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Longitudinal studies in ECEC: challenges of translating research into policy action

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Editorial

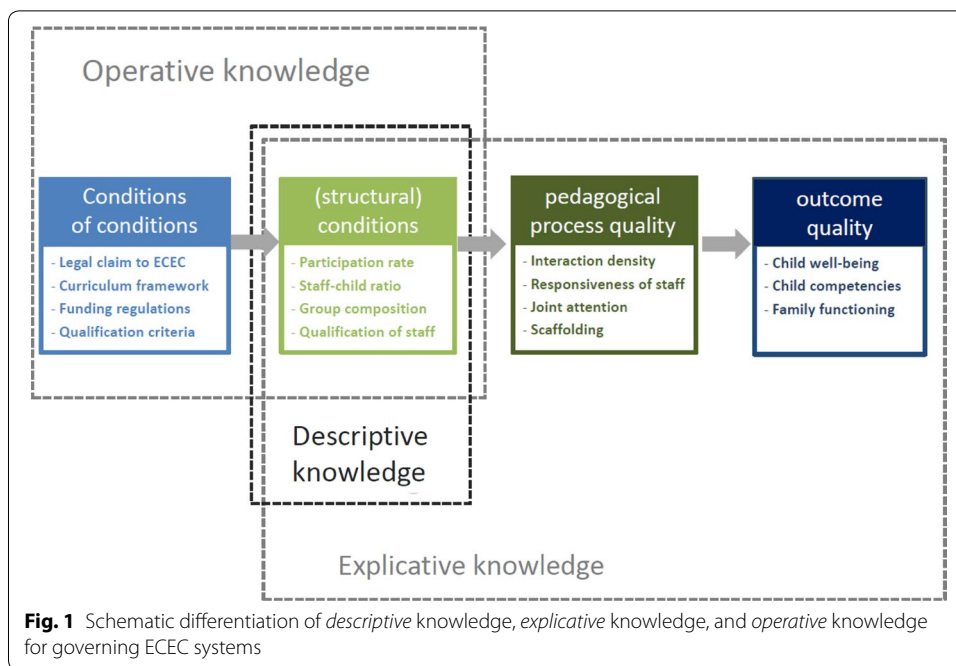
In many countries, the systems of early childhood education and care (ECEC) are facing major reforms, such as an expansion of the daycare infrastructure to cover younger ages or the stronger emphasis on early education and learning. In line with increased expectations, the question of quality and impact arises. A core question for the governance of ECEC systems as well as for the legitimization of public investments in these systems refers to the impact of ECEC on child development and educational success. Answering this question with the help of empirical evidence turns out to be a difficult endeavor. A whole bunch of both methodological challenges as well as pragmatic barriers for empirical research emerge.

Reducing inequalities or even compensating for disadvantages in the area of (early) education are important political aims for children. Empirical studies therefore try to figure out if and under what conditions ECEC participation can reduce the social gradient in educational attainment. Empirical data can provide different kinds of knowledge that are valuable for governing ECEC systems (see Fig. 1). *Descriptive knowledge* informs about the prevailing reality, for instance about the ECEC participation rate of defined age groups (e.g., under 3-year-olds) in a specified jurisdiction (e.g., state) at a specific reference date. In order to derive such descriptive knowledge from available data, specific methodological criteria have to be met (e.g., representativeness). *Explicative knowledge* informs about the causal linkages assumed between the observable pedagogical quality in ECEC settings ('process quality') and structural factors ('structural quality') or child outcomes. *Operative knowledge* informs about those conditions that can be controlled by ECEC policy measures and that have an impact on the structural quality of ECEC settings. This kind of knowledge is meant when we talk about evidence-informed policy interventions.

Different types of studies on ECEC deliver different kinds of knowledge, as will be explained in the following. Here we list and discuss those data sources or study types that are established and used in many countries to inform ECEC policy.

Indicator-based monitoring and reporting

Well-established instruments like national educational reports (e.g., the *Annual Early Childhood Education Census Reports* in New Zealand), comparative ECEC reports at the state or regional level (e.g., the *Ländermonitor* published by the Bertelsmann Foundation



in Germany), reports on formal education or ECEC at the local or municipal level as well as international educational reports (e.g., the *Education and Training Monitor* published annually by the European Commission or *Education at a glance* published annually by the OECD) allow for a continuous monitoring of ECEC systems. Typically, such reports are based on official statistics. They offer descriptive knowledge on the ECEC system in the corresponding jurisdictions.

Large-scale studies on ECEC

Empirical studies on ECEC that include large samples portray the use, quality, and effects of ECEC, even if they differ in their specific research questions and designs. Since they are intricate and expensive, those studies are conducted rarely. *Cross-sectional studies* provide snap-shots of the ECEC system; they are powerful tools to attain descriptive knowledge. Correlational analyses of cross-sectional data may suggest causal links between different measures (variables). However, observed statistical associations between variables must not be read as causal relations since third variables might be responsible for these effects. Large-scale data collections designed as prospective *longitudinal studies* have a stronger (but still limited) analytical power, such as the prominent *NICHD Study of Early Child Care and Youth Development* (NICHD Early Child Care Research Network 1996, 2000; Vandell et al. 2016). Here, the causal impact of type, amount ('dose'), and quality of experienced ECEC on child development (both learning and functioning) can be statistically tested, but not proven.

Intervention studies

A special type of empirical studies use the idea of systematically controlling the presence and absence of the assumed causal factors (causes) and observing the consequences (effects). Here again, the exclusion of interfering third variables is a methodological

challenge. This holds true especially for interventions in realistic and complex settings ('field studies'). Reforms and programs installed by policy must be seen as interventions and should generally be used to learn more about the effects and effectiveness of ECEC. This implies close and early collaboration between policy and research. How this can be managed and what lessons can be learned from experiences in different countries are in the focus of this thematic series.

Thematic series overview

The idea of this thematic series is to highlight the potential of results obtained from longitudinal studies to inform about the impact of ECEC on children's learning and development and to encourage their use for evidence-informed policy making. The contributions describe how research and ECEC policy can be linked and discuss possibilities and challenges of translating research into policy action. Furthermore, they tackle questions relevant for policy making; they try to increase the awareness for the quality of the study design and the applied methodologies. The authors draw on longitudinal studies with a focus on early childhood in five different countries: US, UK, New Zealand, Germany, and Korea. In the following, we outline the content of each contribution. In the first part, the pioneer countries in the area of longitudinal studies in ECEC, US, and UK report their experiences of translating research findings into policy action.

Lawrence Joseph Schweinhart provides an overview of the US history of longitudinal studies in ECEC including the studies Head Start, HighScope Perry Preschool Study, Abecedarian Child Care Study, and Chicago Longitudinal Study and the dissemination of their findings to policy makers and the public. Drawing on the experiences of the dissemination into public and policy debate, he identifies challenges and makes suggestions how to promote a sensible use of research findings in ECEC policy.

Edward Melhuish describes how research evidence of two longitudinal research studies, the National Evaluation of Sure Start (NESS) and the Effective Provision of Preschool, Primary, and Secondary Education project (EPPSE) have contributed to substantial ECEC policy change in the UK during the last two decades. The author also refers to the recent setup of the Study of Early Education and Development (SEED), which started in 2013.

The second part comprises articles on recent longitudinal cohort studies in ECEC with examples of policy-relevant analyses. *Amy Louise Bird*, *Polly Atatoa-Carr*, *Elaine Reese*, and *Susan Morton* outline a model for interaction between policy and research that is applied in the study Growing Up in New Zealand. As an example of policy-oriented analysis, the authors discuss findings on socio-economic and ethnic differences in the access to type, amount, and quality of ECEC also with regard to whether families intend to make use of the government's new policy of 20 h of free ECEC for children aged three and older.

Sabine Weinert, *Anja Linberg*, *Manja Attig*, *Jan-David Freund*, and *Tobias Linberg* emphasize the relevance of longitudinal studies in ECEC for answering important research and policy questions regarding children's development. They outline the design of the recent Newborn cohort study of the German National Educational Panel Study (NEPS) and present the applied measures to assess child characteristics as well

as learning outcomes. Furthermore, they report selected results on social disparities in mother's interaction behavior and child's development.

Jeong Rim Lee, Gilsook Kim, Yejin Yi, Shinyeong Song, and Jinmi Kim introduce a Korean perspective on children's social behavior which is an important topic on the ECEC policy agenda and emphasized in the Character Education Promotion Act. The authors use recent longitudinal data of the Panel Study on Korean Children (PSKC) in order to investigate how problem behavior develops in children from age 4 to 6 and discuss possible conclusions for policies aiming to reduce problem behavior.

As illustrated by *Eunseol Kim, Seong Hyeok Moon, Jeong Rim Lee, Yoon Kyung Choi, Namhee Do, and Dongha Lee*, one priority of Korean ECEC and family policy is to raise low fertility rates. The authors show how combined data of two longitudinal studies, the Panel Study of Korean Children (PSKC), and the Korea Longitudinal Study of Women and Families (KLoWF), can be used in order to investigate the relationship between fertility and expected costs of raising a child. The results are informative to the revision of subsidy policies.

A contribution on a longitudinal study which evaluates a targeted policy program is as follows: The evaluation of the pedagogical approach of embedded language education. Supporting children in their acquisition of German, in particular, children whose family language is not German, is a highly important topic in German ECEC policy. Accordingly, an extensive program ("Core daycare centres language & integration") was set up by the German federal government. As an example of a longitudinal evaluation study, *Yvonne Anders, Hans-Günther Rossbach, and Wolfgang Tietze* provide insights on the evaluation of this program. They describe the design of the evaluation study and highlight its methodological challenges and potentials.

The thematic series concludes with a commentary on important factors which potentially make research count in ECEC policy decisions. Drawing on examples from the articles in this issue *Janina Eberhart, Sophie Hahn, and Carolyn Seybel* illustrate how the factors 'Alignment,' 'Sound Methodology,' and 'Dissemination' crucially impact the translation of research findings into ECEC policy. Furthermore, the authors discuss the challenges of and opportunities for future collaboration between research and policy.

Authors' contributions

BK, NW and WSB had the original idea for this Thematic Series that is based on contributions to the international conference "Longitudinal Studies in Early Childhood Education and Care: What do they tell us about the effects of early education on children's development?" organized by the International Center Early Childhood Education and Care (ICEC) and the German Youth Institute (DJI) and held on November 17th, 2014 in Berlin. This text was predominantly written by BK, managing editor of this issue. All authors read and approved the final manuscript.

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Competing interests

We declare that we have no financial and personal relationships with other people or organizations that can inappropriately influence our work, there is no professional or other personal interest of any nature or kind in any product, service and/or company that could be construed as influencing the position presented in, or the review of, the manuscript entitled.

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