these interactions ***trans-actions***.

### 9.5.3 Intra-personal-action in 'Adult-centred incidental' practice

Drawing on both sets of findings, the most striking feature of adult-child interactions in the 'adult-centred incidental' practice (Chapter 8.3) was the inconsistencies that pedagogues showed both in relation to the disparate way they reported on characteristics of their practice and how they worked with age-diversity (Chapter 6.2.1). The Q-findings corroborated the observational findings through the strength of the Q-method, which highlighted that, six of the nine pedagogues within this practice cluster statistically did not load onto any of the shared viewpoints captured by the four extracted factors.

Differentiation was again identified as challenging, and the focus shifted from individuals to groups of children. Pedagogues differentiated the curriculum, resources and their interactions with children according to their age-related expectations for 3-4 year-olds, 4-5 year-olds, and 5-6+ year-olds or to three stages on the developmental continuum between the most

and the least capable. Indeed, in some instances, both were observed within one pedagogue's practice (Pivókné Gajdár, 2012), which frequently (observed more than twice) led to reinforcing 'oldest' versus 'youngest' status (Huf & Raggl, 2015). Like during the P.E. session (Chapter 6.2.1), where the obstacle course was set out to accommodate all children at their various levels of development, but the session ended with a game exclusively with the 5-6+ years age-band, by which the pedagogue implicitly reinforced the status of the oldest children as most capable (Vajda & Kósa, 2005).

Inconsistencies in practice may be unsurprising when what the reviewed literature recommend is also inconsistent. Körmöci (2004b) asserts, for example, that it is possible to meet those children's needs who were leaving for school within everyday activities without the need to separate them from the rest of the group, whereas Kovács and Bakosi (2004) advocate for micro-group activities with the sole purpose of preparation for school. Against the flexible and spontaneous grouping principles that are recognised as features of multi-age groups and in the 'adult-led intentional' and the 'family-centred relational' practice group (Casserly et al., 2019), in this 'adult-centred incidental' practice, groups were frequently divided into their component micro-groups (3-4yrs; 4-5yrs; 5-6+yrs) for adult-led activities (such as physical exercise, end of year performances or outings detailed in Chapter 6.2.1) not only within one group but also across all of the multi-age groups in one kindergarten, making certain activities and events the privilege of, typically, the oldest children only. Using these more age-homogeneous micro-groups removed the opportunities for recursive learning, successive modelling and age-mixed collaboration, which are identified as a significant feature of multi-age education (Doherty, 2012; Pivókné Gajdár, 2012; Vygotsky, 1933, 1967). The deliberate mixing of the ages was also observed in a 'one older-one younger' pattern (Chapter 6.1.4), which, did not only reflect adults' assumptions of an idolised model of multi-age groups, and misguided interpretations of their workings (Song et al., 2009), but also represented age-segregation in itself.

Further inconsistencies are suggested by observational findings in preparatory interactions, where adults controlled children's access to certain tasks (such as lunchtime helpers) resources (music sheets) and play spaces

(mezzanine) based on their biological age. This went against the repeated call in extant literature for flexible learning environments, where spaces and resources were used in a way that could accommodate age-diverse play (Casserly et al., 2019; Taole, 2017) as well as play of same-age peers within multi-age groups (Körmöci 2004; 2019). Protecting older children's play spaces and resources from younger peers concurred with what *Ádám and Hegedűs (2019)* identified in their study as important for more complex and more mature play. However, practice and research findings like these only reiterated the assumption that the sole participation of older children with resources deemed suitable for that age group were guarantees for more complex and mature play. Moreover, this kind of separation of the ages reflected another assumption: that older children were not likely to learn from younger peers when playing together and their play would be hindered rather than enhanced by their younger peers. This notion goes against the opportunities multi-age groups can offer to harness the potential inherent in age-diversity.

Beyond protecting children's play spaces, there was also evidence of lack of sensitivity from the adult to be able to protect a younger child from an older peer's unsolicited help (Chapter 6.4.2). This was in direct contrast to the sensitivities pedagogues displayed to protect children in the 'family-centred relational' in a similar situation (9.4.1). Here, the older child attempted to present herself with the authority of an adult, which brought status hierarchies into the two children's relationship and, therefore, interactions. While the adult tactfully intercepted the unsolicited help in the 'family-centred relational' practice, in the 'adult-centred incidental' practice, it was completely overlooked and led to the distress of the younger child. The danger of this assertion of power through unsolicited help was that the two children's differences in age could have legitimised their asymmetric roles. Here, the older child occupied a superior position in the hierarchy of status, which was not based on shared interest but on dominance and the desire to exercise control (Corsaro, 2018; Huf & Raggl, 2015).

As the discussion so far suggests, in some situations, it seemed, pedagogues had the skills and confidence to harness the potential inherent in multi-age groups, in others, they doubted their abilities, therefore, the potential was forgone. Either way, children's experiences were influenced by

the pedagogues' skills in multi-age pedagogy and how comfortable they were with particular aspects of their multi-age practice (Manship et al., 2016; Purtell & Ansari, 2018). These inconsistencies could have appeared for two reasons: (i) due to pedagogues continuing to practice as they and their predecessors had always done before them (Deliné Fráter et al., 1993) (ii) or due to how equipped they felt to deal with group age-diversity (Manship et al., 2016). The former could have been informed by the prevailing influence of the two age-stratified curriculum documents (Országos Pedagógia Intézet, 1971, 1989) that preceded the current Core programme for Kindergarten Education (Ministry of Human Resources, 2019). The latter was explained by pedagogues lack of confidence and skills in dealing with multi-age teaching and learning situations as articulated in their post-sort interviews (P3's post sort interview in Chapter 7.4.1).

Typically, the kind of interactions observed between children and adults in Cluster Three were informed by the adults' inward-looking view of their levels of confidence and capabilities, which also influenced to what extent the potential in group age-diversity was harnessed or forgone.

Corresponding to this 'adult-centred incidental' practice were the kind of interactions that I called ***intra-personal-actions***.

#### 9.5.4 Inter-reaction in 'Confused & homogenising' practice

In this fourth 'confused and homogenising' practice group (Chapter 8.4), observational findings point to adults consistently forgoing the potential group multi-agedness could offer. In fact, data findings evidenced attempts to homogenise multi-age groups, which manifested in both splitting the larger multi-age groups into its smaller age-banded micro-groups and/or treating entire kindergarten groups as if they were age-homogeneous. Unlike in the adult-centred incidental practice (Chapter 8.3) where differentiation was inconsistently to both stage of development and age, here, pedagogues consistently differentiated according to biological age. An example of the use of age-stratified micro-groups was the music activity, which was set up in a space within the room demarcated by a row of chairs allowing access exclusively to the oldest of children (Chapter 6.2.5). This went directly against the principle of multi-age groups' collaborative environments, a 'hallmark' of multi-age classrooms, (Hoffman, 2002:52), where free movement and choice was denied and children could not make

their own decisions on how they used available space (Stone, 1998, 2004). Considering that some of the pedagogues in this practice worked in a kindergarten that followed the Montessori approach, it was unexpected to observe practice that disregarded liberty and independence, two of its guiding principles, which could have been achieved by the careful coordination between the child, the favourable environment and the teacher (Montessori, 1976). Although Kovács and Bakosi (2004) recommend separate micro-group activities for older children, others maintain that by dividing multi-age groups into its smaller age-banded component groups, pedagogues take away the opportunities for peer support and cross-age collaboration (Cozza, 2017; Smit & Engeli, 2015).

These findings were also corroborated by the Q results which confirmed that differentiation, planning and organisation were reported as a greater challenge in multi-age groups. To manage these complexities, pedagogues admitted to resorting to break the multi-age group up into its smaller age homogeneous micro-groups (Chapter 7.6.1). One of the worrying consequences of age-stratification in multi-age groups was, as the observational findings evidenced, the age related expectations of children, which may have been fuelled by the long lasting influence of the three distinct age bands (3-4 yrs; 4-5yrs; 5-7yrs) and their typical normative developmental characteristics in previous early childhood curricula (Országos Pedagógia Intézet, 1971, 1989). As a consequence, it was assumed that the older the children, the more advanced their development was (Deliné Fráter et al., 1993). Simplifying the complexities and nuances of teaching age-diverse groups by considering biological age as a single criterium to determine the level of support an adult offers a child resulted in this 'confused and homogenising' practice group in seeing the child in deficit terms (Wood, 2010). The pedagogue's interaction reflected the expectation of reaching developmental milestones in relation to biological age in a linear and hierarchical manner.

Observational findings also provided evidence for pedagogues adopting a 'same for all' approach in their interactions with children, expecting the same from everyone with a complete lack of differentiation. One example, among others, was the craft activity already mentioned in section 10.4.3 above for expecting all children to work at the same pace. The pedagogue

also expected children to produce uniform results. The adult's interactions with children were instructional (didactic) with no attempt to harness what the multi-age group ecology offered. This could be explained by the heavier workload that, as Mariano and Kirby (2009) claim, drains practitioners' energies to pursue teaching strategies that specifically utilise age-heterogeneity. The tendency to homogenise, demonstrated by the excerpt below, resulted in an authoritarian style of interactions that did not only aim at uniformity but also to maintain order.

*P17: "We are going to make the boats using these shapes (pre-cut white shapes for the body and sails of the boat). Child 166 (5yrs 9mths) pay attention. "*

*P17 is showing the children how they need to put together the shapes to make the boat.*

*P17: "I have put this small dish here so that you can put the shapes you do not want into it because I do not like this mess on the table. "*

It has been pointed out many times in this chapter and throughout the thesis, that individuals' practice does not exist in a vacuum. Approaches to childhood and educational practice are shaped by the dominant discourses and political, cultural, social and economic values of the time (Dahlberg & Moss, 2005; Urban, 2015). Like mine, the lives of this cohort of pedagogues were likely to have been profoundly influenced (directly through personal experience or indirectly through parenting) by socialist ideologies. Uniformity, authority and a more didactic approach in the above examples stand out as defining features of education during socialism (Józsa et al., 2018; Millei et al., 2019). Although the link may be tentative but what we see in the 'confused and homogenising' practice could be attributed to the prevailing influence of the 'unfinished business of socialism' (Jelača & Lugarić, 2018:1). As Silova (2018) contends, children of that era remain bound to their particular national landscape and treat narratives of change and progress with ambiguity. Conformity together with the idea of the collective upbringing of children (Penn, 2014; Silova, 2018) may have translated to the collective task of this craft activity. As the record of the activity in Chapter 6.2.5 demonstrated, uniformity was a priority requirement not only for the pace at which children worked but also how and what children produced. It seemed that the pedagogue set a group goal, which meant no child could be individualistic and equally, no child could fail.

The group was more important than the individuals in it (Bronfenbrenner, 1971; Millei, 2011).

Q-findings illustrated that pedagogues in this practice group believed that *"working in mixed-age groups [was] really hard"* (Chapter 7.6.1), and they explained it with the lack of training, which resulted in lack of confidence and skills in working with the mix of ages within the same group. In the face of feeling unprepared, it appeared that maintaining 'order' (as understood by the adults) became a priority in pedagogues' interactions, which frequently brought with it insensitivities to children's needs. Although order in the environment can be conducive to independence and self-direction (Montessori, 1997), observational findings underlined that order was enforced by adults' expectations rather than their facilitative approach to independence, and, in some instances, the need for order overrode inter-subjective sensitivities to children. In a multi-age group, where rules, boundaries, acceptable codes of conduct and ways of working were modelled, models from adults influenced the models provided by peers (Fu et al., 1999; Katz, 1995), as reported by one of the pedagogues:

*"Primarily we, pedagogues, are the models, the older children follow our examples and through this they become models for the younger children in the group. They pass our models on."*

Blanket rules and prioritising order bred further insensitivities to rest, dressing and feeding needs in pedagogues' interpersonal care related interactions, such as children laying head to toe or finishing sleep/rest at the same time. This rigid and quantitative use of time (sub-section 9.3.4) ordered pedagogues' professional behaviour, suggested a sense of authority and control, and that power was firmly located with the pedagogue (Cuffaro, 1995; Drabinski, 2016). Interference (Fisher, 2016) and **hovering**, a term used for the act of adults moving around play areas seemingly without any purpose other than to check on children, further demonstrated insensitivities and the 'same for all' approach (Chapter 6.4.1).

Both Q- and observational findings support the claim that, in this 'confused and homogenising' practice, the potential inherent in age-diverse groups was forgone in pedagogues' interactions with children. In fact, multi-agedness appeared to disrupt the prevailing influence of previously accepted and still prevailing age stratified ECEC practice guidance, putting



pedagogues on their back foot as they practiced in multi-age environments. This renders adults' interactions pedagogically less prepared for age diversity and reactive in nature. For these reasons, I called this type of interactions as ***inter-reactions***.

To conclude, Bronfenbrenner (1995) stresses that proximal processes cannot operate without stability, consistency and predictability. Due to the synergetically interdependent nature of the four defining components of the PPCT model, proximal processes can be both generative and disruptive. While inter-subjective-actions and trans-actions have the potential to contribute to generative proximal processes with positive effects, there is a risk to be acknowledged with the regular occurrence of intra-personal-actions and inter-reactions: should these become enduring forms of interactions within the adult-child dyads over an extended period, they could lead to inverse proximal processes with negative effects (Bronfenbrenner & Evans, 2000; Merçon-Vargas et al., 2020; Tudge et al., 2016).

