



# Encouraging Quality in Early Childhood Education and Care (ECEC)

## RESEARCH BRIEF: DATA COLLECTION AND MONITORING MATTER

### What is data collection and monitoring?

Data collection in ECEC involves the collection of strategic information on ECEC services (e.g., supply, utilisation of funds, unmet needs and teacher qualifications) to support national and local decision making (OECD, 2001).

Monitoring in ECEC refers to the ongoing evaluation of system performance, as well as rating programme quality, for accountability and/or for improvement purposes, highlighting trends in the ECEC sector and contributing to parental choice (OECD, 2006).

### What is at stake?

The recent global economic crisis and pressure on education funding emphasise the need for accountability and seeking “value for money” in the education sector, including ECEC, and for evidence-based policy development. To achieve evidence-based policy making, government administrations need to organise data collection in the ECEC field and cover important areas of ECEC policy, such as demand, supply and utilisation of ECEC places; the volume and allocation of public financing; the status of children (demographic, health, socio-economic, etc.) within and outside ECEC services; and the recruitment and training levels of staff (OECD, 2006).

In educational research, programmes funded by the same source or serving the same age group are often assumed to be equivalent in programme provision and level of quality<sup>1</sup> (Patton, 2008). Information relevant to early childhood policy is often derived from data sets created for other age groups and purposes. Such limitations lead to uncertain policy making at the national level and to a lack of reliable comparative data at the international level (OECD, 2006).

The coherence and co-ordination of data collection and monitoring regarding ECEC continue to pose challenges, although several OECD countries are modifying their information systems to include data on young children. As an example, the Data Quality Campaign in the United States encourages and supports state policy makers to improve the availability and use of high-quality data regarding ECEC and other levels of education. The campaign provides tools and resources that help states implement and use longitudinal data systems (Laird, 2008). Despite improved data collection and monitoring efforts, data on very young children (ages zero to three) remain hard to access (OECD, 2006). These gaps in knowledge about young children undermine policy making in the ECEC field, and have implications not only for international comparability but also for national issues, such as child protection (OECD, 2006).

### Why do data collection and monitoring matter?

#### *Increased accountability and improved services*

Data collection and monitoring can help establish facts and evidence about the ECEC sector, for example, whether children have equitable access to high-quality ECEC; and it can ensure accountability on quality ECEC systems. For example, financial tracking and monitoring can help inform planning, contribute to more efficient resource allocation and increase cost-effectiveness (Bennett, 2002).

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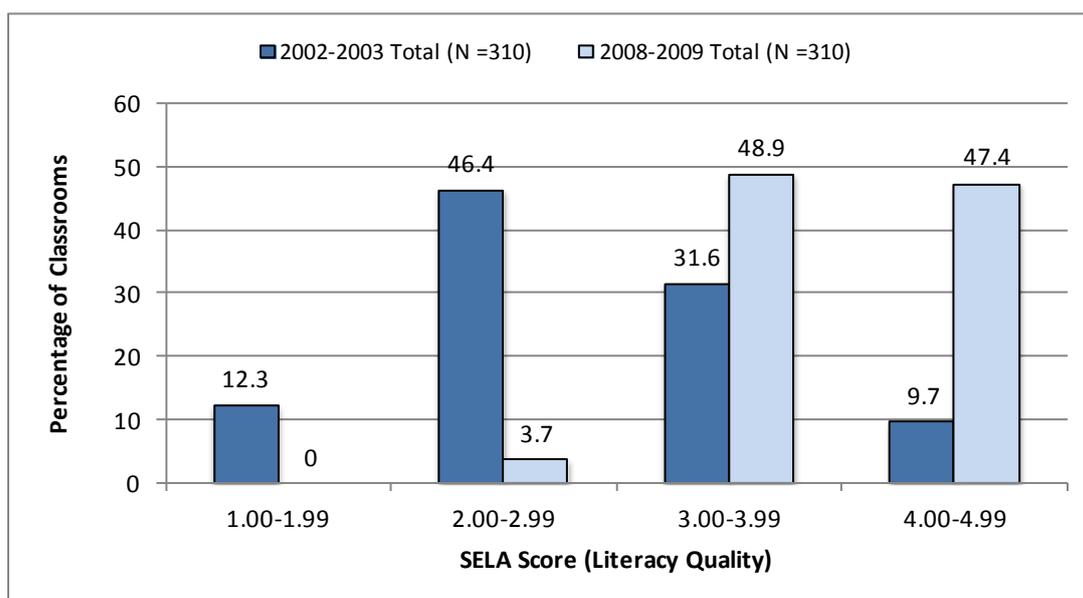
<sup>1</sup> Patton refers to this as “the problem of labelling the black box” (Patton, 2008, p. 142).

Several studies have found that the collection and monitoring of quality data can lead to increased programme quality, as reflected by the adoption of higher standards, improved classroom environment ratings and more credentialed teachers (Office of Child Development and Early Learning, 2010; Rand, 2008).<sup>2</sup>

### Contribution to better child outcomes

Improvements in programme quality can lead to important and meaningful impacts on child development (Pianta *et al.*, 2008). Monitoring practices and collection of data can provide feedback on what works and help identify areas of improvement. For example, in New Jersey, the introduction of a quality rating score allowed practitioners and management to improve their practices, and statistically significant effects were found on children’s literacy skills (Figure 1) (Frede *et al.*, 2007, Frede *et al.*, 2011).

**Figure 1. New Jersey classroom change in literacy quality scores**



Note: The SELA (Supports for Early Literacy Assessment) is an observation-based assessment instrument designed to measure the quality of supports for young children’s language and literacy development in center-based preschool settings (e.g., child care, prekindergarten, Head Start).

Source: Frede *et al.*, 2011.

### What aspect matters most?

#### Monitoring targets

Data collection and monitoring can contribute to evidence-based policy making and improved pedagogical practices. It first needs to be determined what should be monitored or evaluated. Most often, minimum standards (regulations) or child outcomes are being monitored (the latter more frequently in Anglo-Saxon countries) (OECD, 2006). Monitoring minimum standards helps understand the current state of the ECEC sector. It can also help detect special learning needs, which plays a critical role in offering supplementary early intervention and support.

To better understand under what conditions ECEC staff are working, how different factors impact, for instance, turn-over rates, and whether work conditions meet regulations, it is important to collect data and monitor this over time. Monitoring curriculum implementation might give insights into what can be improved in curriculum and pedagogical practices, or training for curriculum, which can enhance quality

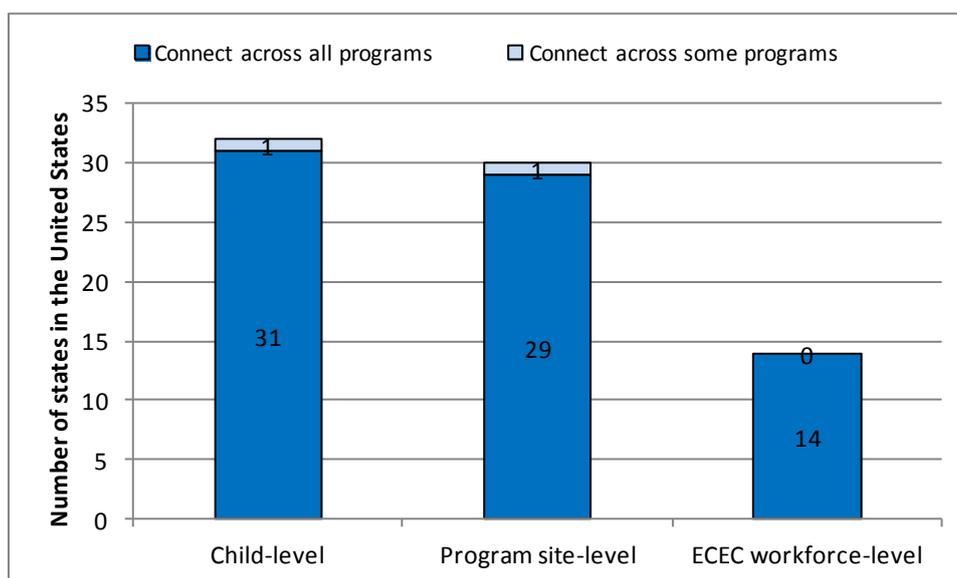
<sup>2</sup> See, for example, Keystone STARS study ([www.pakeys.org/uploadedContent/Docs/STARS/outreach/2010%20STARS.rpt.final.pdf](http://www.pakeys.org/uploadedContent/Docs/STARS/outreach/2010%20STARS.rpt.final.pdf)) and RAND study ([www.rand.org/pubs/research\\_briefs/RB9343/index1.html](http://www.rand.org/pubs/research_briefs/RB9343/index1.html)).

and child outcomes. Furthermore, family satisfaction is often monitored through the use of, for instance, surveys. Monitoring such aspects of ECEC contributes to creating a greater understanding of what constitutes quality ECEC (OECD, 2006).

