Family and Community Services Insights, Analysis and Research (FACSIAR)

Which programs improve school readiness for vulnerable children?

Snapshot

- This rapid evidence review identifies evidence-informed programs that improve school readiness for vulnerable children aged 0-6 years. Only systematic reviews, meta-analyses, or studies that used a randomised control trial or quasi-experimental design were included.

- Of the six programs that were rated according to evidence of their effectiveness, all six were found to contribute to an improvement in school readiness. Two of these programs were rated as having 'promising' research evidence, and four were rated as 'mixed research evidence with no adverse effects.

- The programs used a range of approaches, including delivering sessions through home visits, embedding learning sessions with children into early childhood settings, and using video feedback to support positive parent-child learning interactions. Approaches to supporting the learning and development of younger children tended to require parent involvement. Approaches for older children tended to be delivered in early childhood settings. Four of the six programs were focused on working with parents and/or children and two were focused on teachers and/or educational organisations.

- The review identified common core components of these effective programs, including: relationship building, academic preparedness, and readiness of the child for the classroom.

- The review highlights a need for more high quality Australian research focusing on how schools can prepare for children, and on the effectiveness of programs in diverse Australian contexts, particularly with Aboriginal and culturally and linguistically diverse families.

Introduction

The transition to school is a pivotal life stage for both children and their families, and a significant event for educators.[1] A child's experience of this transition can have consequences for their longer-term academic, social and wellbeing outcomes.[2, 3, 4] Improved school readiness for children is not only likely to contribute to a positive experience of starting school, but is also likely to have indirect impacts on their later educational attainment, economic opportunity, housing security, community participation, empowerment and health.

Communities and Justice

A variety of programs have been designed to support children, their families and educational organisations to prepare for children's transition to school. In 2021, the Department of Communities and Justice (DCJ) commissioned Western Sydney University to complete two rapid reviews to identify evidence from international and Australian research about programs that improve outcomes for vulnerable young children in the areas of child maltreatment and school readiness.

The review report, A rapid evidence review of early childhood programs to reduce harm and maltreatment and improve school readiness, was recently published. **This Evidence to Action note outlines the key findings from the school readiness rapid review.** Detailed descriptions about each program and how the core components are applied are available in the full report and on DCJ's early intervention Evidence Portal.

Why is improving school readiness important?

The transition to school is a dynamic process that involves children, families and educators adjusting to changes in environments, identities, relationships, interactions and expectations, as children move into their first year of school.[5] 'School readiness' is widely understood as a multi-dimensional concept that includes:

- children's readiness for learning and development in the school environment
- schools' readiness, in terms of the school environment and practices that foster a smooth transition and learning journey for all children
- families' readiness, including parental/caregiver attitudes and involvement in their children's early learning, development and transition to school.[6]

Improved school readiness is likely to contribute to positive outcomes. For children, positive outcomes may include feeling comfortable and safe, making friends and participating and showing positive attitudes and dispositions to learning. For families, positive outcomes may include being involved in the school, being partners in their children's learning and having collaborative relationships with educators. Positive outcomes for educators may include feeling able to confidently plan and prepare for each child, providing opportunities for families to be involved and having respectful, responsive relationships with families.[7, 8] A successful school transition may also have longer-term consequences for children's educational attainment and other outcomes, such as economic opportunity, housing security, community participation, empowerment and health.

The NSW Government is committed to investing in and delivering early intervention for children and families. One priority group is vulnerable young children aged 0-5 years with identified risk factors related to their parents and their first year of life, or significant involvement in the child protection system. Various programs have been designed to support this group.

DCJ is building an evidence base about effective programs and their components to better support vulnerable children. This evidence base will inform service planning and delivery, and ensure that vulnerable groups can access services that work.

What did the rapid evidence review find?

The rapid evidence review was guided by the question: 'Which interventions improve school readiness for vulnerable children aged six years or younger?' The review was carried out following

the technical specifications for the conduct of reviews for DCJ's early intervention Evidence Portal. The technical specifications ensure a rigorous and consistent approach to the assessment of program effectiveness.[9] Only systematic reviews, meta-analyses, or studies that used a randomised control trial or quasi-experimental design were included.

The search strategy returned 1,718 publications. The publications were screened to ensure that they fell within scope and were directly relevant to the guiding research question. A risk of bias assessment was then carried out, and only studies found to have a low to moderate risk of bias were included. Following all exclusions, **seven studies were included in the review. These seven studies described six different school readiness programs.**

The review identified a number of different program approaches

The programs used a range of different approaches, including embedding learning sessions with children on self-regulation and other behaviours into early childhood settings, home visiting sessions and video feedback methods to support positive parent-child learning interactions. There were also a range of different approaches in relation to the age of the child. Approaches to supporting the learning and development of young children focused on parent involvement, and approaches for older children focused on early childhood settings.