#### 9.6 The taxonomy of multi-age practice

Ecological thinking has been utilised in the discussion of the study findings to conceptually account for the interplay between multiple constructs in order to gain a more holistic insight into the enacted and reported characteristics of multi-age practice in the Hungarian context. The conceptual crossovers have served to underscore the nuances, intricacies, and complexities of practice in multi-age environments. The subsequent section offers a summary description, with reference to the visual representation of the four classes of practice in Figure 19 (section 9.5) that were drawn from the combined study findings.

This study combined factor analysis with the clustering method, which being conducive to constructing taxonomies (Borgès Da Silva, 2013; Smith, 2002), enabled me to develop a taxonomy of multi-age practice empirically, as a bottom-up, or from the data-up, classification of multi-age practice. Establishing the four classes of practice based on their interdependent characteristics informed the development of Figure 19 (section 9.5).

In each of the four classifications, the characteristics and have been established as they interacted, one set of findings corroborating the other.

The multi-variate analysis examined the findings in relation to four defining components: (i) the personal characteristics of the pedagogues, (ii) their interactions in the adult-child dyads, (iii) the immediate multi-age contexts in which these interactions took place and (iv) how they used 'time' in their practice. The analysis generated four polythetic 'classes', which were made up of individual pedagogues' practice that shared common characteristics but also had minor differences (Borgès Da Silva, 2013; Raven et al., 1971). This produced four relatively homogenous groups ('classes') based on strong internal consistency between what was identified as features of enacted and reported multi-age practice.

The results confirmed variation in practice, which demonstrated that multi-age practice went beyond the logistics of simply mixing the ages. As Figure 19 summarises at the beginning of section 9.5, the combined observational and Q-findings suggest four different classifications of practice, the characteristics of which are highlighted in relation to multi-agedness in the summaries in Table 31 below.

FAMILY-CENTRED RELATIONAL PRACTICE	ADULT-LED INTENTIONAL PRACTICE	ADULT-CENTRED INCIDENTAL PRACTICE	CONFUSED & HOMOGENISING PRACTICE
<p>Pedagogues have extensive practice experience together with substantial experience with multi-age groups, and they show a preference for age-diverse groups.</p> <p>Time is viewed qualitatively as Kairos time and children's immersion in the flow of time is respected.</p> <p>Pedagogues believe that their practice follows a family model.</p> <p>Personalisation is key in adult-child interactions with focus on learning driving development and pedagogues show sensitivities to children's home and peer cultures.</p> <p>Consistently harness the potential inherent in group age-diversity.</p> <p>The relational and inter-subjective nature of proximal processes is highlighted, and interactions correspondingly can be described as <b>inter-subjective actions</b>. Pedagogues consistently harness the potential inherent in age-diverse groups.</p> <p>Interactions show sensitivity and loving care, pedagogues practice with intuition and attunement, which affords pedagogic tact to be employed at critical micro-moments.</p> <p>Groups are spontaneously forming.</p>	<p>Pedagogues have extensive practice experience together with substantial experience with multi-age groups.</p> <p>Pedagogues shares the views that practice is child-centred, multi-age groups have a family atmosphere and the success of a multi-age group is down to the pedagogues' knowledge and skills.</p> <p>Time is viewed qualitatively (Kairos) which is particularly evident in pedagogues' interactions adjusting to children's individual pace of learning and accommodating the fluidity of children's time.</p> <p>Interactions within the adult-child dyads show intentionality and interactions between adults and children can be described as <b>trans-actions</b>.</p> <p>Flexible grouping is employed, where children join activities at their will. Pedagogues differentiate to individual developmental needs, and they consistently harness the potential of group age diversity.</p> <p>Personal characteristics of attunement and sensitivity contribute to positive proximal process</p>	<p>Pedagogues have noticeably limited experience (if any) beyond the multi-age organisation. Mostly, they have no preference for group organisation.</p> <p>Pedagogues hold disparate views of the characteristics of their multi-age practice, often their views straddle more than one shared viewpoint.</p> <p>Practice is adult-centred, interactions are shaped by adult's agendas. Introspection, inward looking examination, of own skills and capabilities influence adult interactions with children and correspondingly, they can be described as <b>intra-personal-actions</b>.</p> <p>Age-diversity is both harnessed and forgone depending on how confident and skilled pedagogues feel in working with the mix of ages. There are inconsistencies in practice, therefore, how group multi-agedness is treated is incidental.</p> <p>Inconsistency is also present in how time is used and viewed, both qualitatively (Kairos) and/or quantitatively (Chronos).</p> <p>Development drives learning and adults' interactions with children. Differentiation is inconsistent: to both developmental stage and/or to age in single-age micro-groups.</p> <p>In some of their interactions, pedagogues show sensitivity to children, in others, their own need drives the interactions with children.</p>	<p>Pedagogues have varying practice experience and those who, across the participant cohort, have the least practice experience (and experience with multi-age groups) belong to this practice group.</p> <p>It is believed that there is lack of training specifically for practising in multi-age groups, which they use to explain the lack of skills and confidence they feel for working with the mix of ages within the same group.</p> <p>Pedagogues work with their group as a whole or in age-stratified micro-groups.</p> <p>Time is viewed quantitatively (Chronos) and used to assert control/power.</p> <p>Differentiation is either to biological age of micro groups or there is no differentiation at all, instead, the group is treated as homogeneous, which leads to age related expectations or expecting the same from all. This reinforces uniformity.</p> <p>The potential inherent in age-diversity is consistently forgone.</p> <p>Pedagogues appear unprepared for dealing with multi-agedness, they are reactive in their interactions with children, therefore, they are described as <b>inter-reactions</b>.</p>

Table 31. Combined findings: Summary of the characteristic features of the four classifications of practice in the taxonomy of multi-age practice

Of the twenty-two pedagogues, the six pedagogues in two of the four classes of practice ('family-centred relational' and 'adult-led intentional') were capable of handling the demands the age-diverse group ecology presented, consistently harnessed the potential of multi-agedness, which suggests that they practiced with a multi-age philosophy in their age-diverse groups. On the other hand, in the case of the remaining sixteen pedagogues of the 'adult-centred incidental' and 'confused and homogenising' practices, the demands of the multi-age group ecology appeared to be a challenge. As a consequence, the interplay between the four components suggests that although they practiced in multi-age environments, they did not adopt a multi-age philosophy, which, if sustained over time, could lead to unfavourable consequences for children's ECEC experiences.

### 9.7 End-of-chapter summary

Bronfenbrenner's bio-ecological theory informed my examination of the multi-age phenomenon in real-life socio-cultural contexts (Bronfenbrenner & Morris, 1998). The identities of each of the four distinct classes of practice are established and understood in a holistic way through examining the inter-relations between the pedagogues' personal characteristics, their interactions with children, the context in which they practised and how they used time. Examining these four components in a corroborative way, gave insights to how the personal and contextual characteristics served as moderators to better understand pedagogues' multi-age interactions and how they could potentially play out as proximal processes.

The Gestalt principle has served as a connecting thread throughout my study not only to keep my research design watertight and the analytical processes coherent, but also to be able to arrive at some 'warranted assertions' (Dewey, 1938/1986, p. 146) with regards to the characteristic features of multi-age practice and its possibilities for early childhood education and care in the Hungarian context. Using the PPCT model enabled me to look closely at the whole, then develop the taxonomy of multi-age practice with its corresponding styles of adult-child interactions. At the same time, examining each component individually in relation to the four practice classes sharpened my analytic lens. Through this disaggregation I was able to delve deeper and extract richer detail, which sensitised me to what is unique about multi-age practice in this specific study context.

The conceptual conclusions of this study are summarised in Figure 19 in section 9.5 framed as a taxonomy multi-age practice. These are further discussed in the subsequent Chapter Ten, together with an evaluation of my project and recommendations for policy, practice and further research, which concludes my study.

## CHAPTER TEN: CONCLUSION

This final chapter firms up the links between the study aims set out in the Introduction chapter and the conclusions drawn here. I will do so by returning to the research questions, which, in constructive alignment, informed the direction of this investigation, the review of related literature as well as guided methodological decisions and the discussion of the findings. Answers to the three sub-questions considered together has enabled me to provide a summary of the features of multi-age practice in answer to the main research question. Following this is the consideration of the contributions my study has made; first methodologically, then the contributions to 'knowing', which considers the significance, in theoretical and conceptual terms, of what I have found out and their implications for early childhood policy and practice. The chapter concludes with the evaluation of the study and directions for future research.

### 10.1 Answers to the research question

Multi-age practice has varying features in varying contexts across the world (Ansari & Pianta, 2019a; Cozza, 2017; Murphy et al., 2016; Smit & Engeli, 2015). From a social constructivist stance, this exploratory study has focused on features of multi-age practice in the Hungarian kindergarten context, with a particular focus on adult-child interactions. The two facets of this investigation, enacted and reported multi-age practice, were considered first separately, then in relation to one another as expressed in the three sub-questions:

1. What kinds of interactions characterise pedagogues' enacted practice in multi-age environments?
2. What features characterise pedagogues' reported practice in multi-age environments?
3. What is the relationship between the reported and enacted characteristics and what conclusions could be drawn about multi-age practice?

The *first sub-question*, considered in Chapter 6, focused on what kinds of interactions characterised enacted practice in multi-age environments. Through a multi-phase analytical approach, four practice clusters were identified, each with distinctive features. '**Personalised MA practice**'

followed the child where adult-child interactions were informed by their sensitivities to children's unique needs and interests and what they brought with them into the setting. Pedagogues consistently harnessed the potential inherent in age-diverse groups through peer support, collaboration and facilitated cross-age interactions. **'Adult-led' MA practice** also consistently utilised age-diversity and, as the label suggests, pedagogues assumed a greater role in 'teaching' or leading learning in their sensitive interactions with children of mixed ages. The third practice cluster represented **'Adult-centred inconsistent' practice**, where in the observed adult-child interactions, the potential inherent in multi-age groups was both harnessed and forgone. Pedagogues differentiated according to both biological age and stage of development and children were observed to be separated into age-stratified micro-groups. Practice in the fourth cluster followed a **'same for all'** approach where the potential of group multi-agedness was not only forgone but pedagogues also treated the whole group or its single-age component micro groups as homogeneous, which removed the opportunities for peer support and cross-age interactions between children.

The *second sub-question*, examined in Chapter 7, focused on features of reported practice. To be able to answer the question, pedagogues' views were sought employing the Q-method and through the PQMethod2.35 (Schmolck, 2014) analytical software, four factors were extracted capturing four distinct views. The first of these focused on multi-age groups representing a **family model**, where children of varying ages learnt from one another and developed at a pace that suited them. The shared view was that all children were treated as individuals, therefore, a personalised approach to practice was promoted. The second factor offered a **pedagogue-centred view** of multi-age practice, where it was claimed that the success of multi-age practice largely depended on the professional skills of the pedagogues who assumed full responsibility for children's learning and development. Children were expected to follow positive adult models or peer models that were approved by adults, and this was seen conducive to accelerated development. The third narrative, representing regional managers' views mainly, suggested that the adopted **group organisational model** or the composition of a multi-age group was **of no significance** to ECEC practice. What made practice successful was the professional skills and attitudes of the pedagogues in either group organisational model. However,

having both multi-age and single-age groups in kindergartens offered choice for parents. The fourth view was mainly concerned with **lack of training, confidence in and knowledge** for practising with the mix of ages. The shared view considered multi-age practice in relation to the increased workload and the demand it placed on pedagogues in the face of no pre-or in-service training, which they felt could better prepare them for planning, organisation and differentiation. These aspects of practice were perceived as more challenging in multi-age groups than in single-age groups. This narrative gave account of a view that to manage the demands of multi-age practice, pedagogues resorted to breaking children up into smaller age-homogeneous groups.

Considered in Chapter Eight the *third sub-question* aimed to bring these two sets of understandings together and examine them in unison. Although the relationship between features of enacted and reported practice were examined in relation to one another, staying with the Gestalt principle, the aim was not to compare the two, but to use them both corroboratively to establish what characterises multi-age practice in Hungary.

Employing the Person-Process-Context-Time model (Bronfenbrenner & Morris, 1998, 2006) to interpret the findings highlighted the variation and complexities in kindergarten practice, which appeared to reveal levels of confidence in dealing with the age-diversity of multi-age groups (harness and/or forgo). Therefore, the principal outcome of this research study is an identified taxonomy of multi-age practice (Raven et al., 1971; Borgès Da Silva, 2013). The four classifications of practice and, correspondingly, the four distinct styles of adult-child interactions reveal the characteristics of ECE practice in multi-age environments in Hungary, both as enacted and reported. As summarised in Table 31 and Figure 19 in the Discussion chapter (9.5) each of the four 'classes' of practice have defining features which are reflected in their labels. The concise synopsis below holds the answers to the main research question which was: 'What are the characteristics features of multi-age practice in the Hungarian study context?'

The '**family-centred relational**' practice follows a family model where personalisation is key (Körmöci, 2019) in interacting with pedagogic tact (Sipman et al., 2019) and sensitivities to children's home and peer cultures



(Fleer, 2006; Rogoff, 2003). *Inter-subjective action* combined with spontaneity and flexibility in grouping and age composition (Hoffman, 2002) and using time qualitatively (Kairos) to accommodate children's immersion in their multi-age play (Cocker, 2015; Cuffaro, 1995) enable pedagogues to consistently harness the potential inherent in age-diverse groups.

