



The impact of Early Childhood Education and Care on cognitive and non-cognitive development. A review of European studies.

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Introduction

This paper provides an overview of existing studies on children's cognitive and non-cognitive acquisitions through participation in ECEC services and their importance to social development, successful transitions to school and social inclusion. The paper analyses the findings of recent academic research carried out in EU member states and current international trends in ECEC policies. While this paper provides evidence showing that high quality ECEC matters for children's cognitive and social development with potentially long lasting effects on their school careers, it also highlights pitfalls and limitations of this strand of research that tends to rely predominantly on the human capital paradigm.

Early childhood education and care has gained, since the Council Recommendations on Childcare in 1992 (92/241/EEC), an increasingly prominent position on European policy agendas. Initially, the main rationale for investing in ECEC was driven by socio-economic concerns about employment, competitiveness and gender equality. Most EU level action was focused on increasing the *quantity* of childcare places in order to enable parents (mainly mothers) to join the labour market. In more recent times, EU policies have been accompanied by a growing attention to children's rights, equal educational opportunities and social inclusion (Commission of the European Communities, 2006a & 2006b; Council of the European Union, 2010). By acknowledging the social and educational value of ECEC, recent EU policies have moved beyond the issue of quantitative expansion of provision to encompass at their core the issue of the *quality* of ECEC services as a necessary condition for the promotion of children's learning, personal fulfilment and social development (European Commission, 2011). There is a consensus among European policy-makers that a *generalised equitable access to high quality ECEC services* can make a substantial contribution to the success of the EU 2020 strategy (European Commission, 2010) with particular reference to the achievement of the headline targets concerning the reduction of early school leaving and of the number of people living at risk of poverty and social exclusion (Council of the European Union, 2011).

While there appears to be a broad consensus on the importance of ECEC, most of the evidence on which policies are based rely on longitudinal studies carried out in the U.S. suggesting that investing in high quality pre-primary education is expected to bring about the highest rates of returns over the whole



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lifelong learning cycle, especially to those children who are the most disadvantaged (Heckman & Masterov, 2007). In recent times, many experts have criticised the way in which the findings of such studies – carried out in the context of early intervention programmes targeted to disadvantaged children – have been generalised to European contexts, where publicly funded large scale provision is more generally available and rooted in longstanding pedagogical traditions (for a detailed discussion see Penn, 2011). Therefore the need for research that takes into account the heterogeneous nature of ECEC in a broader European context started to emerge. In this perspective, the aim of this paper is to provide an overview of research findings from longitudinal studies carried out in EU member states and complement these with the findings of qualitative research studies that look at educational processes and pedagogies. Evidence from longitudinal studies may provide political arguments for investing in early childhood education and in promoting quality of provisions. In addition, qualitative research gives a deeper insight into pedagogical questions and educational processes that may contribute to the reaching of the desired outcomes and therefore provide a better view on what *quality* may mean in contexts of socio-economic and ethnic diversity.

Research findings

Positive effects on cognitive and non-cognitive development, but only of high quality

Studies on long-term effects of ECEC on children's cognitive and non-cognitive outcomes (with special reference to children from disadvantaged backgrounds) exist for a number of EU countries, including UK, France, Germany, Sweden, Norway, Netherlands and Italy.

Most longitudinal studies highlight that attendance of high quality ECEC programs has long-lasting effects on *children's cognitive development* (Andersson, 1992; Broberg et al. 1997; Sylva et al., 2004; Melhuish et al., 2006; Sammons et al. 2007; Brilli et al., 2011; Felfe & Lalive, 2011). By promoting children's overall development, ECEC enhances fundamental cognitive abilities (verbal abilities and scientific thinking) that facilitate further acquisition of domain-specific skills related to language and mathematics. If certain conditions are provided – such as an early start, high quality services and effective primary school education – the positive effects of ECEC attendance can potentially persist until the teen age. However, research findings also highlight that none of the conditions mentioned above can, on their own, determine children's academic achievements and educational success.

Along the same line, most longitudinal studies highlight that attending ECEC programs has long-lasting effects on *children's non-cognitive development* as well (Andersson, 1992; Sylva et al., 2004; Melhuish et al., 2006; Sammons et al. 2007; Del Boca et al., 2010; Felfe & Lalive, 2011): their findings confirm that early experiences of socialisation with peers in formal settings promote pro-social behaviour, self regulation and autonomy. If early socialisation experiences are carried out in settings providing high



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quality care and education, the beneficial effects on children's social and emotional development might persist until the teen age, although other factors – such as quality of the home learning environment and further school experiences – also play important roles. As already mentioned, none of these factors taken in isolation can account for long lasting positive effects on children's social and emotional development: it is rather the combination of experiences over time that matters.

Some studies show that ECEC attendance did not have the expected significant impact on children's cognitive acquisitions. These studies were carried out in contexts in which ECEC provisions tend to be very diverse and highly fragmented with a possible negative impact on quality (Caille, 2001; Driessen, 2004) and in some cases their findings refer specifically to the effects of targeted programs for disadvantaged children (Veen et al. 2000-2002; Goede & Reezigt, 2001). This may suggest that quality is less the result of a specific program oriented towards cognitive development (e.g. Kaleidoscoop and Piramide) than a more generic aspect of ECEC.

Similarly, some studies (Veen et al., 2000-2002; Driessen, 2004; Datta Gupta & Simonsen, 2007) did not associate ECEC with positive social and emotional development. However, given the different contexts in which the studies took place and the variety of service provision investigated (programs targeted to ethnic minority children, centre-based provision and family day care) the only further consideration that could be made is that *comprehensive and consistent systems of high quality* are essential conditions to yield the expected beneficial results on a population level.

Effects are stronger for children in poverty and ethnic minority children in universal provisions

All studies focusing on sub-samples of vulnerable children report that *high quality ECEC benefits especially the most disadvantaged children*, whose gains in cognitive and socio-emotional development are higher than for 'average' children (Brilli et al. 2011; Felfe & Lalive, 2011). From the findings of these studies it appears that vulnerable children benefit the most from ECEC when it is provided in contexts of social mix (Sylva, 2004; van Tuijl and Leseman, 2007; Havnes and Mogstad, 2011). Two studies have also found that ECEC intervention reduces the risk of developing special educational needs (Sammons et al. 2003; Melhuish et al., 2006). *These results suggest that services addressing a diverse population, and thus structural services for all, in which special attention is geared towards disadvantaged children may be preferred over targeted provisions.*



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Positive effects on school career

Most studies highlight that participation in ECEC programs – by enhancing children’s cognitive and social competences – facilitate the transition into primary school, especially for those children who come from a disadvantaged background (ethnic minority and/or low-income families). Research findings suggest that not only did children who attended ECEC programs adjust better to formal learning within school setting (Sammons et al. 2003; Sylva et al. 2004; Melhuish, 2006; Lanfranchi et al., 2002-2003) but also that the advantages in educational attainment might persist until the end of primary school, provided that ECEC was of high quality (Sammons et al. 2007; Felfe & Lalive 2011). Similarly, studies carried out on children’s school placement and further educational chances (Spiess et al., 2003; Havnes and Mogstad, 2011) found that benefits of ECEC attendance are particularly salient to the school career of disadvantaged children, proving the substantial contribution made by ECEC to their educational opportunities.

However, from the analysis of findings of all these studies it also emerges that – despite the important contribution made by ECEC to children’s cognitive and social development – children’s outcomes are strongly influenced by their socio-economic backgrounds. Therefore the impact of broader socio-economic factors associated with welfare policies should not be underestimated. It is no coincidence that the effects of family background on children’s educational attainment tend to be more limited in Scandinavian countries (Andersson, 1992; Broberg et al., 1997; Havnes and Mogstad, 2011) where universally accessible childcare is provided and SES differences in population are less marked than elsewhere (EPPI Centre, 2004). This leads to the conclusion that *well-funded, integrated socio-educational ECEC services, in order to succeed in improving the life chances of children and families at risk, need to be closely linked to labour, health and social policies that promote a more equal redistribution of resources by targeting extra funding toward disadvantaged neighbourhoods* (UNICEF Innocenti, 2008).

While the findings of existing studies do not allow speculation on the ideal age for ECEC enrolment and on the effectiveness of compulsory school provision, relevant information on ECEC quality is provided especially by those studies that combine quantitative and qualitative methodologies (a more detailed discussion will be reported in the following section).

The issue of quality

All of the studies analysed converge to say that quality of ECEC provision is a crucial factor for promoting children’s cognitive and social development and, in turn, for enhancing their educational chances in the long term. As these aspects are particularly salient to those children who are living in conditions of socio-



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economic disadvantage, deepening the discussion on the characteristics of ECEC provision that are associated with good quality becomes particularly important. International reports concur that there is a limited series of structural quality criteria that need to be fulfilled (European Childcare Network, 1996; EPPE, 2004; Care Work in Europe, 2007; Eurydice, 2009; OECD, 2006; Unicef Innocenti, 2008; :

- Staff qualifications (at least half of the staff should have a bachelors' level degree (ISCED5)
- Adult-child ratio
- Group size
- Universal provisions (mixed groups) obtain better results than targeted provisions
- Quality guidelines and monitoring by local or central governments
- Working conditions for staff (ideally paid at teachers' level) that ensure low turn-over rates

By focusing more specifically on qualitative studies that explore pedagogical approaches and educational processes, certain guiding principles for encouraging quality in ECEC settings can be identified as follows:

