

Child Engagement - a Measure of Learning Opportunity and Inclusive Practice

Engagement is the key to learning (Bailey & Wolery, 1992; McWilliam et al., 1985). When a child is not engaged in a learning environment, the probability of the child learning in that environment is very low. This applies to children in early childhood settings as much as in any other. National guidelines such as the Early Years Learning Frameworks in Australia (DEEWR, 2009) and National Association for the Education of Young Children in the United States (NAEYC, 2009) state that helping children to be engaged is an important responsibility of educators. The Division for Early Childhood (DEC, 2014) acknowledges that more specialised practices are needed to help children with additional needs engage in daily routines and learning environments, and recommends a range of intentional and systematic instructional practices to promote child engagement and learning.

There is no doubt that engagement is important. You may wonder how we can tell if the child is engaged and how we can assist a child to be engaged if engagement is poor or non-existent. A reliable and valid measure of engagement can assist.

What is child engagement and why is it important?

Engagement has been defined as the amount of time spent participating in an activity, interacting with peers or teachers, or looking at or using materials in a developmentally appropriate manner (Bailey & Wolery, 1992; McWilliam et al., 1985). As engagement is considered to be a prerequisite for and a mediator of learning (Aguiar & McWilliam, 2013; McWilliam & Bailey, 1992) the promotion of child engagement in appropriate activities has been proposed as one of the goals of early intervention (Bailey & Wolery, 1992).

Engagement data can indicate early childhood program and centre quality (Raspa et al., 2001; Ridley et al., 2000) and instructional quality of inclusive practice (Odom et al., 2004; Schwartz et al., 1996), and is, therefore, perceived as a key measure for successful inclusion (NSW Department of Education and Communities, 2014). Engagement data can indicate the degree of children's participation in a specific activity in a specific period (Sandall, et al., 2000) and, therefore, measuring engagement can assist educators with data-based program planning.

Measuring engagement using direct observation of child behaviour

Child engagement has been measured in research using direct observation of children, rating scales and interviews targeting both groups and individuals (Kishida & Kemp, 2006a). In the following examples, where individual child engagement data have been used for program decision making, engagement (including adult and peer interaction) has been measured using a momentary time sampling system that has been demonstrated to be both valid and reliable (Kishida et al., 2008). The Individual Child Engagement Record-Revised (ICER-R), which has been used by researchers and practitioners in Australia and overseas across a range of settings, provides percentage of engagement and interaction over 10-minute time periods. It also allows the observer to rate the frequency and quality of engagement and interaction. Notes can also be made during and after each observation.

Momentary time sampling is quite simple. The observer records whether a child demonstrates a behaviour of interest at a specific moment, using a pre-determined interval (e.g., every 15 seconds, every 3 minutes). A device that plays a beep (through earphones) at specific time intervals to prompt the recording is a helpful tool for this observation method. A timer could also be used to prompt recording. Momentary time sampling provides an approximation of the frequency of the target behaviour (Hojnoski et al., 2009).

Measuring engagement across activity types

The engagement data for two children with disabilities, David and Anthony (both pseudonyms), from a study by Kishida and Kemp (2006b) illustrates the use of engagement data in practice. Both children were enrolled in an early intervention program in a childcare centre at the time of observation.

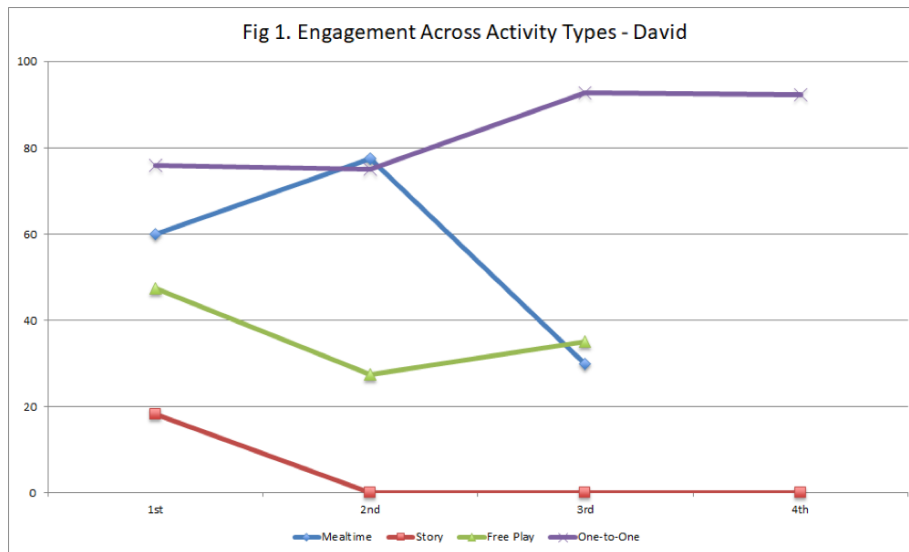
David was a 48-month old boy with autism spectrum disorder (ASD) who had a moderate developmental delay. He had limited expressive language skills and social skills. Anthony (43 months) had a mild developmental delay and a moderate to severe receptive and expressive language delay. He was good at using gestures and also had good social skills.

Both David and Anthony were observed individually during a range of activities that were provided at the centre. The children were observed on three different days during mealtimes and free play, and on four different days during one-to-one instruction and group story time. The aim was to observe each activity for 10 minutes. However, observation sessions ended when activities finished, which meant that some sessions were shorter than 10 minutes.

The following graph (Figure 1) shows the percentage of time that David engaged either actively or passively in each activity on different days. The data indicate which activities provided David with better learning opportunities and which activities needed to be modified to increase David's access to learning.

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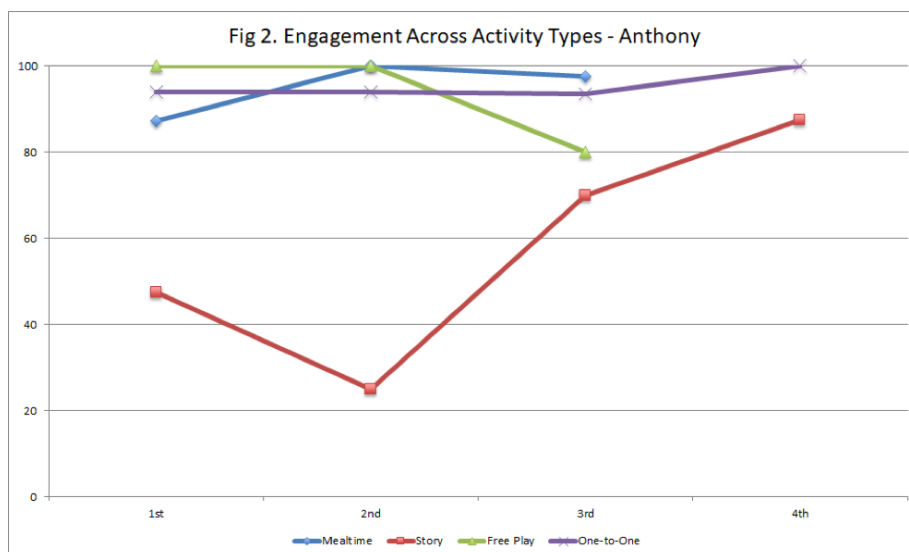
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During one-to-one instruction it appeared that David had good access to learning. However, he needed physical prompts to be engaged, and the sessions were short. In contrast, his engagement data during group story sessions suggest that David needed more help during this activity type. David had days when his engagement was good during mealtime but this was not always the case as the data demonstrate.

The data indicate that a goal for David might be a higher percentage of engagement in free play and group times and that educators could prioritise these activities for intervention. An intervention implemented by his educators could help to increase David's engagement. For example, educators could use a visual schedule and modify the group story time by making it shorter and/or by including fewer children. Educators could also introduce structured play activities, involving a small number of peers, to encourage David to learn play skills in free play.

The next graph (Figure 2) illustrates the percentage of time that Anthony was engaged, either actively or passively, in each activity across sessions.



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Overall Anthony was engaged for the majority of the time in sessions across activity types except for group story time, when engagement varied across sessions (ranged from 25% to 88%).

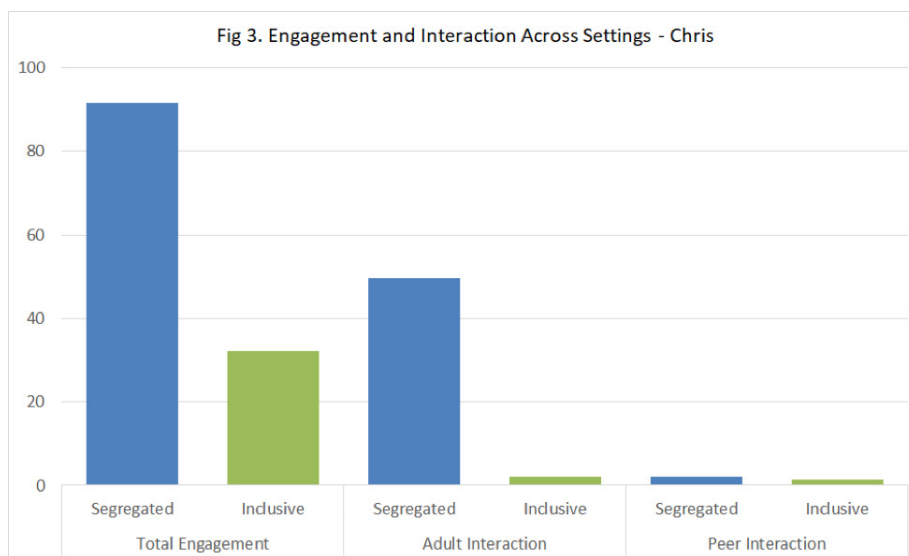
A possible goal for Anthony would be to have him consistently engaged in story time sessions. No adult interaction was observed during the story time. Perhaps the educators' use of verbal prompts to encourage Anthony's engagement could be effective in increasing the percentage of time that Anthony was engaged during these sessions. If Anthony was sitting at the back of the group when he was less engaged, educators could help Anthony by having him sit at the front to give him better access to materials.

When educators implement modified activities, it is helpful to collect engagement data again to see if there is a change and thereby determine the effectiveness of the modifications implemented.

Measuring engagement across activity types

The following two graphs (Figures 3 and 4) compare the engagement data for Chris and Sam (both pseudonyms) during free play in two different programs. Data were from research by Kishida and Kemp (2009). Chris was a 48-month old boy with ASD who had a mild developmental delay. He participated in both an autism specific group program (segregated) and a mainstream childcare centre program (inclusive). Sam was a 61-month old boy with ASD who had a mild to moderate language delay. He participated in both the segregated program and an inclusive preschool program. Chris and Sam were each observed, using the ICER-R, three times for 10 minutes during free play on two separate days in each setting. The observations were scheduled so that each child could be observed in both programs in the same week.

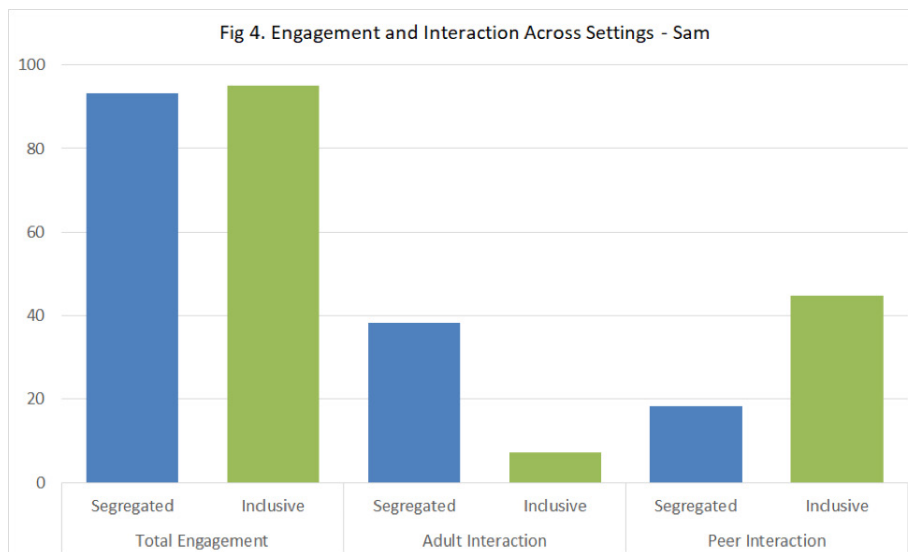
The graphs present the mean percentage of total engagement (active or passive) and adult and peer interaction.



Chris was engaged three times more in the segregated program than in the inclusive childcare program, whereas Sam was engaged more than 90% of the time in both programs. Chris had adult interaction almost half the time that he was participating in the segregated program but hardly interacted with adults in the inclusive childcare setting. He had few peer interactions in either setting.

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Sam interacted with adults approximately twice as often when he was participating in the segregated program versus the inclusive preschool program. However, he interacted with his peers 45% of the free play time observed in the preschool, more than six times as much as when he was participating in the segregated program.

It appears that Chris had more access to learning in the segregated program with adult support. The data also indicated that Sam had good access to learning in both settings and more interaction with adults in the segregated program. He had interacted with peers nearly half of the time in the inclusive preschool, whereas his peer interaction was much less in the segregated program. The data are thus valuable in indicating the level of support that each child needed in each setting. The data also suggest that a child may not necessarily have the skills needed for engagement in a setting but that this could be remedied by the implementation of effective interventions to promote engagement.

Data-based decision making

Data can illustrate the way in which engagement will vary across settings, activities and children. The examples provided by Anthony and David demonstrate how engagement data can help decisions relating to the selection and modification of activities, which in turn can help to ensure that a child has better access to learning. Chris and Sam's data indicate that children with the same diagnosis of ASD may respond differently in segregated and inclusive environments and that different supports might be needed to promote engagement and peer interaction for individual children in each type of setting. The fact that a child is not engaged in an activity or setting does not mean he or she cannot be taught how to be engaged in these environments. Special Educators may collect engagement data or help educators/teachers with data collection and assist their data-based planning and modifications. Ongoing monitoring and data-based modifications can increase learning opportunities for children with additional needs and also improve program quality.

It is important to remember that no single tool can measure all variables that can help promote the meaningful participation of children with additional needs (Bedell et al., 2011). Other skills are also important for child development and early learning (e.g., communication, self-help, early literacy) and should, therefore, be considered. Identifying a target behaviour that is meaningful, functional and can promote a child's active participation is a critical first step for data-based instructional decision making (Hojnoski et al., 2009).



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