In the '**adult-led intentional**' multi-age practice group, *trans-actions* within the adult-child dyads show intentionality and an assumed and assured responsibility to lead children's learning through play (Grieshaber, 2015; Smit et al., 2015). Pedagogues accommodate the fluidity in children's time (Kairos), particularly in relation to pace of learning (Doherty, 2012; Ansari, et al., 2016). There is a reported emphasis on pedagogues' knowledge and skills that enable pedagogues to utilise group age-diversity.

The '**adult-centred incidental**' practice is characterised by inconsistencies in grouping as well as how time is used (both qualitatively and quantitatively) (Cuffaro, 1995; Lipari, 2014). Pedagogues' *intra-personal-actions* with children follow adults' agendas and reflect the inward-looking examination of their own skills and capabilities (with no reference to anyone but themselves), which in turn influences whether the potential inherent in group age-diversity is harnessed or forgone.

Finally, in the fourth '**confused and homogenising**' practice, pedagogues work with their group as a whole or in age-stratified micro-groups, and uniformity is reinforced (Józsa et al., 2018; Millei, 2011). Time is viewed quantitatively (Chronos) and is used to assert control (Cuffaro, 1995). Pedagogues claim that they lack training for and confidence in working with the mix of ages (Hyry-Beihammer & Hascher, 2015). They appear unprepared for dealing with multi-agedness, which is demonstrated in their *inter-reactions* with children. The potential inherent in age-diversity is consistently forgone.

Grounded in the findings summarised above in relation to the main and sub-questions, the following sections outline the study's theoretical and conceptual contributions and their implications for practice.

## 10.2 Contributing to 'knowing': theoretical and conceptual contributions & policy practice implications

Grounded in social-constructivism (Crotty, 1989; Guba & Lincoln, 1998) using the bio-ecological PPCT model (Bronfenbrenner & Morris, 2006) enabled me to explore the potential relevance of the identified features of multi-age practice. The bio-ecological theory has been employed in research about multi-age education previously (Purtell & Ansari, 2018) but not in Hungary, and the PPCT model in itself offers a novel way of interpreting the study findings. The answers to the research questions summarised above are constructed through the application of the bio-ecological model to the study findings (Bronfenbrenner & Morris, 1998). It was employed to examine how the four components played out in the features identified for the four classes of practice, rather than predicting any causal relationship between what emerged through the four components and the four classified groups of practice (Weisner, 2008).

The theoretical and conceptual contributions of my research and their implications for policy and practice are discussed together here for the strength in their relationship: my ambition with this piece of research was to inform policy and practice (Chapter 1.3). Pedagogues in the Hungarian study context would have had their reasons for practising in the way they did at the time of my study. Educational theory, therefore, had already been in action (Biesta & Aldridge, 2021), whether articulated or not. Communicating my findings and conclusions to all stakeholders, potentially contributes to building up more elaborate conceptual knowledge, sharpening sensitivities to critical features of multi-age education and to refining understanding of educational theory in action.

Due to its exploratory nature, my study did not set out to give solutions to problems. At its completion, it brings attention to questions, problematises taken for granted assumptions and invites ongoing debate about current multi-age practice in Hungary (Biesta et al., 2019). My study's theoretical and conceptual contribution is that it points out what is missing, what has not been brought to attention so far and why they are important. By making my research public (Stenhouse, 1981), it lays the foundations for progressively more complex exploration of the multi-age phenomenon in successive studies. In this way, it increases the chances that practice and policy may be informed by research.

What is 'missing' are considered in four different ways in the subsequent sections of this chapter: in terms of contributions to 'knowing' and with reference to policy and practice.

#### 10.2.1. Missing as absent

Pedagogues' work in multi-age groups is absent from view and there is a paucity of systematic studies exploring the demands and opportunities it presents for pedagogues. In this sense, my study responds to an urgent cry for empirical evidence to support decision making on ECEC policy and practice matters in Hungary (Lindeboom & Busikool, 2013) as outlined in the 'motivation for my study' section of the Introduction Chapter.

Explicit policy for group organisation is also missing. There are no requirements for or references made to models of group organisation in the National Core Programme (Ministry of Human Resources, 2019) and as a result, implicit policies give way to varied interpretations and variations in multi-age practices that appear to fill the gap in national policy. Implicit policies at play are reflected in matching group organisation to curricula and vice versa. Adopting pedagogic approaches that are designed for multi-age groups and built on sound theoretical foundations such as the Montessori and Freinet approaches are examples of this in this study. However, as the findings suggest, this does not guarantee pedagogic practice that consistently utilises age-diversity.

Another example of the influence of implicit policies is when parental and/or management agendas influence which organisational model is adopted as explained in Chapter 9.2.1 (Ádám & Hegedűs, 2019). This lack of explicit policy may appear to be well-intended and founded on the high level of autonomy Hungarian pedagogues are afforded (Campbell-Barr, 2016), but the unintentional consequence of the absence of policy (and direct guidance on pedagogic practice for multi-age groups) is that multi-age organisation is treated more as a logistical principle, not a pedagogic one. Considering the growing number of multi-age groups nationally (Központi Statisztikai Hivatal [Central Statistical Office], 2020), this requires attention with an increasing urgency. Empirical research focusing on multi-age and single-age organisation of early childhood provision could support local and national theorisation and the development of both local and national policy that

would directly influence the how-s and why-s of multi-age practice as well as bring about a focus on why kindergarten groups are organised in this way.

#### 10.2.2 Missing as lacking

Theorising about early education and care in Hungary is lacking consideration for multi-age provision and practice. Just as the review of related literature and the study findings suggest, the dominant developmental discourse, which claims that development drives learning, outweighs the theories which advocate for practice where learning drives development (Dahlberg & Moss, 2005; Edwards et al., 2009). Development is the primary starting point for pedagogues' interactions with children in the 'adult-centred incidental' and the 'confused and homogenising' practice, represented by sixteen of the twenty-two observed pedagogues. Here, consideration for what children bring with them to the setting, their socio-cultural contexts, their interest and their personal characteristics is less visible, whereas this is where the six pedagogues' practice in the 'family-centred relational' and 'adult-led intentional' start. Within the current systems of education in Hungary, there appears to be a strong focus on the progress and development of children in multi-age groups, often in comparison with the development of peers in same-age groups. As the findings demonstrate, some of the current practice harps back to the age-stratified developmental approaches (Országos Pedagógia Intézet, 1971;1989; Deliné Fráter, 1994) and pedagogues who practice with this developmental idea outnumber those who follow a more personalised approach and harness the potential of age-diversity in their interactions with children.

A more widespread shift from the currently prevailing age-stratified culture of teaching and learning in multi-age environments would be essential for multi-age practice to flourish in Hungarian kindergartens. The backgrounds, interests, strengths and needs of children in multi-age groups are diverse, whereas the single-age approach implemented in the 'adult-centred incidental' and 'confused and homogenising' practice groups attempt to reduce this diversity and heterogeneity in many ways. Instead, a multi-age philosophy founded on the firm theoretical and conceptual understanding that children learn from one another would enable pedagogues to accommodate and utilise the greater variety age-diversity brings, which is

firmly underscored by peer effects literature (Choi et al., 2018; Fabes et al., 2012; Justice et al., 2011, 2014; Mashburn et al., 2009).

Although personal characteristics highlight practice features that enable pedagogues to harness the potential in age diverse groups, there is also a lack of conceptualisations as to what kind of pedagogues are best suited to work in multi-age environments. Highlighting this makes a contribution to 'knowing'. The findings of this current study suggest that the greater the experience, the greater the knowledge and understanding of how children learn in multi-age groups, which enabled six of the twenty-two pedagogues to interact with children in a way that utilised group age-diversity. This does not seem to be influenced by the lack of either pre- or in-service training, in which multi-age instruction and multi-age education are underrepresented (or indeed absent). However, there appears to be a parallel between the lack of training and the extent to which the potential inherent in multi-agedness is forgone in this study, as confirmed by the significantly higher representation of pedagogues who consistently did not utilise age diversity (n=7). It could be recommended that instead of relying on years for pedagogues to learn on the job through experience, training specifically for working in multi-age groups would be paramount to develop the skills necessary to work effectively in multi-age groups. Alternatively, in the climate where the number of multi-age groups are rising nationally and greater experience appears to benefit multi-age practice, perhaps what is lacking is the critical examination of the effectiveness of current regimes of pre- and in-service training and leading to different ways of training the workforce. It can also lead to more emphasis on women and mothers in ECEC settings. It remains unclear, however, if experience is a greater indicator of pedagogues' ability to work with a multi-age philosophy than the training received. Further empirical research is required to establish this, which could inform rationale for staff deployment models in multi-age groups.

#### 10.2.3 Missing as misplaced

The autonomy afforded to pedagogues and managers to select and implement local programmes in multi-age groups may be misplaced, for the alignment between selected local programmes and enacted practice appears to be missing, as explained above. The theoretical principles and the

conceptual framing of some of the local programmes appear to be misplaced either in multi-age groups and/or in the hands of pedagogues who are lacking knowledge and understanding of what it means to practice with a mix of ages. The Montessori and Freinet pedagogical programmes are appropriately placed in multi-age groups (Freinet, 1982; Montessori, 1976), however, study findings suggests that the Montessori curriculum was misplaced with five of the six observed pedagogues, whose practice characteristics placed them into the 'adult-centred incidental' and the 'confused and homogenising' practice groups, where the potential of age-diversity was mostly forgone.

For pedagogues, the choice between working in single- or multi-age groups is often the rhetoric rather than the reality (Ádám & Hegedűs, 2019), and pedagogues' choice to work with multi-age groups may have been misplaced for those whose practice was characterised by features of the 'confused and homogenising' practice group. Although choice and autonomous decisions could be justified on the strength of the degree level qualification of the workforce (Oberhuemer et al., 2010), both the misplaced local programmes and personal preferences may be due to lack of understanding and/or the varying degree of confidence in multi-age environments, which inevitably leads us back to either lack of pre-service training and continuous professional development or personal characteristics. Although these could also be tied up in policy and financial issues, it raises further questions that point to directions for further research: Are there characteristics that differentiate those pedagogues who prefer multi-age groups from those who favour same-age groups? Alternatively, could it be possible that pedagogues who share certain personal characteristics (particularly demand and force characteristics discussed in Chapter 9.4) are simply better at their job regardless of the group organisation model? The questions are intriguing and warrant further investigation.

#### 10.2.4 Missing as wanting

Through observing a small yet diverse cohort of pedagogues and seeking their views via the Q-sort and post-sort interviews, I have been able to construct a narrative of current multi-age practice in order to make a contribution to 'knowing' in ECEC pedagogic practice. Although the taxonomy of multi-age practice summarised in Chapter 9.5 and 9.6 provides

a snapshot in time and place, it provides a framing for pedagogues' critical personal and professional reflections as they identify with any of the four classifications of practice and interactions in the adult-child dyads.

As the summarised features for each group of practice suggest, practice in the 'family-centred relational' and 'the adult-led intentional' practice embraces the principles of a multi-age philosophy. Inter-subjective action and trans-action have the potential to contribute to generative proximal processes leading to positive outcomes for children and adults.

Contrastingly, a convincing understanding and application of this multi-age philosophy are wanting in the 'adult-centred incidental' and the 'confused and homogenising' practice groups. Correspondingly, intra-action and inter-reaction - if sustained over time - could lead to inverse proximal processes and negative outcomes. The sixteen pedagogues in these two classes of practice appear to be lacking the necessary skills and personal characteristics to be able to support children who are allocated to their multi-age groups. The ramifications of these findings are significant: Simply mixing the ages does not follow that pedagogues would practice with a multi-age philosophy. Therefore, the taxonomy in Figure 19 and the summary of descriptors in Table 31 for the four classes of practice could provide starting points for both personal and collective critical reflections, where individuals' practice is examined in light of the four components with areas for development identified. Table 31 could also serve as a tool for peer observations and provide the seeds for critical dialogue between managers and pedagogues as part of the annual appraisal and self-evaluation processes.

This also reiterates the previously asserted need for training specifically on multi-age practice. In Hungary, the training pathway is not as diverse as it is in other European countries for the ECEC workforce (Oberhuemer et al., 2010; Oberhuemer, 2013; Campbell-Barr, 2016) which could make it more manageable to develop national systems and programmes to address the training of future professionals for MA practice.

Additionally, for pedagogues already in practice, the detailed and multi-layered descriptions of the four classified practices, the taxonomy in Figure 19, could be adopted to frame self-reflection, appraisals and peer observations leading to collaborative multi-age practice including adult-child

interactions that endeavour to harness the potential inherent in age-diverse groups. Supported reflections are recommended for professional learning that utilises the expertise of, in a Vygotskian sense, 'more knowledgeable others', pedagogues whose practice is characterised by features of the 'family-centred relational' and 'adult-led intentional' practice. The multi-age context in Hungary provides a powerful opportunity for managers and pedagogues to critically reflect on how the prevailing dominance of the age-stratified approach still persuades pedagogues' thinking and continues to shape pedagogy and practice in ECEC in Hungary. This could give way to a clearer picture of multi-age practice to unfold, fashioned with a theoretical and conceptual vocabulary that could lead to alternative ways of practising.

