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Scoping review of child development indicators and measures used for 2- to 11-year-olds

Executive Summary

1. Introduction and background

The early years are seen as critical for children's physical, cognitive, language and socio-emotional development and one of the core aims of the 2022 [Children and Young People's Plan](#) is that children and young people have "the best start" in life. Policies and programmes that support this include:

- [The First 1,000 Days](#) and [The Healthy Child Wales Programme](#)
- [The Early Childhood Play Learning and Care \(ECPLC\) Plan](#)
- [Curriculum for Wales](#)

Each of these aim to support child development. However, despite recognising its importance, currently the Welsh Government does not use one single definition of child development across its different policy areas. Moreover, initial engagement work indicated a potential gap in relation to measures of child development for children aged 2 to 11 years of age. Therefore, the aims of this review are:

- To generate evidence on the importance of, and the effective use of, child development indicators and measures used by the Welsh Government and external partners
- To identify and document indicators and measures of child development used for 2- to 11-year-olds nationally and internationally
- To critically assess the characteristics of indicators and measures of child development used for 2- to 11-year-olds nationally and internationally
- To summarise evidence to provide a better understanding of what defines child development and its components in different contexts

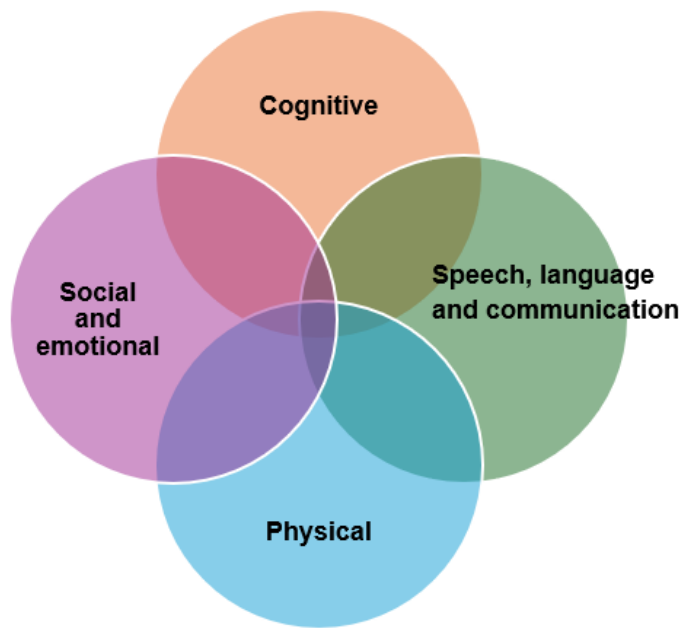
Methods included:

- interviews with 12 stakeholders
- a systematic desk based review of indicators and measures of child development used for 2- to 11-year-olds nationally and internationally
- A stakeholder workshop to critically appraise and discuss the findings

2. What defines child development and its components?

Child development describes the sequence of changes that occur in a child from conception to adulthood. As figure 2.1. illustrates, these different changes are typically grouped into overlapping “domains” of development, such as cognitive, physical, social and emotional and speech, language and communication. These changes are understood to be the result of dynamic interactions between the child and their surrounding environment.

Figure 2.1: Example of child development domains



However, while stakeholders and the literature reviewed confirmed this high-level definition of child development, there remain differences in the emphasis placed upon different domains, the grouping of different changes into domains and the naming of domains. More fundamentally, the review also identifies a conceptual divergence in how child development is understood across policy areas in Wales; is it understood as a:

- linear process: a sequence of changes that most children are expected to go through, where deviation from this norm is a cause for concern
- pluralistic process: a sequence of changes that differ from child to child, where the diversity of pathways is regarded as natural and normal, like other forms of physiological or socio-cultural diversity

The review identified that a more linear, normative model of child development was generally more appropriate when the purpose was:

- screening to identify specific issues such as developmental delay
- measuring changes at system or population levels, which is difficult, if every child's trajectory is treated as unique and equally valid

In contrast, the review identified that a more pluralistic model of child development was generally more appropriate when the purpose of measurement was:

- surveillance, the ongoing monitoring of an individual child's development or
- formative assessment to support learners' progress

This study also identified (but did not review) a number of measures of children's behaviours or outcomes, such as [the School Health Research Network \(SHRN\)](#) and [Health and Attainment of Pupils Involved in the Primary Education Network \(HAPPEN\)](#) surveys. These behaviours or outcomes are linked to child development, either as

- factors contributing to child development, such as Adverse Childhood Experiences (ACEs) or
- outcomes like well-being, that child development contributes to, but which are not in themselves measures of child development