### Co-ordination of data collection

Data collection requires the capability to co-ordinate a strategic collection of data and maintain high standards of reliability over time and across multiple data collectors and geographical regions (Zaslow *et al.*, 2009). It is challenging for countries to collect appropriate data on ECEC. A United States review of ECEC data systems reveals that, while states are collecting a lot of early education related data, their efforts are often uncoordinated. Most state data systems are not able to link individual child- or site-level data with workforce data (Figure 2). This makes it difficult for states to understand how its workforce policies or professional development investments are related to children’s learning and development, despite the fact that a solid body of research indicates that workforce is a critical quality indicator for enhancing child development. Furthermore, almost all states are unable to determine which children are simultaneously enrolled in multiple ECEC programmes. When this cannot be determined, it can lead to duplication of services and present barriers for ECEC programmes to co-ordinate and build on each others’ efforts when working with the same children (Early Childhood Data Collaborative, 2011).<sup>3</sup>

**Figure 2. Lack of co-ordination of data collection across ECEC programmes in the United States**



Source: Early Childhood Data Collaborative, 2011.

### Selection of indicators

A careful selection of indicators can help improve programmes and the workforce, increase access (especially in underserved communities), and improve practice and child outcomes (Early Childhood Data Collaborative, 2011). Information on structure and process indicators contributes to increased knowledge about the level of quality provision; while information on the demographic and background characteristics of children served can be included in data systems to determine programme effects on target groups and the current state of play of ECEC.

A comprehensive efficacy study should measure the programme components, as well as child outcomes, to inform stakeholders about the relationship of certain aspects or characteristics (e.g., minimum standards or family income) and child development. Having this information allows researchers to draw clearer conclusions regarding who benefits and under what conditions. Research institutes in the United

<sup>3</sup> See <http://ecedata.org/files/DQC%20ECDC%20brochure%202011%20Mar21.pdf>

States have highlighted several indicators as “fundamental” for ECEC data collection and monitoring (Early Childhood Data Collaborative, 2011):

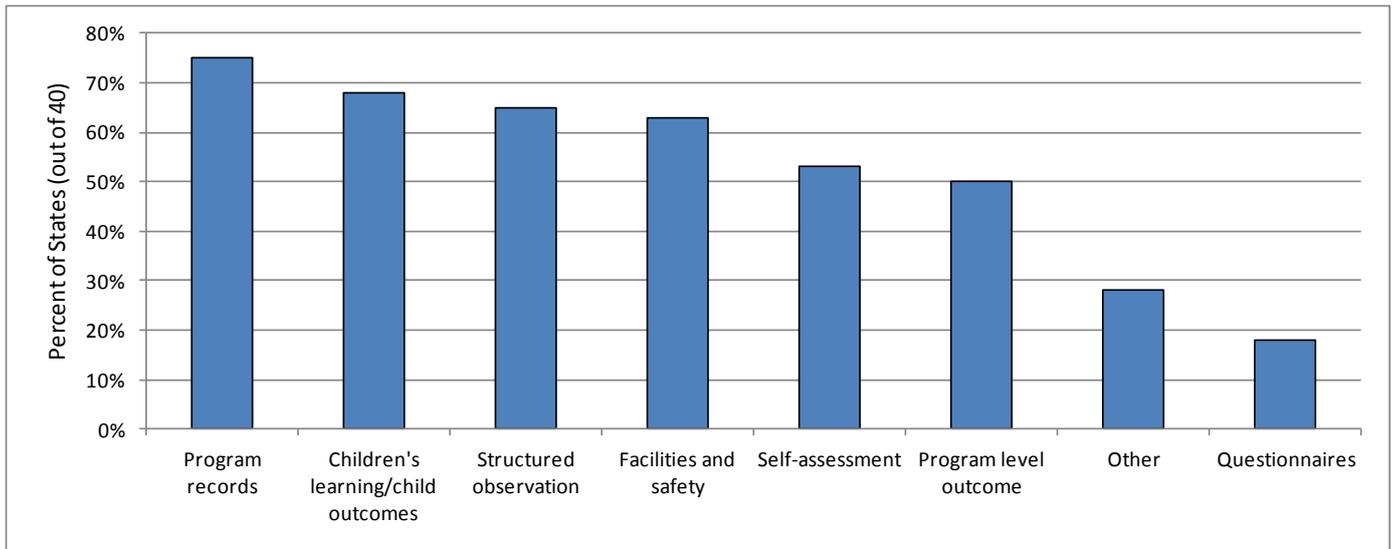
- Unique state-wide or region-wide child identifier, which allows governments to track ECEC participants over time if they change school or move to another city
- Child-level demographic and programme participation information, including family background characteristics
- Child- and group- level data on child development
- Ability to link child-level data with school and other key data systems
- Unique programme site identifier with the ability to link with children and the ECEC workforce
- Programme site data on structure, quality and the work environment (such as staff-child ratio)
- Unique ECEC workforce identifier with ability to link with programme sites and children
- Individual ECEC workforce demographics, including education and professional development information

### **Monitoring methods**

Even among ECEC programmes with objective and measurable goals, monitoring quality and measuring effectiveness can be a daunting challenge (OECD, 2006). Numerous systems of assessment and observation have been developed to judge ECEC quality. These include programme records, structural observation of child development and child learning outcomes. Tools, such as checklists and questionnaires to evaluate programme structure and implementation in local-level evaluations, are increasing in popularity, although they are still far less used than other monitoring methods. In the United States, for example, official programme records are the most commonly collected source of monitoring information (75%), while the use of a questionnaire is the least frequently used method with 18% (Figure 3) (Barnett *et al.*, 2010).

However, methods can have different purposes and should be chosen with careful consideration, since different methods can provide different information. The *Starting Strong* reports indicate that it is important for information and data collection to take a more consultative approach by involving parents in monitoring in addition to national/local administrations, ECEC centres and staff. In this approach, information on many variables can be collected, such as ease of access, convenient hours of opening, efficient administration and distribution of places, sensitivity to family background (socio-economic, cultural, religious, linguistic, etc.), parents’ perception of the happiness and well-being of children, the provision of meals and normal healthcare to children, and relationships with teachers. Such information is also useful for parents in choosing the centre suitable for their child(ren) (OECD, 2001; 2006).

**Figure 3. Monitoring methods at state level in the United States**

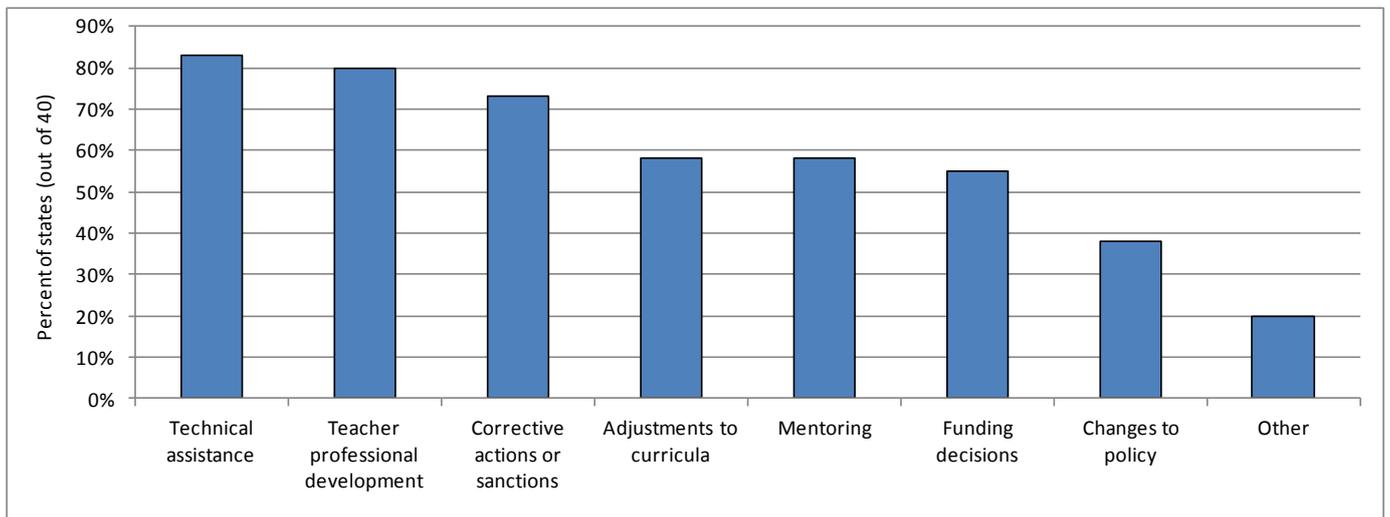


Source: Barnett et al., 2010.

**Use of the data**

The collected data in use varies across countries, and the purpose of data should be well-considered before collection and monitoring mechanisms are implemented (OECD, 2006). The most common application of data is to provide technical assistance (83%), followed most closely by teacher professional development (80%), corrective actions or sanctions (73%) and changes to ECEC policy (38%). What is evident from Figure 4 is that data and monitoring are not frequently used to implement policy changes, while evidence-based policy making can contribute to greater policy effectiveness and efficiency (Barnett et al., 2010).

**Figure 4. Uses of monitoring information at state level in the United States**



Source: Barnett et al., 2010.

## What are the policy implications?

### *Defining the purpose, scope and critical policy questions*

Without a clear understanding of why data are needed, governments run the risk of collecting data for purely compliance reasons instead of tapping into the potential of data to inform continuous improvement. Different purposes may require different data, collection methods, and rigorous attention to research design, what is measured and how it is measured. Defining the purpose and scope of data collection before starting data collection is, therefore, important (Patton, 2008).

Taking stock of existing data collection efforts to determine whether all current data collection activities are needed, and assessing where data gaps exist and what linkages among ECEC programmes are needed, will help answer agreed-upon policy questions. Policy questions determine the purpose of monitoring and consider potential uses for monitoring information. Examples include (Barnett *et al.*, 2010):

- to identify needs that will guide teacher training or professional development
- to identify programmes for corrective action or sanctions
- to make funding decisions about programmes or guarantees
- to make adjustments to curricula
- to provide staff with technical assistance
- to provide staff with mentoring
- to make changes to preschool policy

The agreed purpose of monitoring will help define the scope of data collection, linking aspects depending on purpose. The most appropriate combination of indicators should be determined in accordance with the country's ECEC quality goals and its specific political, socio-cultural and financial contexts. The collection and monitoring of such data will require a high level of co-ordination and funding. Each country must balance the regulations of a programme with its resource constraints. The linkages among these three components are critical to understanding how policies that create changes in one area (*e.g.*, professional development) are related to another (*e.g.*, child development).

### *Setting up a unified data system and quality monitoring at the national level*

Data systems need to link data on children, programme characteristics and workforce across multiple programmes and governance structures in order for policy makers, providers and other stakeholders to acquire a holistic understanding of the system. Countries that adopt “dual” or “split” systems where different authorities are in charge of child care and early education, as well as countries that continue decentralised monitoring and accountability procedures, can find it increasingly difficult to make national comparisons and ensure that high-quality ECEC is available to all children as a universal measure. Setting up a unified data system and monitoring quality at the national level can be beneficial.

### *Collecting and monitoring of financial data*

Useful data would include: public and private expenditure on early education and child care services (in total and/or separate), parental leave and child allowance (cash benefits and tax credits). The information can help formulate government objectives and policies for children across various sectors and determine the appropriateness of a universal or targeted policy in the country-specific socio-economic and demographic contexts (OECD, 2001).

### *Developing cross-national data on quality in ECEC*

In an increasingly global economy, countries find more value than ever before in comparing progress across countries, sharing best practices and improving ECEC globally. A study exploring national

adaptations of the same rating scale in South Korea and Sweden found that cross-cultural comparison of quality in preschools is both achievable and valuable (Sheridan *et al.*, 2009).

Parents and local administrators can be a valuable source of information. Parents can offer an important perspective on the perceived happiness of their children and raise concerns. Involving local administrators in the monitoring processes can encourage their efforts and is considered of particular relevance where responsibility for ECEC is delegated to the local level (OECD, 2006).

## **What is still unknown?**

### ***Data on ECEC in general***

Internationally, information is lacking across all areas of ECEC provision (Hustedt and Barnett, 2010), which makes research on the effects of implementing and maintaining well-designed data bases difficult to conduct. We know very little about who is being served across the various ECEC sectors, what resources are committed to the programmes, the characteristics of the staff, the structural characteristics of many programmes and the dynamic quality characteristics. Although extensive data on children and programmes will help answer questions about subgroups and programme effectiveness, governments and other funding agencies often do not conduct studies that are rigorous in their design and, thus, leave too many unanswered questions. In the United States, most evaluations of state preschool provision were found to be so flawed in their design that there were severe limitations in interpreting their results (Gilliam and Zigler, 2004). Thus, we not only need to develop and build extensive data bases that can connect information across ECEC sectors, but we must ensure that these are connected with rigorously designed research studies if we are to use the data to inform programme improvements leading to increasing the effectiveness of our early learning efforts globally.

### ***Data on quality, financing and costs in particular***

It is too early to validate the theory of action behind ECEC data systems. Although there have been some one-time studies of the use of patterns and surveys of aspects of child care, in most countries, there is no permanent, regular source of information about the range of ECEC programmes, especially on financing and cost information (Cleveland *et al.*, 2003).

### ***Effects on child development and learning***

Although there is some emerging evidence of the effects of some aspects of data collection and monitoring, such as quality rating, on increased programme and classroom quality, more research is still needed on how use of data and data systems can enhance children's learning and development.

### ***Insufficient knowledge for international comparative studies***

A lack of coherent monitoring policies at the national levels makes it difficult for countries to obtain a full picture of the ECEC services provided and impedes international comparisons of programmes and their outcomes.

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