### 10.3 Methodological contributions

My study has made methodological contributions to the field of early childhood in a number of ways. Firstly, building on previous research, it combined data generation methods to examine reported and enacted practices, Q-method and non-participant observations respectively, and resisted comparing and contrasting the rhetoric with reality. Instead, the study findings were interpreted corroboratively to answer the main research question. Secondly, combining reflexive thematic analysis (TA) (Braun & Clarke, 2006) with structured thematic tabular analysis (STTA) (Robinson, 2021) contributed to already existing ways of analysing qualitative and quantifiable data, with the added benefit of using joint displays (Fetters, 2020) to aid data reduction and reaching findings. Braun and Clarke (Braun & Clarke, 2019, 2021a, 2021b) encourage an informed way of combining other analytical tools with thematic analysis and this 'mash-up' (Braun & Clarke, 2021a, p. 336) served the nature of the data corpus well and retained theoretical and conceptual coherence. Thirdly, due to the bi-lingual, cross-cultural nature of my study, a customised translation model (Chapter 4.7) was developed to ensure rigour and trustworthiness as I was managing the methodological implications of working with two languages simultaneously. The question of translation and interpretation is often overlooked in cross-lingual studies (Squires, 2009) and this model could contribute to generating discussions within the research community to potentially inform future studies that are also located across language and cultural boundaries.



All these methodological contributions are particularly significant in Hungary because of the absence of them. Using Q-method, TA combined with STTA, the bio-ecological theory and its PPCT model for data interpretation appear to be novel in Hungary and, therefore, offers possibilities and food for thought for the Hungarian research community. Furthermore, there is a paucity of empirical research, that are practice-focused in Hungary (Lindeboom & Busikool, 2013), and research that examines multi-age early education is even more scarce. With its clear focus on pedagogic practice, my research aims to fill this gap, making both a theoretically and methodologically significant contribution. In a discovery type of investigation, fitting with Bronfenbrenner's idea (Bronfenbrenner, 1995b; Bronfenbrenner & Morris, 2006), my study lays the foundations for progressively more complex exploration of multi-age pedagogic practice in ECEC.

However, having completed my study, I can see that some of my methodological decisions were more useful than others. If I were to carry out my project again, I would more carefully consider the issues around the by-person analytical processes of Q, where the unit of analysis was the individual. Each factor was associated with the individuals who significantly loaded onto that factor, but it may be ambitious to claim a straightforward relationship between the factors extracted at aggregate level and the individual pedagogues who did the actual sorts (Kampen & Tamás, 2014). To be able to capture each pedagogues' views, and therefore gain representation of all participants' reported features of their own MA practice, semi-structured interviews may have provided richer and more nuanced data. With an unstructured way of observing individuals' practice, I could have moved towards a more ethnographic approach.

#### 10.4 Evaluation of the study

The starting point for evaluating my research is taking stock of what could realistically be expected of it and what is beyond its scope (Biesta et al., 2019).

##### 10.4.1 Strengths

In terms of its strength, the coherence and rigour in the research design was achieved by adhering to the quality and trustworthiness principles of Lincoln and Guba (1985) and Yardley (2008) and by the consistent

application of the Gestalt 'wholeness' principle (Hollway & Jefferson, 2013) in the various layers of the study: in the Q-method procedures (Watts & Stenner, 2012), in the classification of multi-age practice where individual practice profiles contributed to groups profiles and in the application of the PPCT bio-ecological model (Bronfenbrenner and Morris, 1998, 2006). This enabled a holistic understanding of the findings.

The mirrored by-person analytical approach applied to both sets of data corpus could also be considered as a strength. The complementary qualitative and quantifiable data were brought together in a layered approach (Creswell & Plano Clark, 2018): first within the analytical processes of the Q and the analytical framework for the observational data separately, then together corroboratively, leading to the taxonomy of multi-age practice.

Rather than employing a translator, grappling with the translation myself to achieve conceptual, semantic and cultural fidelity to the data generated in Hungarian (source language) (Eco, 2004) enhanced my study and could be considered as a strength. Using the two languages as heuristic apparatus (Tazzori, 2019) enabled me to harness the potential of translation for my research via: (i) better comprehension of my data; (ii) following theoretical and conceptual hunches through more sophisticated interpretation; and (iii) more refined analysis.

#### 10.4.2 Limitations

Along with these strengths, the findings can only be interpreted in the context of the study limitations. Firstly, like with other case studies, there is the issue of generalisability. Although efforts have been made to ensure the trustworthiness of the findings (Chapter 4.8), the taxonomy offered here only applies within this small study context. The results are not nationally representative. The breadth of data gained within this study provides a level of robustness and the conceptual conclusions from the findings could potentially be applied to cases with similar attributes, to contexts that bear similarities to my own study's context (Stenhouse, 1981).

Secondly, on reflection, it would have been valuable to engage the study participants in further member checking, in particular, checking how I understood the observational data. This would have been particularly valuable as the focus slightly shifted with each method used for data

generation. As with all real world research (Robson, 2016), some limitations are difficult to mitigate. While all participating pedagogues volunteered to contribute to my research and gave their time willingly, data generation took place in the last 4 weeks of the academic year so further requests from me would have been an imposition on their time as well as impractical, because it would have taken pedagogues into their holiday period.

Thirdly, there is a limit to my study's theorisation. The findings reported in this thesis are my own subjective constructions of multi-age practice captured in a specific place and time. Social and cultural contexts are prone to change, so is my own position as a bi-lingual, bi-cultural researcher, consequently, my contribution to 'knowing' here is not static either. In fact, it is greatly hoped that my study provides a springboard for lively debate and further theorisations to complement the one I present here. To mitigate against the limitations in theorisation, I have explicitly recorded and explained the research processes at every stage ensuring transparency and traceability so that my theoretical assertions to advance understanding of multi-age practice could be seen as warranted.

There have also been a few 'tender failures' along the way that aided my journey in my apprenticeship in social science research (Clark & Sousa, 2020). For example, I faced the issue of curtailed access to Kindergarten 2. Negotiating access hinged on my familiarity and my previously established relationships with settings, however, negotiating research relationship was in itself negotiable (Held, 2020). As a result, a very assertive gatekeeper only allowed me three-days' access instead of the five, which resulted in a slightly reduced data corpus. Subsequently, this did not impact significantly on data analysis, but taught me a valuable lesson.

Another merciful failure related to observational data interrogation. In the first iterations, I was focusing on all recorded interactions aggregated when creating practice cluster profiles, and not on interactions that had either harnessed or forgone age diversity in the group. This had skewed my focus and resulted in cluster descriptions that were not aligned to the study aim. Subsequent iterations kept multi-age interactions in focus and establishing individual pedagogue profiles first led to refining inclusion criteria for each practice cluster.

### 10.5 Future research directions

It was anticipated that the current study would pave the way for broader future research opportunities in the field of early childhood, specifically in relation to multi-age practice and adult-child interactions. Research direction with reference to group organisational models and personal characteristics and their influence on pedagogues' ability to practice in multi-age groups have already been identified in sections 10.2.1 and 10.2.2 above.

Further possibilities for future investigation could be considered in relation to research on a much wider scale to achieve greater representation nationally. Furthermore, the already existing models of multi-age practice in Europe and worldwide could also offer possibilities for international comparison.

One of the facets of this study, enacted practice, only focused on adult-child interactions as contributors to features of multi-age practice at a micro level. The multiple realities of multi-age practice embedded into the various layers of the ecological systems are much more complex, therefore, examining further features of enacted multi-age practice at more distal levels, such as leadership or staff training, would help illuminate the factors that further influence both proximal and distal processes and what characterises multi-age provisions for young children.

### 10.6 Final remarks

Pedagogic practice only makes sense in the cultural and geo-political context it resides in. I have also come to understand that there is an element of historicity to be acknowledged as practice changes and evolves over time. Equally, my own research practice is located in my own history - my upbringing and education in Hungary and professional life in England- and the cultures I have straddled over the years. This research project has provided me with the opportunity to bring the personal and professional together, to cross boundaries while negotiating the fluidity of my insider-outsider position as I strove to understand multi-age practice that was familiar yet unfamiliar to me from the start.

As an apprentice in education research throughout this journey, I often relied on my intuition to guide me in finding a logical path while feeling humbled by the unwavering support of my supervisor in Hungary and my supervisors at both the University of Northampton and The Open University.

I also owe this knowledge contribution to the kindergarten pedagogues and the children for their generosity of time and spirit.

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## APPENDICES

### Appendix 1 Ethical application and approval letter (online record)

Ethics Application - Mrs Eleonora Teszenyi: Ethics committee decision

Ethics committee decision

Action required

No action required

Decision

Approved

Notes

Thank you for providing these clarifications. I am happy to confirm that all of the Committee's queries have been addressed. The application is therefore given full approval via Chair's Action.

Congratulations on reaching this stage. We wish you all the best for your project.

Please update the Committee via Gateway if you need to make substantial changes or additions to the approved project.

## Appendix 2 Time sample observation schedule showing analysis

### TIME SAMPLE OBSERVATIONS – with ANALYSIS

Observation unit number: <b>14</b>	Location: Buzaszem 2-es csoport
Date: Thurs 7 <sup>th</sup> June 2018	Context: A little bit of indoor free play then a short carpet time and going outside. Indoors: Duplo blocks and cars on the rug; drawing table with paper, crayons and pencils, and a table top game. There are only 10 children left in the group (5 boys and 5girls); the rest of them (13 children who are going to school) have gone to the local library for an event (they are meeting a children's book author) <b>THIS IS SEPARATING CHILDREN INTO GROUPS ACCORDING TO THEIR AGES.</b> (my in situ field notes)
Time: 75mins/ 9.45am-11.00	Pedagogue observed: Ped19

### SUMMARY OF INTERACTIONS- NUMERICAL

Total number of interactions recorded			
ADULT TO CHILD	CHILD TO ADULT	ADULT TO ADULT	NO INTERACTION
14	7	3	2

No.	Between who?	What is happening? CONTENT	Pedagogic strategy employed 1 <sup>st</sup> and 2 <sup>nd</sup> level codes	THEME	Harness age related heterogeneity?	Comments
1 9:45	ADULT TO CHILD	Ped19: „Will you be a fireman , too? „ Ch179: „And me a policeman!“ Ped19: „So where is the police car then?“ Ch179: „We have got it. „	In conversation with ch  Enabling children's engagement	T&L CHILD-LED	NO	Ped19 is playing with a group of children on the rug: they are building a

		Tia: Hmm (meaning yes.) Ped19: „This is a car carrier – it is transporting all these cars.”				house, a garden and a fire station.
2 9:48	CHILD TO ADULT	Ch179 is explaining how the building has collapsed as he pulled out a brick from the bottom. Ped19: “Well, never!”	In conversation with ch  Enabling children’s engagement	T&L CHILD-LED	NO	
3 9:51	ADULT TO ADULT	Ped19 is explaining to me about Child 183’s language development, the assessments she has had and how much progress she has made.	Watching over ch Observing & reserving	SUPERVISION	NO	
4 9:54	ADULT TO CHILD	Ped19: “Listen everyone. It is nearly 10 o’clock. Let’s pack the toys away and go outside. It is beautiful weather and we can exercise a bit.”	Getting ready  Transitioning	PREP	NO	
5 9:57	ADULT TO CHILD	Ped19: “ Come on here everyone, let’s sit on the rug. Oh dear this is not all packed away yet.”	Multi-tasking Observing & reserving	SUPERVISION	NO	She finds some Duplo block still left on the rug. She goes to the Duplo box and puts the blocks in the cupboard that were left out.
6 10:00	ADULT TO CHILD	Ped19: “Are there many of us or not so many today?” Children: “Not many” Ped19: “Why is that?” Children: Because the others have gone to the library. Ped19: “There will be more of us because other children are coming to join us in September. “	Leading circle time  Sustaining children’s engagement	T&L ADULT-LED	YES (+)	Carpet time, sensitivity to children’s feelings on oldest children leaving the group.



		<p>Ped19: "Lilike, are you happy or sad that the older children are going to leave the group?"</p> <p>Lilike: "I am sad."</p> <p>Ped19: "Why is that?"</p> <p>Lilike: "Because Istvan is going to leave."</p> <p>Ped19: "Your friend is going to leave?"</p> <p>Lilike: Yes.</p>				
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Appendix 3 Tracker observation schedule – showing analysis

TRACKER OBSERVATIONS – RECORDS & ANALYSIS

Observation unit number: <b>2</b>	Location: Gyermek Haza-6-os csoport
Date: Tues 15 <sup>th</sup> May 2018	Context: Free play before lunch indoors
Time: 75mins/11.15am-12.30	Pedagogue observed: Ped4

SUMMARY OF INTERACTIONS- minutes spent on...

T&L ADULT	T&L CHILD	CARE	SUPERVISION	PREP		

No of mins	What the pedagogue is doing? CONTENT	Strategy employed	THEME	Harness age heterog?	Comments
11.15-11.17 2mins	On the carpet, playing with children who are looking for items that begin with a particular sound. They choose from the laid out alphabet cards.	Leading activity Sustaining children's engagement	T&L ADULT-LED	No?	From the set up it seems to me they are coming to the end of an activity led by P4
11.17-11.48 31mins	On the edge of the home corner, sitting on the floor with a child on her lap. Ped4 says: Child27 (7yr 2mths) would like to tell you all a story. Child 27 sits in a child's arm chair and tell her story. Ped4 listens attentively and claps when it all finishes. The next child to tell a story is child 38 (5yrs11mths). Ped4 helps her with a rhyme she chooses to say instead of a story, she keeps nodding in time with the rhythm as a way of supporting the child. While Child 36 (6yrs 2mths) tells sits on her lap to listen. his story, Child50 (3yrs 7mths) When child 36 finishes his story, Ped4 claps so do the other children. Next it is Child48 (4yrs) tells his	Diff-ed support  Enabling children's engagement          Emotional support/providing comfort	T&L CHILD initiated          CARE	yes	

	<p>story and 3 younger ones and child36 sit in front of the story teller to listen along with Ped4. She claps when the child finishes. When Child43 (5yrs) tells his story, Child 50 (3yrs 7mths), Child 31 (6yrs 9mths) and Child 35 (6yrs 2mth) are listening. Child 31 (6yr 9mths) tells her story and child51 (3yrs 6mths) sits in Ped4's lap. When Child50 (3yrs 7mths) tells her story, Child35 (6yrs 2mths), Child 31 (6yrs 9mths) and Child 27 (7yrs 2mths) are watching and listening with Ped4.</p>				
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Appendix 4 Thematic analysis of the concourse

No.	Statements from English academic journal articles	source	Code/Theme (vertical)	Presented as Advantageous/Hasznos (+) Disadvantageous/Hátrányos (-) Neutral/Semleges (0) (Horizontal)
1	The ratio of younger to older children influences how beneficial (or not) the mixed-age group is for the children. A fiatalabb és idősebb gyerekek aránya befolyásolja hogy mennyire előnyös (vagy nem) a vegyes életkorú csoport a gyermekek számára.	Ansari et al, 2016	CHILDREN'S POINT OF VIEW/GYERMEKEK SZEMPONTJÁBÓL FROM THE CHILDREN'S POINT OF VIEW IN GENERAL/A GYERMEKEK SZEMPONTJÁBÓL ÁLTALÁBAN  Child ratio/gyerek arány	0
179	A nagyok nem csak a kicsiknek hanem az óvónőknek is segítenek. [Older children help not only their younger peers but also the pedagogues.]	Kósáné Ormai Vera (2001)	FROM THE OLDER CHILDREN'S POINT OF VIEW/AZ IDŐSEBB GYERMEKEK SZEMPONTJÁBÓL  Helping others/Segíteni másokat	0
249	Mind egy nagy család, úgy működik a vegyes életkorú csoport, nagyon elfogadóak a gyermekek egymás iránt. [Mixed-age groups operate like a family, children are very accepting of each other.]	Focus group interview with pedagogues 3 May 2018	CHILDREN'S POINT OF VIEW/GYERMEKEK SZEMPONTJÁBÓL FROM THE CHILDREN'S POINT OF VIEW IN GENERAL/A GYERMEKEK SZEMPONTJÁBÓL ÁLTALÁBAN  Acceptance	+

## Appendix 5 Focus group schedule with pedagogues – concourse development

**Date:** Thursday 3<sup>rd</sup> May 2018

**Time:** 3pm

**Present:**

*The **aim** of the focus group: to contribute to the concourse for the Q -sort to re-balance the so far theoretically informed concourse development and include practitioner perspectives*

### **INTERVIEW SCHEDULE:**

- ✓ SHARE WITH THE PARTICIPANTS WHAT THE RESEARCH IS ABOUT AND PROVIDE THE INFORMATION LETTER, WHICH THEY CAN KEEP FOR FUTURE REFERENCE.
- ✓ EXPLAIN THE ETHICS (AS PER THE LETTER) AND ASK FOR THEIR CONSENT – SIGN CONSENT FORM
- ✓ CONFIRM HOW LONG THE INTERVIEW WILL TAKE AND WHEN/HOW THEY CAN EXPECT TO HEAR ABOUT THE RESEARCH OUTCOMES.
- ✓ PUT THEM AT EASE AND ONLY START THE VOICE RECORDER IF/WHEN THEY ARE COMFORTABLE AGREE TO THE RECORDING.

### **INTERVIEW QUESTIONS:**

- 1. How much experience have you got working with children in mixed-ages?**
  - a. How did you come to work in a mixed-age group?
  
- 2. To ensure shared understanding, can you explain what ‘mixed-age group’ means to you?**
  
- 3. Let’s start with a general question: What is your view of mixed-age groups?**
  
- 4. What is your role when working in mixed-age groups?**
  - a. In terms of ‘teaching’: planning for activities? Engaging with children? Facilitating children’s play and learning? Working with parents?
  - b. How is it different from working with children of the same age?
  - c. Do you have a preference? Mixed-age or same -age groups? Why?
  
- 5. What is the strength of mixed-age groups in your view?**
  - a. From the pedagogues’ point of view?
  - b. From the children’s point of view?
  - c. From the parents’ point of view?

**6. What are the weaknesses of working in mixed-age groups?**

- a. From the pedagogues' point of view?
- b. From the children's point of view?
- c. From the parents' point of view?

**7. What are the highs and lows of working in mixed-age groups?**

**8. What else would you like to add?**

## Appendix 6 The final 48 statements of the Q-set

1	There is a concern about younger children's well-being and safety when placed in the same space as older children.
2	When help is given without it being asked for, it is used to demonstrate power in mixed-age groups: the one giving help assumes the power.
3	Older children in mixed ages have higher peer standing therefore they are more likely that they have older or same age friends.
4	Children in mixed ages develop intellectual and communication skills because of broader differences in the learning community.
5	Segregating younger and older children for safety is unnecessary when the older children are present to model/scaffold higher levels of impulse control.
6	'Old timers' have a unique role in mixed-age groups to induct the new comers into the learning community.
7	Older children are closer in maturity and energy levels to younger ones so it is more natural from them to learn from them than from adults.
8	Mixed-age groups provide an environment for pro-social behaviour to thrive such as helping, sharing, taking turns.
9	Younger children are capable of contributing to more complex play in mixed-age groups than they could initiate if they were in same –age groups.
10	Development is at a greater pace in mixed-age groups because following the model older children provide, younger ones are prepared to take on challenges that require greater efforts.
11	Children in a mixed-age group accept each other's abilities and appreciate one another for their various strengths.
12	Mixed-age groups are recommended for children from disadvantaged backgrounds because for their healthy development they require positive models and emotional adjustment.
13	Life is based on the family principle: all adults take part in the nurturing and all children are full members of this group which is the continuation of their families at home.
14	In mixed-age play children are more settled and concentrate for longer, which encourages self-regulation.
15	There is a two-way learning process in which older children reinforce their own learning by teaching it to their younger peers.
16	One barrier is dissatisfaction and rejection by parents: Parents feel that older children learn less; little ones are challenged intensely and lose confidence in their own abilities.

17	Parents feel that pedagogues are less able to look after each individual child in a mixed-age group.
18	Parents tend to choose the pedagogue whatever type of group they work in.
19	Parents like mixed-age groups for when their children are the younger ones but not when their children are the oldest in the group.
20	Parents report that they also witness their children's caring-protective behaviours at home after they have experienced it in their mixed-age groups.
21	Parents can bring in younger siblings to the kindergarten as they come to collect their children, so by the time the siblings start in the group they would have already become familiar with the children and come to like the group.
22	Mixed-age groups can be created on parental request so that siblings can attend the same kindergarten group.
23	Pedagogues find learning most problematic in a mixed-age group: the organisation, the content of it and the opportunities for differentiation.
24	Parents and pedagogues fear that preparation for school is less effective.
25	There is lack of time for individual attention in mixed-age groups.
26	In mixed-age groups educators still segregate children for certain activities.
27	There is lack of training for mixed-age practice.
28	Educators are less willing to work in a system that at first glance appears more complex.
29	Mixed-age groups present greater workload for educators.
30	In mixed-age groups activities are planned to the developmental level of the older children and easier tasks need to be provided for the younger ones who join in.
31	Activities can be planned separately for 5-7 year olds to ensure that they do not fall behind their oldest peers in same-age groups.
32	Pedagogues can find appropriate opportunities during normal daily activities to provide more for 5-7 year olds so that they keep up with their oldest peers in same-age groups.
33	At the beginning of the academic year, after the older children have left for school, pedagogues play an important role in helping children develop their self-image and to settle status hierarchies within the group.
34	Children can start kindergarten in a mixed-age group at any point during the year, whereas they cannot in a same-age group.
35	The pedagogues' work is multi-layered in mixed-age groups because they need to provide greater level of differentiation.
36	It is important to achieve the 1/3, 1/3, 1/3 ratio of the ages within the group because if the younger children are higher in numbers, they dominate the level for developmental work (at an average).
37	Organisation, planning, thinking ahead, teaching strategies are a greater challenge for pedagogues in a mixed-age group.
38	In same-age groups, both children and pedagogues are more inclined to compare and to compete. Mixed-age groups are more accepting.
39	In a mixed-age group, pedagogues cannot reuse plans from previous years (as it can happen in same-age groups) – they always need to plan anew.
40	Pedagogues learn a lot from children in mixed-age groups; they are always amazed at how much children love, care for and protect each other.



41	Mixed-age groups better meet pedagogues' needs: there are opportunities to nurture the 'babies' of the group and at the same time they can freely converse with the older ones.
42	A mixed-age group operates like a big family; children are very accepting of one another.
43	Stereotyping of children in a mixed-age group diminishes.
44	Differences in development are more noticeable, which urges pedagogues to differentiate instead of teaching to the average middle level of development.
45	Children develop at a faster rate in a mixed-age group because pedagogues reinforce the behaviour of those children who are able to provide more mature models for their less developed peers; they are encouraged to follow these models.
46	Mixed-age grouping is a child-centred approach where the curriculum fits their needs.
47	Pedagogues take advantage of the diversity and varying range of ability that naturally occur in a mixed-age group
48	Differentiated teaching strategies encourage educators to focus on the progress of individuals in a mixed-age group.

Appendix 7 Factor arrays for the four viewpoints

Factor array for Factor One: 'Family model'

Most uncharacteristic of my practice	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	Most characteristic of my practice
	25	17	1	16	34	9	48	37	8	42	10	
	28	2	24	3	33	23	35	47	45	11	13	
		30	19	27	36	39	44	15	4	40		
			26	18	29	32	38	5	6			
				43	7	20	46	21				
					31	12	41					
						22						
						14						

Factor array for Factor Two: "It's all down to the pedagogue"

Most uncharacteristic of my practice	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	Most characteristic of my practice
	19	25	1	27	7	20	18	31	6	45	48	
	28	16	41	2	39	3	47	10	4	37	35	
		17	24	22	42	11	13	44	21	32		
			14	26	38	8	23	29	36			
				34	5	12	30	33				
					9	46	40					
						15						
						43						

Factor array for Factor Three "The group type is of no significance"

Most uncharacteristic of my practice	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	Most characteristic of my practice
25	34	24	3	27	4	48	40	44	8	46		
2	41	33	1	39	21	6	5	19	42	18		
	36	26	31	23	12	22	47	37	15			
		16	17	10	43	9	45	11				
			28	35	13	14	7					
				29	20	30						
					38							
					32							

*Factor array for Factor Four 'Lack of training, knowledge and confidence'*

Most uncharacteristic of my practice	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	Most characteristic of my practice
25	17	26	12	11	31	15	13	39	37	27		
1	24	14	41	21	32	46	6	40	18	35		
	34	28	7	30	42	29	5	47	10			
		22	19	48	9	45	44	8				
			2	33	16	20	38					
				3	4	23						
					43							
					36							

## Appendix 8 Post-sort interview schedule

**A kutatás címe:** A vegyes életkorú magyar óvodai csoportok sajátosságainak vizsgálata

**Kutató:** Teszenyi Eleonóra– PhD hallgató

**Data collection for - Objective 2:** To seek pedagogues' views on the characteristics of their mixed-age practice

**Az interjú dátuma és ideje:**

**Óvoda:**

**Interjú alany:**

**Interjú kérdések:**

1. Milyenek találtad az állítások szortírozását? [How did you find the sort?]
  - a. Érthető volt hogy mit kellett csinálni?
  - b. Volt olyan állítás ami nem volt érthető vagy nehéz volt értelmezni?
  - c. Hogy ment a szortírozás az állításokat a hálózatba helyezése előtt?
  - d. Hol kezdted a hálózatba helyezést? Miért?
2. Melyik állításokat volt a legkönnyebb a hálózatba helyezni? [Which statements did you find the easiest to rank order? Why?]
  - a. Miért?
  - b. A piramis melyik oldalát találtad könnyebbnek?
  - c. Mennyire volt könnyű vagy nehéz a végletes állításokat megtalálni a hálózat -5 és +5 végein?
  - d. Miért választottad ki azokat az állításokat amiket a leginkább jellemzőjének találtad a te vegyes életkorú csoportodnak? Miért voltak ezek fontosak neked?
  - e. Miért választottad ki azokat az állításokat amiket a legkevésbé találtad jellemzőjének a te vegyes életkorú csoportodnak?
3. Mi volt nehéz? [Which statements were difficult to place?]
  - a. És miért volt az nehéz?
  - b. Melyik állításokat volt a legnehezebb berakni? Miért?

**THANK the participants.**

## Appendix 9 An example of a crib sheet for factor interpretation

### **FACTOR 1 DESCRIPTION:**

Factor 1 has an eigenvalue of **4.48** and explains **16%** of the study variance. Six pedagogues are significantly associated with this factor. (Eigenvalues are indicative of the factors' statistical strength and explanatory power. Eigenvalues above 1.00 satisfy the Kaiser-Guttman criterion (Guttman, 1954; Kaiser, 1960, 1970) (in Watts and Stenner p106)

(The four factors account for 47% (16%+11%+11%+9%) of the total study variance. Anything between 35-40% or above is considered a good solution on the basis of common factors (Kline, 1994) (in Watts and Stenner, p105)

*For the demographics of the six pedagogues see below.*

### **Items ranked at +5 (most characteristic of MA groups):**

10. Development is at a greater pace in mixed-age groups because following the model older children provide, younger ones are prepared to take on challenges that require greater effort.

13. Life is based on the family principle: all adults take part in the nurturing and all children are full members of this group which is the continuation of their families at home.

### **Items ranked at +4 (most characteristic of MA groups):**

42. A mixed-age group operates like a big family, children are very accepting of one another.

11. Children in a mixed-age group accept each other's abilities and appreciate one another for their various strengths.

40. Pedagogues learn a lot from children in mixed-age groups, they are always amazed at how much children love, care for and protect each other

### **Items ranked at -5 (most uncharacteristic of MA groups):**

25. There is lack of time for individual attention in mixed-age groups.

28. Educators are less willing to work in a system that at first glance appears more complex.

### **Items ranked at -4 (Most uncharacteristic of MA groups):**

17. Parents feel that pedagogues are less able to look after each individual child in a mixed age group.

2. When help is given without it being asked for, it is used to demonstrate power in mixed-age groups: the one giving help assumes the power.

30. In mixed age groups activities are planned to the developmental level of the older children and easier tasks need to be provided for the younger ones who join in.

### **Items ranked higher by Factor 1 than any other factor:**

**10. Development is at a greater pace in mixed-age groups because following the model older children provide, younger ones are prepared to take on challenges that require greater effort. (5) (compared to F2/+2; F3/-1; F4/+4)**

**11. Children in a mixed-age group accept each other's abilities and appreciate one another for their various strengths. (4) (compared to F2/0; F3/+3; F4/-1)**

**13. Life is based on the family principle: all adults take part in the nurturing and all children are full members of this group which is the continuation of their families at home. (5) (compared to F2/+1; F2/0; F4/+2)**

34. Children can start kindergarten in a mixed-age group at any point during the year, whereas they cannot in a same age group. (-1) (compared to F2/-2; F3&F4/-4)

**40. Pedagogues learn a lot from children in mixed-age groups, they are always amazed at how much children love, care for and protect each other. (4) (compared to F2/+1; F3/+2; F4/+3)**

41. Mixed-age groups better meet pedagogues needs. There are opportunities to nurture the babies, and at the same time they can freely converse with the older ones. (1) (compared to F2/-3; F3/-4; F4/-2)

#### Items ranked lower by Factor 1 than any other factor:

18. Parents tend to choose the pedagogue whatever type of group they work in – mixed-age or same –age. (-2) (compared to F2/+1; F3/+5; F4/+4)

**30. In mixed age groups activities are planned to the developmental level of the older children and easier tasks need to be provided for the younger ones who join in. (-4) (compared to F2&F3/+1; F4/-1)**

37. Organisation, planning, thinking ahead, teaching strategies are a greater challenge for pedagogues in a mixed-age group. (2) (marginally: F2&F4/+4; F3/+3)

43. Stereotyping of children in a mixed-age group diminishes. (-2) (compared to F2&F3&F4/0)

44. Differences in development are more noticeable, which urges pedagogues to differentiate, instead of teaching to the average middle level of development. (1) (marginally: F2&F4/+2; F3/+3)

#### Distinguishing statements for F1 (bold print indicates significance at $P < .01$ ; the rest at $P < .05$ )

10. Development is at a greater pace in mixed-age groups because following the model older children provide, younger ones are prepared to take on challenges that require greater effort. (5) (F2/+2; F3/-1; F4/+4)

**13. Life is based on the family principle: all adults take part in the nurturing and all children are full members of this group which is the continuation of their families at home. (5) (F2/+1; F3/0; F4/+2)**

11. Children in a mixed-age group accept each other's abilities and appreciate one another for their various strengths. (4) (F2/0; F3/+3; F4/-1)

35. The pedagogues' work is multi-layered in a mixed age group because they need to provide a greater level of differentiation. (1) (F2/+5; F3/-1; F4/+5)

**41. Mixed-age groups better meet pedagogues needs. There are opportunities to nurture the babies, and at the same time they can freely converse with the older ones. (1) (F2/-3; F3/-4; F4/-2)**

**18. Parents tend to choose the pedagogue whatever type of group they work in – mixed-age or same –age. (-2) ( F2/+1; F3/+5; F4/+4)**

**30. In mixed age groups activities are planned to the developmental level of the older children and easier tasks need to be provided for the younger ones who join in. (-4) (F2/+1; F3/+1; F4/-1)**

**Consensus statements (do not distinguish between any pair of factors; bold are non-significant at P>.05; others at P>.01)**

1. There is a concern about younger children's well-being and safety when placed in the same space as older children.

6. 'Old timers' have a unique role in mixed-age groups to induct the new comers into the learning community.

**9. Younger children are capable of contributing to more complex play in mixed-age groups than they could initiate if they were in same –age groups. (F1/0; F2/-1; F3/+1; F4/0)**

**20. Parents report that they also witness their children's caring protective behaviours at home after they have experienced it in mixed age groups. (F1&F2&F3/0; F4/+1)**

23. Pedagogues find learning most problematic in a mixed-age group: the organisation, the content of it and the opportunities for differentiation. (F1/0; F2/+1; F3/-1; F4/+1)

**24. Parents and pedagogues fear that preparation for school is less effective. (F1&F2&F3/-3; F4/-4)**

**25. There is lack of time for individual attention in mixed-age groups. (FF1&F3&F4/-5; F2/-4)**

26. In mixed-age groups educators still segregate children for certain activities. (F1&F3&F4/-3; F2/-2)

43. Stereotyping of children in a mixed-age group diminishes. (F1/-2; FF2&F3&F4/0)

**44. Differences in development are more noticeable, which urges pedagogues to differentiate, instead of teaching to the average middle level of development. F1/+1; F2/+2; F3/+3; F4/+2)**

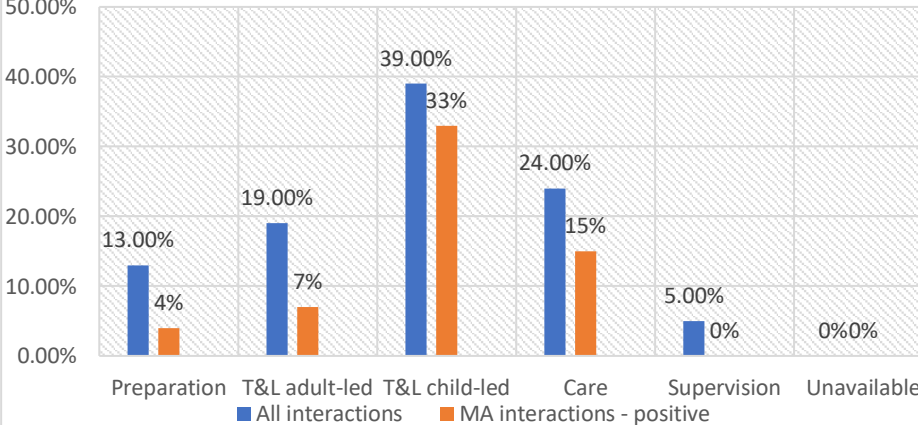
**47. Pedagogues take advantage of the diversity and varying range of ability that naturally occur in a mixed-age group. (F1/+2; F2/+1; F3/+2; F4/+3)**

**DEFINING SORTS:** P6, P7, P8, P18, P19, P20

**(PARTICIPANTS WHO DID NOT LOAD ON ANY OF THE 4 FACTORS:** P1, P4, P11, P12, P15, P21, P22, P23, P24, P26

Appendix 10 Joint display of qualitative and quantifiable constructs in the observational findings

**JOINT DISPLAY CLUSTER 1 ‘Personalised MA practice’**

QUANTIFIABLE DATA FINDINGS	QUALITATIVE DATA FINDINGS & EXAMPLES	META-INFERENCES																					
<p style="text-align: center;"><b>Thematic breakdown of pedagogues’ interactions – Cluster 1</b></p>  <table border="1"> <caption>Thematic breakdown of pedagogues’ interactions – Cluster 1</caption> <thead> <tr> <th>Category</th> <th>All interactions (%)</th> <th>MA interactions - positive (%)</th> </tr> </thead> <tbody> <tr> <td>Preparation</td> <td>13.00%</td> <td>4%</td> </tr> <tr> <td>T&amp;L adult-led</td> <td>19.00%</td> <td>7%</td> </tr> <tr> <td>T&amp;L child-led</td> <td>39.00%</td> <td>33%</td> </tr> <tr> <td>Care</td> <td>24.00%</td> <td>15%</td> </tr> <tr> <td>Supervision</td> <td>5.00%</td> <td>0%</td> </tr> <tr> <td>Unavailable</td> <td>0%</td> <td>0%</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>• In ALL interactions, teaching and learning child-initiated interactions dominate at 39%, supervision is least observed (5%)</li> <li>• In MA interactions, it is still teaching and learning child-initiated interactions that dominate (33%), no evidence of MA interactions in ‘supervision’.</li> <li>• Same proportional pattern in ALL and MA interactions: multi-age interactions completely mirror how pedagogues practice with children in general: first and foremost, they are tuned into children’s own initiated play and focused on their care before they step in to lead children’s learning or involve them in preparatory interactions</li> </ul>	Category	All interactions (%)	MA interactions - positive (%)	Preparation	13.00%	4%	T&L adult-led	19.00%	7%	T&L child-led	39.00%	33%	Care	24.00%	15%	Supervision	5.00%	0%	Unavailable	0%	0%	<p><b>Theme: Teaching and learning child-led MA interactions</b>  <i>Sharing in children’s play in multi-age contexts and contributing to child-initiated <u>shared thinking</u>: discussion about cloves in the compote (P21, Gr9)</i>  <i>Encouraging peer support through multi-aged <u>peer modelling</u>: children reciting rhymes, re-telling stories (P4, Gr1)</i>  <i>Joint <u>problem solving</u>, and <u>collaboration</u>: making a lake to float paper boats (P16, Gr7)</i>  <i><u>Differentiation</u> to individual stage of development: child challenged by climbing on the curved climbing frame (P16, Gr7)</i></p> <p><b>Theme: Care related MA interactions</b>  <i><u>Caring responsibilities for peers</u>, stage over age approach: squeezing paste on toothbrushes, serving each other food (P16, Gr7; P4, Gr1)</i>  <i><u>Sensitivity</u> to personal and emotional needs: access to comforter (P4, Gr1)</i>  <i>Intercepting <u>un-solicited help</u>: older child asserting her help on younger child at the folk dance (P4, Gr1)</i>  <i><u>Family-like</u> atmosphere: calm but busy morning where children own the place and know what they are doing (P16, Gr7)</i></p> <p><b>Theme: Teaching and learning adult-led MA interactions</b></p>	<p><b><u>Drawn from quantifiable findings:</u></b>          whichever way these three pedagogues interact with children across the five themes, they are equally skilled to consistently utilise age-diversity in their groups</p> <p><b><u>Drawn from qualitative findings:</u></b>          A personalised approach, where support is individually tailored according to children’s unique needs and stages of development. Pedagogues draw on their in-depth knowledge of the children and their families in their care and on what they bring to the setting from home. Pedagogues stay in tune with child-initiated play. Children’s contributions are valued, and they are provided with opportunities and responsibilities that enable them to be agents of their own multi-age learning. Multi-age interactions are encouraged and utilised in a learning enhancing way. How pedagogues engage with children in their play appears to show attunement and intuition, there seems to be a visceral quality about their MA</p>
Category	All interactions (%)	MA interactions - positive (%)																					
Preparation	13.00%	4%																					
T&L adult-led	19.00%	7%																					
T&L child-led	39.00%	33%																					
Care	24.00%	15%																					
Supervision	5.00%	0%																					
Unavailable	0%	0%																					



	<p><u>Tuning into</u> children, pick up on <u>subtleties</u>:  <i>folding paper hat when others are folding paper boats (P16, Gr7)</i></p> <p><u>Pedagogic tact</u>: <i>folk dancing, music making and steppingstones (P21, Gr9)</i></p> <p><u>Positive redirection</u>: <i>use kind hands (P4, Gr1)</i></p> <p><u>Self-evaluating</u> opportunities for children, taking care with praise: <i>child's appraisal of the boat she folded (P16, Gr7)</i></p> <p><u>Joint problem solving</u>: <i>"cappuccino clips" to hold the folded paper in place (P16, Gr7)</i></p> <p><b>Theme: Preparatory MA interactions</b></p> <p><u>Choosing multi age peers freely</u>: <i>pairs to walk with, sharing lunch with peers (P4, Gr1; P16, Gr7)</i></p> <p><u>Allocating responsibilities</u>: <i>everyone can be lunchtime helper (P4, Gr1; P16, Gr7; P21, Gr8), sweeping sand up (P16, Gr7)</i></p>	<p>interactions that affords pedagogic tact to be practiced.</p>
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## Appendix 11 Inclusion criteria for the four practice clusters

PRACTICE CLUSTER	QUALITATIVE CRITERIA	QUANTIFIABLE CRITERIA
<p>(One)</p> <p><b>'Personalised MA practice'</b></p>	<p>The narratives describe a personalised and child respecting approach, where the pedagogues' interactions are guided (informed) by what the children are initiating and/or bringing into the setting from home. Adults follow children's lead.</p> <p>There is no mention of differentiation either to age or stage of development, but the pedagogue focuses on the child's individual interests and needs.</p>	<p>Over 55% of interactions harness age-diversity in the group</p> <p>No evidence of forgoing the potential of age-diversity</p> <p>The highest proportion of interactions utilising age-diversity fall under the theme of 'teaching and learning child-initiated'.</p> <p>The lowest proportion of interactions harnessing age-diversity falls under the theme of 'supervision'.</p>
<p>(Two)</p> <p><b>Adult-led consistent multi-age practice</b></p>	<p>The narratives evidence adults assuming responsibility for and leading interactions with children.</p> <p>Planning and differentiation are emphasized, and it is consistently to children's stage of development rather than biological age.</p>	<p>No or minimal (1-2%) interactions that forgo the potential of multi-age groups.</p> <p>Interactions that harness age-diversity in the group are less than 55% of all observed interactions.</p> <p>The highest proportion of interactions harnessing age-diversity falls under the theme of 'care'.</p>
<p>(Three)</p> <p><b>Adult-centred inconsistent practice</b></p>	<p>Inconsistent interactions with regards to age-diversity: there is evidence of both harnessing and/or forgoing the potential inherent in multi-age groups.</p> <p>Differentiation is to both stage of development and biological age, and inconsistently applied for interactions under the five themes.</p> <p>The narratives describe an adult-centred approach where adults' interactions follow their own agendas.</p>	<p>'Supervision' and 'teaching and learning adult-led' themes account for the largest proportion of all observed interactions.</p> <p>Evidence of interactions that both harness and forgo the potential of age-diversity and there is minimum twice as much evidence of those that harness it.</p>
<p>(Four)</p> <p><b>'The same for all' practice</b></p>	<p>The narratives reflect expectation of 'the same' from everyone and blanket rules are applied.</p> <p>Pedagogues separate children by their ages for activities by which age homogeneous micro-groups are created.</p> <p>Planning and differentiation is to the three age bands in the group.</p>	<p>'Supervision' and 'teaching and learning adult-led' themes account for the largest proportion of all observed interactions.</p> <p>Evidence of interactions that both harness and forgo the potential of age-diversity and there is minimum twice as much of the observed interactions that forgo the potential of age-diversity.</p>

	The narratives reflect lack of respect for children's individual needs.	
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## Appendix 12 Thematic coding frame for the observational data

### CODING FRAME FOR STRUCTURED TABULAR CODING OF THE PEDAGOGUES' INTERACTIONS

DESCRIPTIVE CODES	INFERENCEAL CODES	THEMES	REPRESENTATION ACROSS THE CLUSTERS
Tidying up with children	Housekeeping	PREPARATION	CI3, CI4, CI2, CI1,
Tidying adult desk	Housekeeping		CI2, CI3, CI4
Fetching equipment from cupboard (adult decision)	Resourcing		CI1, CI2, CI3, CI4
Fetching equipment (on child's request)	Resourcing		
Asking assistant for resource/equipment	Resourcing		
Carrying equipment outside	Resourcing		CI1, CI2, CI3, CI4
'getting ready' transition between activities (adult decision)	Transitioning		CI3, CI4
'getting ready' transition between activities (child choice)	Transitioning		CI1, CI2, CI3
Setting up area for new purpose (i.e: sleep, lunch, snack)	Transitioning		CI1, CI2,
Changing shoes (indoor-outdoor), hanging up clothes	Transitioning		CI3, CI4
Choosing lunchtime helpers	Organising		CI3, CI4, CI2, CI1
Pairing children up – one older & one younger	Organising		CI3, CI4

Limiting/blocking access to play areas/activities	Organising		CI3, CI4
Seating children (decide where each child sits)	Organising		CI3, CI4

DESCRIPTIVE CODES	INFERENCEAL CODES	THEMES	REPRESENTATION ACROSS THE CLUSTERS
Offers alternative to child who has withdrawn from group activity	Differentiation	Teaching & Learning ADULT-LED	CI1, CI3,
Adjust activity to the child (paper folding)	Differentiation		CI1
Differentiate to cognitive ability (Logico game)	Differentiation		CI3
Differentiate to physical ability (outdoor game, indoor obstacle course)	Differentiation		CI2, CI3, CI4
Differentiate to lang, social, cogn stage (Puss in Boots, story/rhyme telling)	Differentiation		CI3, CI1, CI2
Sustained Shared Thinking	Sustaining children's engagement		CI1, CI2
Provide explanation	Sustaining children's engagement		CI1, CI2
Asks an open question	Sustaining children's engagement		CI2, CI1, CI3
Makes suggestion/gives an idea	Sustaining children's engagement		CI1, CI2, CI3

Leading whole group activities (circle-time, rehearsal) Leading circle time, the 'silent' game	Sustaining children's engagement		CI2, CI3, CI4
Showing ch how to do it (sand castle, outdoor bubble maker, boat folding, flag, paper bag, sea picture) Adult modelling/providing example	Sustaining children's engagement		CI2, CI1, CI3, CI4
Non-verbal support for reciting poem	Sustaining children's engagement		CI1, CI3
Giving children verbal prompts in end of year performance	Sustaining children's engagement		CI3, CI4
Showing ch how to do it (sand castle, outdoor bubble maker) Adult modelling	Sustaining children's engagement		CI2
Nodding as listening, asking for details, Active listening	Sustaining children's engagement		CI1, CI2
Reacting (affirmingly) to what the child is telling, Active listening	Sustaining children's engagement		CI1, CI3
Gives encouragement	Motivation		CI1, CI2, CI3
Praises the outcome of the child's engagement	Motivation		CI1, CI2, CI3
Praise efforts	Motivation		CI2, CI3, CI4
Providing challenge (climbing, sand building, squirrel wheel)	Motivation		CI1, CI2, CI3
Changing the direction of play	Evaluation		CI1 (+), CI4 (-)
Explain unacceptable behaviour to child (post incident)	Evaluation		CI2

Positive redirection, explaining behaviour expectations (preventing and incident)	Evaluation		CI1
facilitate self-evaluation	Evaluation		CI1
Giving feedback (what made the picture interesting, how the effort helps the child learn to swing)	Evaluation		CI1,CI2
Encouraging joint problem solving	Collaboration		CI1
Encourage joint decision making	Collaboration		CI1
Encouraging peer modelling	Collaboration		CI1, CI4
Encouraging peer support (novice-expert)	Collaboration		CI1
Separating the ages for certain activities (for oldest ch)	Reinforcing 'age' status		CI3, CI4
Tells the child what is expected of <a href="#">children leaving for school</a> - Age related expectations	Reinforcing 'age' status		CI4, CI3
Distinguishing between 'oldest'/youngest status	Reinforcing 'age' status		CI3, CI4
Expecting the same – know your birthday;	Attempts to homogenise		CI4
Adult choosing for children what to do	Attempts to homogenise		CI4
Expect the same outcome from all -craft activity	Attempts to homogenise		CI3, CI4
Micro groups (for PE, for music, visit to library))	Attempts to homogenise		CI3, CI4

DESCRIPTIVE CODES	INFERENCEAL CODES	THEMES	REPRESENTATION ACROSS THE CLUSTERS
Offering children ideas	Enabling children's engagement	T&L CHILD-INITIATED	CI1, CI2
Resourcing ch's play	Enabling children's engagement		CI1, CI2, CI3
In conversation with ch	Enabling children's engagement		CI1, CI2, CI3, CI4
SST	Enabling children's engagement		CI1, CI2, CI3
Helping ch gain entry to other ch's play	Enabling children's engagement		CI2, CI1
Supporting exploration in sand, with bugs	Enabling children's engagement		CI1, CI2, CI3
Differentiated cognitive support (for ch initiation)	Enabling children's engagement		CI1, CI2, CI3,
Diff-ed support for physical dev (for ch initiation)	Enabling children's engagement		CI1, CI3
Encourage peer modelling/support (drawing)	Encouraging Peer support		CI2, CI1, CI3
Children requesting peer support (hygiene)	Encouraging Peer support		CI1, CI2, CI4,
Encouraging conflict resolution between children	Encouraging Peer support		CI2, CI3
Encouraging finding ways to work together	Encouraging Peer support		CI1, CI2, CI3
Encouraging helping one another (sand castle building)	Encouraging Peer support		CI1, CI2, CI3



tuned in action to follow child's play direction	The 'visceral': Pedagogic tact/intuition/attunement		CI1
Tuned in action to redirect children's interaction	The 'visceral': Pedagogic tact/intuition/attunement		CI1
Interject to prevent unsolicited help	The 'visceral': Pedagogic tact/intuition/attunement		CI1, CI3
Noticing child's non-verbal message	The 'visceral': Pedagogic tact/intuition/attunement		CI1, CI3

<b>DESCRIPTIVE CODES</b>	<b>INFERENCEAL CODES</b>	<b>THEMES</b>	<b>REPRESENTATION ACROSS THE CLUSTERS</b>
Differ-ed hygiene support	Meeting physiological need	CARE	CI1, CI2, CI3, CI4
Diff-ed dressing support	Meeting physiological need		CI1, CI2, CI3, CI4
Differentiated sleep needs	Meeting physiological need		CI1, CI2, CI3
Serving food to children	Meeting physiological need		CI2, CI3, CI4
Clearing food away	Meeting physiological need		CI1, CI2, CI3, CI4
Helping ch with managing food/eating	Meeting physiological need		CI2, CI3, CI4
Reinforcing rules (blanket rule for all) (vest for everyone for outside play)	Meeting physiological need		CI4, CI3
Praise	Meeting emotional need/well-being		CI2, CI3, CI4
Giving the ch his/her comforter	Meeting emotional need/well-being		CI1, CI2, CI3
Providing comfort (stroke, kiss, sit on lap)	Meeting emotional need/well-being		CI1, CI2, CI3, CI4
Protecting from unsolicited help	Meeting emotional need/well-being		CI1

Calming upset ch down	Meeting emotional need/well-being		CI2, CI1, CI3, CI4
Asking one child to help the other (tooth brushing, dressing, serving food)	Utilising peer support		CI1, CI2, CI3
Praising ch for looking after one another	Utilising peer support		CI1, CI2, CI3

DESCRIPTIVE CODES	INFERENTIAL CODES	THEMES	REPRESENTATION ACROSS THE CLUSTERS
		<b>SUPERVISION</b>	
Watching over children but not interfering or engaging	Observing & reserving		CI3, CI2, CI1, CI4
allowing children to resolve conflict themselves, watching from a distance	Observing & reserving		CI2
Attending to management task while in the room with ch Multi-tasking	Observing & reserving		CI3, CI1
sorting misbehaviour out without explanation	Managing behaviour		CI4, CI3,
Maintaining orderliness while keeping an eye on children (tidying, neatening, reminding of behaviour rules)	Managing behaviour		CI3, CI4
Handing child equipment but no real follow up comment or	Resourcing		CI1, CI2, CI3

connecting to what the child is doing			
Replenishing (bubble mixture, paper, paint)	Resourcing		CI2, CI3, CI4
Walking around checking what children are doing	Hover		CI2, CI3, CI4
Brief comment to children, 'touching in' then moving on (CI2)	Hover		CI2, CI1
Chatting to children casually and briefly then moving on	Hover		CI2, CI3
Walking with child, holding hands, among activities, watching	Hover		CI3, CI2
Reminding children to keep play areas tidy (not specific)	Hover		CI4, CI3

## Appendix 13 Demographic Questionnaire for study participants

Faculty of Education and Humanities, Early Years Division

Boughton Green Road, Northampton, NN2 7AL, UK

### **DEMOGRÁFIAI INFORMÁCIÓ A PEDAGÓGUSOKTÓL**

**A kutatás címe:** A vegyes életkorú magyar óvodai csoportok sajátosságainak vizsgálata

**Kutató:** Teszenyi Eleonóra– PhD hallgató

**Óvoda neve:**

**Óvodai csoport:**

*Kérem válaszoljon az alábbi kérdésekre.*

1.	Mi az életkora?	<input type="checkbox"/> 18-25 <input type="checkbox"/> 26-35 <input type="checkbox"/> 36-45 <input type="checkbox"/> 46 -55 <input type="checkbox"/> 56 és fölötte
2.	Jelezze a nemét?	<input type="checkbox"/> Férfi <input type="checkbox"/> Nő <input type="checkbox"/> Nem szeretném megmondani
3.	Hány éves óvoda pedagógusi tapasztalata van?	<input type="text"/> év
4.	Ebből hány évet dolgozott vegyes életkorú csoportokkal?	<input type="text"/> év
5.	Mi a végzettsége?	
6.	Vett- e részt olyan képzésben ami a vegyes életkorú csoportokra készíti fel?	<input type="checkbox"/> Igen <input type="checkbox"/> Nem
7.	Hogyan került vegyes életkorú csoportba?	<input type="checkbox"/> Én választottam <input type="checkbox"/> Beosztottak
8.	Szülőként Ön megélte a vegyes életkorú csoportot a gyermekével?	<input type="checkbox"/> Igen <input type="checkbox"/> Nem

		<input type="checkbox"/> Nincs gyermekem  <i>Ha a válasza 'igen' volt akkor menjen a 9-es kérdéshez. Ha a válasza 'nem' volt, akkor ugorjon 10-es kérdéshez.</i>
9.	Mi volt a véleménye akkor róla?	
10.	Ha választási lehetősége lenne, milyen csoportban szeretne dolgozni?	<input type="checkbox"/> Azonos életkorú csoportban  <input type="checkbox"/> Vegyes életkorú csoportban  <input type="checkbox"/> Nem tudom eldönteni  <input type="checkbox"/> Mindegy milyen csoportban dolgozom
11.	Indokolja meg röviden a választát.	

Appendix 14 Summary of the demographic information of observed participants in their practice groups

<b>Family-centred relational</b>	Qualification	Pre/In-Service training	Age	Practice experience	Experience in MA groups	Appointment
P4	No response	yes	46-55 yrs	33	10	assigned
P16	Further Ed (L5)	No	46-55 yrs	35	23	assigned
P21	Further Ed (L5)	No	46-55 yrs	30	24	assigned
average				32.6 yrs	19	
<b>Adult-led intentional</b>	Qualification	Pre/In-Service training	Age	Practice experience	Experience in MA groups	Appointment
P10	BA Hons (L6)	No	26-35 yrs	12	12	assigned
P19	Further Ed (L5)	No	46-55 yrs	37	23	Chose
P22	Further Ed (L5)	No	56+ yrs	40	30	Assigned
				29.6	21.6	
<b>Adult-centred incidental</b>	Qualification	Pre/In-Service training	Age	Practice experience	Experience in MA groups	Appointment
P3	BA Hons (L6)	No	18-25yrs	4	4	chose
P5	BA Hons (L6)	No	46-55yrs	18	17	chose
P6	BA Hons (L6)	No	36-45yrs	6	6	chose
P8	BA Hons (L6)	No	46-55yrs	7	7	assigned
P11	Further Ed (L5)	yes	46-55yrs	27	24	assigned
P13	BA Hons (L6)	no	46-55yrs	35	30	chose
P24	BA Hons (L6)	No	46-55yrs	30	10	Chose
P26	BA Hons (L6)	No	36-45yrs	6	6	Assigned
P28	BA Hons (L6)	No	26-35yrs	4	4	No response
				15.2	12	
<b>Confused Homogenising</b>	Qualification	Pre/In-Service training	Age	Practice experience	Experience in MA groups	Appointment
P7	Further Ed (L5)	No	56+ yrs	37	20	Assigned

P14	BA Hons (L6)	No	18-25yrs	3	3	Assigned
P15	BA Hons (L6)	No	36-45yrs	22	22	Assigned
P17	BA Hons (L6)	No	36-45yrs	6	5	Assigned
P20	BA Hons (L6)	No	18-25yrs	1	1	Assigned
P23	BA Hons (L6)	No	36-45yrs	22	18	Assigned
P27	BA Hons (L6)	No	18-25yrs	2	2	Chose
				13.2	10.1	

APPENDIX 15 Bringing together the clusters and factors

The two sets of findings were brought together using this joint display (Fetters, 2020) and drawing meta-inferences from the characteristics that were identified in the clusters as well as the factors.

<b>PRACTICE CLUSTERS</b>	<b>+</b> <b>FACTORS/ SHARED VIEWPOINTS</b>	<b>=</b> <b>MULTIPLE REALITIES OF MULTI- AGE PRACTICE</b>
'Personalised MA practice' that follows the child and harnesses the potential inherent in age-diverse groups	Factors 1 'A family model' and 3 'The type of group is of no significance' are represented	FAMILY-CENTRED RELATIONAL PRACTICE
<p><b>CLUSTER 1</b> (P4, P16, P21)</p> <ul style="list-style-type: none"> <li>In-depth knowledge of the children and families and children's prior experiences, which enabled a <b>personalised</b> approach, where support is <b>individually tailored</b> according to children's unique needs and stages of development.</li> <li>Positive redirection is employed, and children are provided with</li> </ul>	<ul style="list-style-type: none"> <li>P4 shares the 'family model' view (Factor1)</li> <li>P16 shared the view with the managers that the type of group organisation is of no significance (Factor3)</li> <li>P21 did not load onto any of the factors (confounding sort) and statistically closest to the 'family model' shared view (Factor1)</li> </ul> <p><u>F1</u>: represented the view that age-diverse groups operated <b>like a big family</b>, where</p>	<ul style="list-style-type: none"> <li>✓ family-like atmosphere</li> <li>✓ mix of ages and needs draws on pedagogues' varied skills of caring, nurturing and educating</li> <li>✓ focus on the learning processes rather than the stages of development</li> </ul>



<p>opportunities to self-evaluate before praise is given</p> <ul style="list-style-type: none"> <li>• Adults' engagement with children <b>shows attunement and intuition, a visceral quality</b> to MA interactions, which affords pedagogically tactful interactions.</li> <li>• <b>Age-diversity is consistently utilised:</b> all <b>children's contributions are valued and encouraged</b> in care and preparatory activities (regardless of their biological age), and children are provided with opportunities and responsibilities to <b>lead their own play</b> in multi-age contexts.</li> <li>• <b>Learning through joint problem solving, negotiation and collaboration between peers is supported</b> and encouraged.</li> </ul>	<p>teaching <b>utilised the "naturally" occurring learning processes</b> and <b>peer support between</b> children. Pedagogues <b>started from the child</b> and followed their lead.</p> <p>F3: attributed the greatest significance to a <b>child-centred curriculum</b> provided by a <b>skilled workforce</b>, which rendered the two main organisational type insignificant. However, multi-and same-age groups did provide choice for parents.</p>	<ul style="list-style-type: none"> <li>✓ follow individual needs and interests - personalisation</li> <li>✓ pedagogues utilised peer support and modelling</li> <li>✓ build on children's prior experiences (cultural capital)</li> <li>✓ curriculum is child-centred and tailored to individuals</li> <li>✓ potential inherent in multi-age groups consistently harnessed</li> <li>✓ Inter-subjective-action between adults and children</li> </ul>
<p><b>'Adult-led' MA practice</b> that harnesses the potential inherent in age-diverse groups</p>	<p>Factors 1 'A family model' and 2 'It's all down to the pedagogue' are represented in this cluster of practice.</p>	<p><b>ADULT-LED INTENTIONAL PRACTICE</b></p>

**CLUSTER 2**

(P10, P19, P22)

- Assumed responsibility for 'teaching' and leading children's learning
- Differentiation consistently according to the children's stage of development and not their biological age.
- Peer support is most encouraged in interpersonal care interactions.
- Conscious efforts is made to utilise the groups' age-diversity as a teaching resource and multi-age collaboration is encouraged.
- Supervisory and preparatory interactions provide children with space to practice independence and manage their own multi-age interactions.

- P10 shares the view that 'it's all down to the pedagogue' (Factor2)
- P19 shares the 'family model' view captured in Factor1
- P22 did not load onto any of the factors (confounding sort) and statistically closest to the 'family model' view (Factor1)

F1: represented the view that age-diverse groups operated like a big family, where teaching utilised the "naturally" occurring learning processes and peer support between children. Pedagogues started from the child and followed their lead.

F2: of the view that pedagogues' professional skills were the key and secured the success of teaching and learning in multi-age groups. Although planning, organisation and thinking ahead was a greater challenge, through appropriate differentiation, they took responsibility for each child's individual progress.

- ✓ differentiation to individual needs and stages of development
- ✓ adults assumed greater responsibility in the teaching and learning processes via planning and organisation
- ✓ less reliance on the reciprocal learning processes between children
- ✓ family model
- ✓ harness the potential inherent in the groups' age-diversity in interpersonal care the most
- ✓ trans-action between the adults and children

<p><b>'Adult-centred' inconsistent MA practice</b> that both harnesses and forgoes the potential inherent in age-diverse groups</p>	<p>Factors 1 'A family model' and 2 'It's all down to the pedagogue' are represented</p>	<p><b>ADULT-CENTRED INCIDENTAL PRACTICE</b></p>
<p><b>CLUSTER 3</b> (P3, P5, P6, P8, P11, P13, P24, P26, P28)</p> <ul style="list-style-type: none"> <li>Both the 'developmental stage over biological age' and 'age over stage' approaches are employed.</li> <li>Inconsistency in how age-heterogeneity is handled, which breeds age-related expectations and reinforcing 'oldest' vs 'youngest' status. Both a 'same for all' and more individualised approaches are followed.</li> <li>Multi-age groups are frequently divided into their three component age groups (3-4yrs; 4-5yrs; 5-6+yrs), which denies or controls access to activities, resources and spaces for those children who are not positioned in the age-wise privileged age groups (typically oldest).</li> </ul>	<ul style="list-style-type: none"> <li>P6, P8 share the 'family model' view (Factor1)</li> <li>P3 shares the view that 'its' all down to the pedagogue' (Factor2)</li> <li>Six out of the nine pedagogues did not share any of the views captured in the four factors (P25 was a null sort, P5, 11, 13, 24, 26 and 28 were confounding)</li> </ul> <p><u>F1:</u> represented the view that age-diverse groups operated like a big family, where teaching utilised the "naturally" occurring learning processes and peer support between children. Pedagogues started from the child and followed their lead.</p> <p><u>F2:</u> of the view that pedagogues' professional skills were the key and secured the success of teaching and learning in multi-age groups. Although planning, organisation and thinking</p>	<ul style="list-style-type: none"> <li>✓ inconsistencies in their approach to multi-agedness</li> <li>✓ Differentiation to both developmental stage and biological age</li> <li>✓ age-related expectations and reinforcing 'oldest' and/or 'youngest' status</li> <li>✓ divided into their three component micro-groups for certain activities</li> <li>✓ peer support and conflict resolution were encouraged in some instances, and they frequently reflected prioritising biological age</li> </ul>

<ul style="list-style-type: none"> <li>The deliberate mixing of the ages- in a 'one older-one younger' pattern- in fact, <b>separates children.</b></li> <li><b>Adult-centred</b> practice follows the adults' agendas</li> </ul>	<p>ahead was a greater challenge, through appropriate <b>differentiation</b> they took responsibility for each child's individual progress.</p>	<ul style="list-style-type: none"> <li>✓ the potential inherent in age-diversity was both harnessed and forgone.</li> <li>✓ Intra-personal-action between adults and children</li> </ul>
<p><b>A 'same for all' approach</b> that forgoes the potential inherent in age-diverse groups and attempts to homogenise</p>	<p>The 'A family model' (F1), 'It's all down to the pedagogue' (F2) and 'Lack of training, knowledge and confidence' (F4) views are represented</p>	<p><b>CONFUSED AND HOMOGENISING PRACTICE</b></p>
<p><b>CLUSTER 4</b> (P7, P14, P15, P17, P20, P23, P27)</p> <ul style="list-style-type: none"> <li><b>Attempts to homogenise</b> multi-age groups, which manifests in <b>splitting them into their age-homogenous</b> micro-groups of 3-4 year olds, 4-5 year olds, 5-6+ year olds, and leads to: <ul style="list-style-type: none"> <li><b>lack of differentiation</b> within the <b>micro-groups</b></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><u>P7</u> and <u>P20</u> shares the 'family model' view (Factor1)</li> <li><u>P17</u> and <u>P23</u> share the view that 'it's all down to the pedagogue' (Factor2)</li> <li><u>P14</u> and <u>P17</u> share the view that there is 'lack of training, knowledge and confidence' when practising with multi-age groups (Factor4)</li> </ul>	<ul style="list-style-type: none"> <li>Lack of training, knowledge and confidence reported</li> <li>Differentiation seen as a greater challenge and workload</li> <li>'same for all' approach attempt to homogenise</li> <li>use of age-homogeneous micro-groups</li> </ul>

<ul style="list-style-type: none"> <li>○ reinforcing age-related status within the group: 'the oldest' vs 'the youngest'</li> <li>○ holding age related <b>expectations</b> of children, the <b>same from everyone</b> in their micro-groups</li> <li>○ adopting a <b>'same for all' approach particularly evident in interpersonal care</b> related interaction.</li> <li>○ <b>Removing opportunities for peer support</b></li> <li>• <b>Lack of evidence to harness the potential</b> inherent in multi-age groups</li> <li>• Oldest children's play spaces and resources are protected from younger peers.</li> <li>• <b>Keeping 'order'</b> (as understood by the adults) is a priority</li> <li>• Supervisory interactions aim to: <ul style="list-style-type: none"> <li>○ <b>reinforce rules</b> and expected codes of conduct,</li> <li>○ <b>maintain order</b> and neatness within the environment,</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• P15 did not share any of the views, a null sort; statistically closest to the 'it's all down to the pedagogue' view (F2) and completely opposite to both 'the type of organisation is of no significance' (F3) and the 'family model' views (F1)</li> </ul> <p><u>F1</u>: represented the view that age-diverse groups operated like a big family, where teaching utilised the "naturally" occurring learning processes and peer support between children. Pedagogues started from the child and followed their lead.</p> <p><u>F2</u>: of the view that pedagogues' professional skills were the key and secured the success of teaching and learning in multi-age groups. Although <b>planning, organisation and thinking ahead was a greater challenge</b>, through appropriate differentiation they took responsibility for each child's individual progress.</p>	<ul style="list-style-type: none"> <li>• lack of sensitivity to individual needs</li> <li>• lack of opportunities for peer support and cross-age interactions</li> <li>• Keeping 'order'</li> <li>• Potential of age-diversity mostly forgone</li> <li>• Inter-reaction between children and adults</li> </ul>
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<ul style="list-style-type: none"><li>○ ensure children's neat appearance</li></ul>	<p>F4: reflected a lack of knowledge, confidence and training in multi-age practice. Planning and differentiation proved to be a challenge and presented a greater workload, which drew pedagogues into separating multi-age groups into age-homogenous micro groups to manage daily activities.</p>	
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