3. The importance of, and the effective use of, child development indicators and measures

The early years are critical for development. They lay the foundations for children's future development and life chances, enabling children to thrive and fulfil their potential throughout their lives. The pace, extent and nature of development is shaped by the dynamic interaction between the individual child and their environment. Understanding if, when and how children develop is therefore vital to

- support individual children's progression
- inform the planning, commissioning and evaluation of policies and programmes supporting child development at systems and population levels

However, there remains the long-standing tension between the ways in:

- which measurement can have unintended consequences by distorting practice, which can damage what is being measured. For example, if measurement means practitioners focus upon what can be easily and systematically measured, rather than what is important to or for the child. This risk is sometimes described as 'hitting the target, but missing the point'
- the ways in which not measuring what is important to or for an individual child or for groups of children in Wales, can mean that this is neglected or deprioritised. This reflects the maxim that 'you cannot improve, what you cannot measure'

[Footnote 1]

[1] This reflects the proposition that that measurement enables understanding, understanding allows for control, and control is necessary for improvement.

The introduction of the [Curriculum for Wales](#) illustrates some of these tensions. Its introduction means that standardised data on child development is no longer collected by education settings for those aged 3 to 11 years of age, at a national or systems level. As the [Supporting learner progression: assessment guidance](#) outlines “The purpose of assessment within the Curriculum for Wales is to support individual learner progression” and the use of assessment data in the past for accountability, damaged this. This has led to changes in assessment intended to enhance learner progression, but in doing so, markedly reduced that amount of information available at a system or population level on learner progression.

The gaps in national data created by these changes, were identified by stakeholders as a key weakness in the Welsh child development evidence eco system. These changes to assessment in education settings, helps explain why, particularly for those working in the early years, there is a perceived gap in data on child development of children aged 2 to 11, despite the volume of data collected by health and education services on these children’s development.

4. The validity, reliability and cost effectiveness of child development measures

The diversity of child development measures makes it difficult to generalise about them. It is also important to consider not only the measure, but also the context in which it is used, how it is used and its purpose, when considering questions like validity, reliability and cost-effectiveness. For example, a measure’s:

- validity and reliability may be strong when used with some groups or populations, but they may not have been tested for use with other groups (such as minority groups, or groups with different languages or cultures)
- validity and reliability may be impaired by weakness in sampling and/or in administration of tools
- cost-effectiveness depends upon both the cost of a measure and the use of the data it generates, Therefore, even a very costly measure may be considered highly cost-effective, if the measures generate data that can increase the cost-effectiveness of programmes (which are typically much more costly than measures themselves)

Despite these important caveats, it is clear that:

- the strength of evidential bases underpinning different measures varies and for many of the measures identified, there was little or no discussion of their validity and reliability in the literature included in this review

- The costs of systematic data collection are considerable

The costs of data collection create incentives to use existing measures and data where possible. This could include developing data linking and sharing, which is seen by stakeholders as a potential way of generating evidence on the impact of early years programmes.

5. Conclusions

Child development describes the sequence of changes that occur in a child from conception to adulthood. Child development measures are widely used by the Welsh Government and external partners. This reflects the importance of the early years and a desire to understand how effectively policies and programmes ensure that children have “the best start” in life.

However, despite the importance of child development to education, health and early years’ policies and teams, the Welsh Government does not use (or have) one definition of child development, or measure of child development. The review identifies that a wide range of measures are used nationally and internationally, reflecting differences in:

- what is being measured, with, for example, different measures focusing upon different domains of child development
- how and when child development is measured, with, for example, different measures using different methods, such as observation or questionnaires, and using different approaches with children of differing ages
- why child development is measured, with, for example, different approaches taken to screening, surveillance and formative assessment; differences which in part reflect two differing conceptions of child development: development as a linear or pluralistic process

The strength of evidential bases underpinning different measures also varies. This coupled, with differences in implementation and in the purpose for which different measures are used, makes it difficult to generalise about their cost-effectiveness.

Given the diversity of child development measures, the review identifies that when selecting a measure, it is important to identify:

- the concept of child development and the purpose of the measurement
- the characteristics of measures that are required for that concept and the purpose of measurement

- the characteristics of the children to be measured (for example, in terms of language and age)

before decisions about which existing measures and data should be used, and/or whether new data tools and measures are needed.

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Views expressed in this report are those of the researchers and not necessarily those of the Welsh Government.

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Mae'r ddogfen yma hefyd ar gael yn Gymraeg.

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