Four of the six programs worked directly with parents and/or children. This is noteworthy given that the school readiness research literature argues that school readiness requires three components: child readiness, family readiness, and readiness of the educators and school.[10] The reviewed studies show an understanding that schools must be willing to adapt, but are still focused on the preparedness of children and families. The two studies that do address school preparedness in the form of educator training still largely base their measures of success on child outcomes, rather than educator or school outcomes.

A range of school readiness outcomes were reported

The review identified outcome domains and client outcomes to determine program effectiveness. The most common outcome domain was school readiness (18 client outcomes), with all programs designed to improve child conduct, behaviour and engagement in the classroom, enhance prosocial skills and emotional development, and support academic preparedness and school adjustment. One program also had the positive parenting outcome domain, and aimed to enhance positive parent-child interactions.

Six programs were shown to contribute to improvements in school readiness for vulnerable young children

In order to understand which programs help to improve school readiness, the evidence for program effectiveness was rated for each of the six programs identified in the review using the DCJ evidence rating scale (see Appendix 1). The rating process involved three steps:

1. Rating the evidence for each program by outcome domain.

2. Rating the overall evidence for each program based on the outcome domain ratings.

3. Rating the overall direction of effect (positive, mixed, no effect or negative) for each program once overall program ratings were determined.

None of the programs that met the criteria for inclusion in the review achieved a 'well supported by research evidence' rating, which requires at least one high quality systematic review with meta-analyses based on randomised controlled trials to report statistically significant positive effects. Nor did any of the included programs receive a 'supported by research evidence' rating, meaning that at least two high quality randomised controlled trial or quasi-experimental design studies report statistically significant positive effects.

Of the six programs identified:

- Two programs were rated as having 'promising' research evidence, meaning that at least one high quality randomised controlled trial or quasi-experimental design study reports statistically significant positive effects. These programs were: The Incredible Years Teacher and Child Training Program and Smart Beginnings).

- Four programs were rated as havng 'mixed research evidence with no adverse effects'. These programs were: Second Step Early Learning, Kids in Transition to School, Roots of Resilience and Family Check-Up.

Therefore, six programs were identified as contributing to improving the school readiness of vulnerable young children. These were delivered in a range of settings. The six programs and their evidence ratings are listed in Table 1.

Table 1: Evidence ratings of school readiness programs

Program	Delivery setting	Outcomes	Evidence Rating
The Incredible Years Teacher and Child Training Program	Classroom	School readiness	Promising research evidence
Smart Beginnings	Paediatric primary health care Home	School readiness Positive parenting	Promising research evidence
Second Step Early Learning	Classroom	School readiness	Mixed research evidence (with no adverse effects)
Kids in Transition to School (KITS)	Classroom	School readiness	Mixed research evidence (with no adverse effects)
Roots of Resilience	Online	School readiness	Mixed research evidence (with no adverse effects)
Family Check-Up	Home	School readiness	Mixed research evidence (with no adverse effects)

The review identified three core components of school readiness programs

In building evidence of how best to achieve positive outcomes for vulnerable groups, some NSW Government program areas are taking a 'core components' approach. The approach involves identifying treatment programs that have been found to be effective in rigorous studies, and distilling components that are common across them. The benefits of the approach include increased accessibility, translation and uptake of evidence to support evidence-informed decision-making.

The review applied a core components approach to programs that were found to demonstrate positive effects for specific outcomes. The programs were reviewed to identify broad categories or themes that group together specific activities. Following the technical specifications for the review, only those core components mentioned five or more times could be considered common across the evidence base. The review identified three core components and eight flexible activities in programs that improve school readiness. The three common **core components** are: **relationship building**, **academic preparedness** and **readiness of the child for the classroom**.

What are core components and flexible activities?

Core components are the fixed elements, features or functions of a program. Flexible activities are the variable aspects within core components, and may take on different forms according to local context. In other words, the flexible activities are the elements that operationalise the core components.

Relationship building

Supportive relationships between parents/carers and teachers, between children and teachers, and between children and parents are fundamental to school readiness.

Flexible activities to support relationship building include **teacher-initiated phone calls to parents**, **class newsletters sent to parents, joint student-parent homework, parent meetings**, along with **increased teacher responsiveness to students**. Teachers also play a role in enhancing the parent-child relationship by **providing at-home activities for parents and children to complete together**.
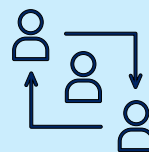
Practice example

Core component: Relationship building.

Flexible activity: Building teacher-parent relationships.

Implementation: This activity involves teachers consciously fostering trusting and warm relationships with the parents of their students. Teachers use a variety of opportunities to interact with parents: contacting parents via telephone, sending notes or newsletters home with students, preparing weekly handouts for parents, inviting parents to visit the classroom, and connecting with parents in small groups or via larger meetings.

Target groups: Teachers, parents.

Programs that use this flexible activity: The Incredible Years Teacher and Child Training Program, Second Step Early Learning.

Academic preparedness

Helping children to build skills that prepare them academically for starting school is a core component of the identified programs. Flexible activities to support academic preparedness include **building executive functioning capacity**, which involves developing working memory, emotional regulation and organisational skills, and **progressing language development and pre-literacy competencies**. Some of the specific techniques used by the identified programs include letter recognition and phonological awareness, 'brain games' and exposure to books.

Practice example

Core component: Academic preparedness.

Flexible activity: Progressing language development and pre-literacy competencies.

Implementation: This flexible activity helps children to develop language skills and pre-literacy capacities such as letter naming, phonological awareness, print conventions and comprehension. Specific literacy activities include a letter of the day (letter naming and letter–sound knowledge), a poem of the week (phonological awareness, concepts about print, language), and storybook and dramatic activities (understanding of narrative). It has also been implemented with infants during regular home visits. Here, coaches provide parents with developmentally appropriate learning material, such as a book or hand puppet, and demonstrate how to interact with infants in ways that develop language skills (e.g., imitating infant sounds).

Target groups: Children in foster care transitioning to kindergarten, pre-schoolers transitioning to school.

Programs that use this flexible activity: Kids in Transition to School, Smart Beginnings.

Readiness of the child for the classroom

Children need certain behavioural skills for a successful transition to the school classroom environment. Flexible activities to enhance classroom readiness include **developing skills in self-regulation**, **cultivating social-emotional skills**, and **learning classroom protocols and behaviours**. Specific techniques to support appropriate behavioural skill building include encouragement of student engagement and on-task work, pro-social problem solving, developing a feelings vocabulary, explicit teaching, modelling and reinforcing, and compliance with rules and teacher directions.

Practice example

Core component: Readiness of the child for the classroom.

Flexible activity: Developing skills in self-regulation.

Implementation: It is important for children to develop skills in self-regulation, as it enables them to participate in learning in the classroom, behave in socially acceptable ways and make friends as they learn to take turns in games and conversations. These skills include learning to regulate reactions to strong emotions like frustration, excitement, anger and embarrassment, to calm down after feeling strong emotions, and to focus on a task and control impulses. This activity is implemented through explicit teaching, modelling and reinforcing.

Target groups: Students transitioning to kindergarten.

Programs that use this flexible activity: Kids in Transition to School, Second Step Early Learning, Roots of Resilience.

Limitations of the evidence

The evidence identified in this review has some limitations:

- The technical specifications for the review limited inclusion to programs that have been subject to a randomised controlled trial or a high quality quasi-experimental design study, and excluded non-peer reviewed and grey literature. This means the findings only relate to programs that met the narrow scope for inclusion and had a rigorous evidence base. There may be additional studies addressing relevant programs and program outcomes that were not captured. It is important not to confuse a lack of evidence unearthed in the review with a lack of program effectiveness.

- Requiring such a high standard of evidence resulted in a positive bias towards US-based programs – all of the programs reviewed relied exclusively on US-based studies. Consequently, the review did not report on outcomes in relation to children who experience marginalisation and adversity in the Australian context, in particular Aboriginal children and children from culturally and linguistically diverse (CALD) backgrounds.

Where to from here?

The findings from the review allow us to assess current practice against evidence-informed models and build more of what works into program design and practice across services targeting vulnerable children. Some of the programs identified in the review are already being implemented in NSW (e.g. Second Step Early Learning). DCJ is applying evidence from the review to improve child and family support services.

The findings have implications for the selection and implementation of programs. Program ratings are one key consideration in deciding which programs to fund and deliver. The local context is also important. The best programs on offer should be implemented, however careful consideration should be given when adapting international programs to ensure that they are relevant to diverse Australian contexts. Programs should only be implemented after extensive consultation with practitioners and community members with cultural knowledge. Although the evidence base is currently limited, programs developed in the Australian context should not be overlooked.

In applying a core components approach, which seeks to overcome some of the challenges posed by manualised programs, the review helps to build a common evidence-informed framework that DCJ and service providers can use to develop and implement flexible, tailored services.

Implementation considerations

- whether the program has been manualised to help service providers deliver it with fidelity
- whether the program is flexible enough to be adapted to meet the needs of different groups without compromising program effectiveness
- characteristics of the target group/s that the program has been delivered effectively to
- the required skills and qualifications of the service provider
- how the program will work with other available services
- the purpose of implementing the program and how this aligns with current funding priorities
- program dosage.

The reviewed studies focused on behavioural change in children and families to improve school readiness. The studies gave much less attention to educator preparedness, and no attention to school culture and the role of the educational organisation in supporting children during this pivotal life stage. There is a need to build evidence about how schools can prepare for children, and the approaches that are effective in responding flexibly to children's needs. The review also highlights a need for more high quality Australian research examining the effectiveness of childhood interventions and the implementation of international programs in diverse Australian contexts, including specifically with Aboriginal and CALD families. Greater investment in rigorous evaluation of programs to build the body of evidence is vital.

More information

More information can be found in the full report: Stout B, Goward P, Dadich A, Grace R, Perry N, Knight J, Townley C, Ng J & Mugadza T 2022, Evidence bank rapid review: A rapid evidence review of early childhood programs to reduce harm and maltreatment and improve school readiness, