

A Transdisciplinary Approach to Research on Early Childhood Education

There is much debate on early childhood education in research, politics, and society at large. Furthermore, early childhood education research and policy have become increasingly complex and multidimensional. Nonetheless, transdisciplinary research frameworks are still scarce. This report gives insights into a project that used a transdisciplinary approach, outlining its conceptualization and its potential for the definition and analysis of issues that transcend traditional boundaries between academic disciplines, academic and nonacademic knowledge production, and different domains of society.

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The Transdisciplinary Context of Education in Early Childhood

The past decades have seen a growing interest in early childhood education throughout the world. Although it is well established that education is a central pillar of any modern society and an essential ingredient of social well-being and economic prosperity, the insight that education should begin in the earliest years of life is still relatively young. As research has shown, early childhood is foundational for a broad range of human abilities and is a phase of increased sensitivity to environmental influences. During sensitive periods genetic dispositions and individual experiences interactively shape the development of neural circuits which constitute the functional architecture of the brain (Knudsen et al. 2006). These neural circuits mediate cognitive and socio-emotional skills, and they are particularly plastic early in life. Thus researchers have argued that children should acquire a range of skills early in life, long before formal schooling begins, because early mastery of skills facilitates learning at later ages and also makes learning more likely to continue (Heckman 2006). The awareness of the critical importance of early educational experience for the later development of a child has emerged mainly from research in developmental psychology and neuroscience. However, further academic disciplines such as educational and political sciences, economics, sociology, and history have also been concerned with a wide variety of aspects of early childhood education and have contributed to an expanding field of study.

In parallel, early childhood education has become a subject of debate in politics and civil society at large, and recent developments in policy making have transformed the landscapes and scopes of early education sectors in many countries (e.g., Burger 2016). Governments have increasingly invested in early childhood education

services to expand access for children and to develop more coherent and coordinated policies for early childhood development. Furthermore, governments seek to tackle a range of additional societal challenges through the provision of early childhood education. For instance, they aim to reduce child poverty and educational disadvantage, promote children's health, and counteract social exclusion of immigrant children. They also aim to address demographic challenges such as decreasing fertility rates and population ageing. In addition, they intend to facilitate mothers' labor force participation and promote gender equality, which includes the reconciliation of work and private life on an equitable basis for women and men (OECD 2006). In short, early childhood education policies have become increasingly complex and multidimensional. Besides, early childhood education sectors involve many different stakeholders, including national and local education authorities, departments of social affairs, the health sector, and public and private service providers. In such a context, research should adopt a combined inter- and transdisciplinary approach if it seeks to advance theory and to contribute to practical progress and/or policy change at once. Such an approach can provide a systematic and comprehensive theoretical framework for the definition and analysis of problems and challenges in a given field (Rosenfield 1992), in that it can integrate concepts and methods from different academic disciplines (interdisciplinary cooperation; see Smith

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2007) as well as questions, perspectives and priorities of different stakeholders, including policy-makers and practitioners (transdisciplinary cooperation).

My research project used such an approach to address a two-fold objective: 1. to enhance our theoretical understanding of the role that early childhood education plays for child development and for society at large; 2. to contribute to the practical advancement of effective early childhood education policies. To address this double objective, the project combined methods and paradigms from multiple disciplines and took into account societal developments as well as legal and cultural norms in the analysis (interdisciplinarity). In addition, the project integrated scientific and nonscientific knowledge and aimed to contribute to both scholarly and political debates on early childhood education (transdisciplinarity). In sum, the project was designed in response to an open question in the scientific debate and to a challenge facing policy-makers – notably, how early childhood education can be devised and used to support child development, alleviate poverty, and reduce educational disadvantage.

Developments in Politics and Research Objectives

The inter- and transdisciplinary project described here originated within the political context of the *Education for All* movement, an international commitment to provide basic education for all children, launched in 1990 by several UN Organizations and the World Bank, and coordinated and monitored by the United Nations Educational, Scientific and Cultural Organization (UNESCO). Building on the *Universal Declaration of Human Rights* and the *Convention on the Rights of the Child*, the international community reaffirmed the notion of education as a fundamental human right, recognized that universal education is the key to sustainable de-

velopment and social justice, and committed itself to the attainment of six education goals to meet the basic learning needs of every child. The first of these goals was to expand and improve comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children (UNESCO 2007). My research examined three major questions related to the realization of this goal. First, how has early childhood education evolved in Western societies? Second, to what extent is early childhood education accessible for all children regardless of family background characteristics? Third, to what extent does early childhood education respond to children's learning needs and, thus, promote their development?

Complementarity and Interdisciplinary Integration of Scientific Disciplines and Methods

Situated conceptually at the juncture between educational science, sociology, psychology, and history, the project applied a range of methods, both qualitative and quantitative. Drawing on multiple disciplines and methods means acknowledging that different disciplines and techniques have specific advantages and limitations (depth versus breadth, singularity versus generalizability, etc.) and that the selection and combination of disciplines and methods should be determined by the questions and problems being addressed (Lamont and Swidler 2014). Accordingly, given the questions of the project, I employed *comparative-historical methods* mainly to shed light on the sociopolitical conditions that have shaped the historical development of early childhood education policies and practices. Analysis of historical primary sources as well as secondary sources from social science research showed, for instance, that transnational connections and transfer of knowledge between countries such as France and the United States were important determinants of developments in policy-making, serving to facili-

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tate the expansion of early childhood care and education facilities in the United States. This analysis also highlighted that discrepancies in the use and funding of early childhood care and education facilities between countries can be traced to disparities in the main purposes and administration of facilities. For instance, in liberal welfare states such as the United States public subsidies for early childhood facilities have consistently been restricted to low-income families, whereas in countries like France the activities of voluntary and philanthropic organizations involved in childcare and early education have been subsidized publicly and regulated by the central state's government to a much greater extent. Moreover, in France family matters have typically been considered a public rather than a purely private concern (Burger 2012, 2014).

Beyond comparative-historical methods, I used *statistical methods* and large-scale survey data on early childhood education and child development. This allowed for highlighting considerable social gradients in access to early education services. In addition, the quantitative analysis revealed a positive association between attendance of early childhood education programs and levels of cognitive development in primary school in Switzerland.

Finally, *systematic review methods* allowed for synthesizing previous findings so as to reach conclusions that can be considered less context-dependent than those of individual studies. For example, the review of research provided evidence of substantial positive short-term effects and less sizeable longer-term effects of early childhood education on children's development in both Western and non-Western countries. Relative to children from well-off families, those from more disadvantaged backgrounds made as much or slightly greater developmental progress. However, early childhood education typically does not compensate fully for developmental deficits which often result from adverse learning environments in socially deprived households (Burger 2010). On the whole, the interdisciplinary integration of disciplines and methods in this project presupposed a close dialogue with experts from the respective disciplines as well as ample consideration of the respective literatures.

Transdisciplinary Integration of Scientific and Nonscientific Knowledge

By integrating scientific and nonscientific knowledge about early education experiences, the project widened analytic perspectives, allowing for an understanding of early education that is at best deeper and broader than one likely to come exclusively from within academia. As a case study, I used a literary document to investigate educational processes in early childhood. Specifically, I examined the first part of Elias Canetti's (1977) autobiography, *The Tongue Set Free*, from the perspective of pedagogical, psychological, and sociological theory. Canetti's account describes the interplay between psychological and environmental determinants of educational processes in early childhood, outlining how micro-level characteristics and macro-level contexts combine to shape educational experiences. In this autobiographical work, specific-

ties of educational experiences in early childhood are not described in a scientific manner, and no claims are made regarding theoretical generalizability (Burger 2013). Focusing on the author's idiosyncratic description of early educational experiences enabled me to trace insights that differed from those emerging from purely scientific analyses. For instance, my analysis underlined that psychological variables such as desire figure prominently in educational processes. This is a novel finding suggesting that salient intra-personal driving forces of educational processes should be considered more explicitly in future quantitative research.

More generally, figure 1 (p. 200) illustrates the different domains that have been taken into account in the project – societal issues, science, politics, culture, law, and norms. It also indicates how these domains (may) interrelate. Considering these domains jointly and demonstrating their interrelations allows for developing a more comprehensive theory of early childhood education as well as for raising stakeholders' awareness of the multiple factors that contribute to the functioning of early childhood education.

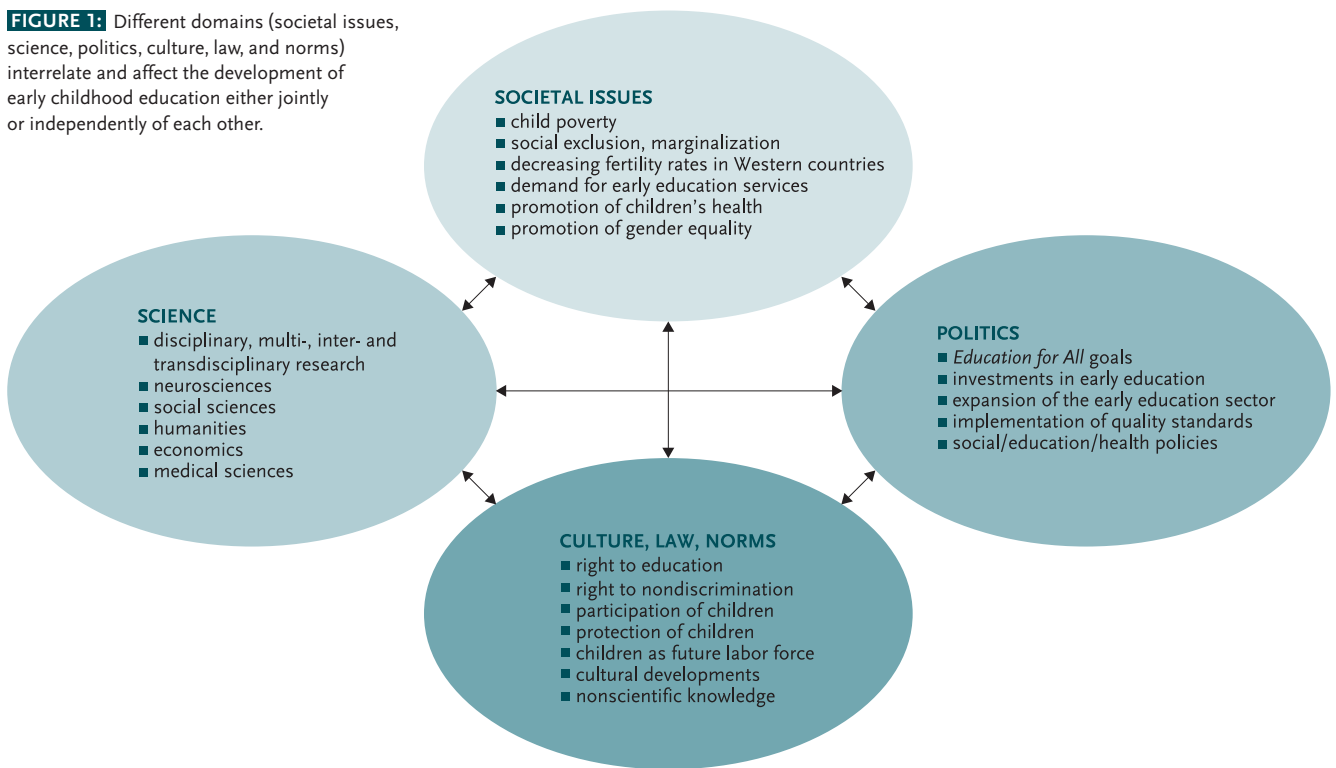
Transdisciplinarity from an Epistemological and Practical Perspective

The question now arises whether the transdisciplinary approach revealed part of what is between, across, and beyond the disciplines; whether it helped to structure insights in view of a growing body of knowledge from different disciplines; and/or whether it contributed to the solution of a societal problem – which would constitute some of the specific benefits of transdisciplinarity (e.g., Nicolescu 2002). Undoubtedly, the transdisciplinary approach allowed for cross-fertilization of disciplines, that is, exchange of concepts and paradigms between disciplines. To give but one example, psychological aspects of early educational experiences had not been described thoroughly in psychology or educational science previously. Thus the transdisciplinary approach generated shared knowledge across disciplines and yielded results in domains that had not been observed before owing to commonly accepted limits of traditional disciplines. In addition, some of the main findings did not only go beyond disciplines, but were also taken up, for instance, by actors like the World Health Organization (WHO) and foundations committed to improving children's lives – for example, the finding of the systematic review whereby early childhood education programs tend to compensate for adverse learning conditions that children face in disadvantaged milieus with only few informal learning opportunities. Besides, my project was the starting point of a collaboration with the Jacobs Foundation which subsequently resulted in the elaboration of a quality label for childcare facilities in Switzerland. Hence the transdisciplinary approach may have proven itself valuable in contributing to solve societal issues.

From a more general theoretical perspective, the findings of transdisciplinary research can enter into a circular process by forming themselves the components of novel scientific hypotheses and theories, and they can inform policy-making. It should be acknowl-

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FIGURE 1: Different domains (societal issues, science, politics, culture, law, and norms) interrelate and affect the development of early childhood education either jointly or independently of each other.



edged that transdisciplinary research is nourished by disciplinary research. Hence it is rooted in disciplinary paradigms and needs to assess the value of these paradigms with respect to the creation of new knowledge or to the solution of a practical problem. However, transdisciplinary research brings competing disciplines into a dialogue, articulates different dimensions of society (e. g., politics and science), and integrates scientific and nonscientific knowledge, as described above. In this respect transdisciplinary research can produce original findings which may advance theory, practice, and policy-making at once. Disciplinary and transdisciplinary approaches are complementary. Both are important in early childhood education research, and both should be developed further in the future.

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