- Adopt an integrated approach that combines education and care for nurturing the holistic development of children's potentialities through many symbolic languages (Mantovani, 2007), rather than a narrow curriculum focusing on cognitive development;
- Elaborate educational practices that value children's everyday experiences and respect the specificity of their learning strategies by sustaining their curiosity, engagement and well-being (Jensen, 2011; Laevers, 2011);
- Build a balanced curriculum that combines teacher-initiated and child-initiated activities by providing a variety of resources for play according to children's interests and by valuing play as a form of meaning-making that leads to knowledge co-construction (Pramling Samuelsson & Carlsson, 2008);
- Sustain interactions among children as well as adult's responsive interactions to children's diverse needs that are fundamental for developing children's sense of identity and belonging (ISSA, 2010); Build strong partnerships among educators, families and local communities that allow the complex needs of children and families to be better understood and addressed through responsive practices, especially in contexts of diversity (Broadhead et al., 2008);
- Nurture a strong ethos that strives for inclusion, respects diversity and values democracy: educational curricula should be negotiated with children, parents, professionals and local communities whose voices, opinions and perspectives are taken into account (DECET & ISSA 2011; Vandebroek, 2007);
- Promote staff's initial preparation and continuing professional development initiatives that enhance practitioners' collective reflectivity and innovation of practices (Urban, Vandebroek et al., 2011)
- Document children's experiences in ECEC settings and engage different stakeholders – including



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children – in discussions for fostering the social and cultural growth of ECEC services at the local level (Moss, 2011; Mantovani, 2007);

- Advocate for ECEC policies that recognise ECEC as a right for all children allowing them to experience diversity and to actively participate in the life of their communities (Moss, 2011).

From the analysis of findings of both quantitative and qualitative studies it can be concluded that – whereas it is commonly acknowledged that high quality ECEC provides a solid foundation for children’s future educational achievements and social development – the processes involved in the definition of what constitutes quality may differ according to the broader socio-cultural and political contexts in which services operate (for a more detailed discussion refer to NESSE, 2009). The successful pedagogical approaches and educational experiences developed in many European countries tell us that ECEC quality is more the result of a participatory process that involves ongoing negotiation with all stakeholders – children, parents, practitioners, local communities and administrators – than a measurable outcome that can be predetermined by scientific evidence (Vandenbroeck, *forthcoming*).

Concluding remarks

This paper analysed the findings of existing studies from EU member states on the impact of ECEC participation on children’s cognitive and non-cognitive development, focusing in particular on the contribution made by such services to successful school transition and social inclusion for children from poor families and children from ethnic minorities. The analysis of findings deriving from longitudinal – mainly quantitative – studies on children’s outcomes was complemented with the discussion of findings from qualitative studies focusing on educational processes and pedagogical approaches. All studies reviewed in this paper are rooted Europe, in various disciplinary fields – education, psychology, economy and sociology. As these studies are carried out in contexts where ECEC systems vary substantially one from another, generalisations of findings should be considered with caution. It should also be noted that the evidence-based research analysed in this paper in relation to children’s outcomes mainly relies on one research paradigm: the paradigm of *child-centred social investment*. This paradigm is rooted in ECEC policy agendas typical of English-speaking countries with a liberal welfare state and so are the research perspectives explored by such studies. It should therefore be acknowledged that evidence-based research on the impact of ECEC on children’s development tends to marginalise the wealth of knowledge developed by educational research generated within European countries that have invested in ECEC as a public good within a rights-based framework. In this paper the insights provided by the latter research studies have been briefly discussed within the section on ECEC quality.

Remarkably, the findings of evidence-based research analysed in this paper highlight that in those



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countries where long-term investments in ECEC were driven by children's rights rationales, children gained the most from participating in ECEC programs. This is due to the high quality of services in a long-standing tradition of ECEC as a universal public good and grounded in participatory pedagogical approaches. It could therefore be concluded that the shortcoming of framing educational research within a human capital paradigm is to construct children in instrumentalist terms as profitable assets (Lister, 2007) – rather than considering them as citizens and subjects of rights – while the benefits of ECEC may be more related to children's democratic participation – and contribution – to the social and cultural life of their communities (Dalhberg & Moss, 2005; Kjørholt & Qvortrup, 2012). The risk of using human capital arguments underpinning economic rationales for investing in ECEC is therefore to dismiss important elements that are essential conditions for ECEC quality in many European countries – such as early childhood pedagogical approaches and children's democratic participation. This might in turn induce counter-productive effects such as, for example, the schoolification of ECEC (Pramling Samuelsson & Sheridan, 2010; Jensen, Brostrom & Hensen, 2010) and marginalisation of those children and families that are most at risk of social exclusion (Hübenthal & Ifland, 2011). Another major pitfall of child-centred social investment approaches is to consider that ECEC might be, on its own, a solution to the poverty that stands at the basis of children's disadvantage. As showed by many studies, ECEC has an important role to play in these regards, but only if it is embedded in strong welfare state policies across many sectors and if it is accompanied by a wider cultural and political commitment to democracy, rights, solidarity and equality (OECD, 2006).





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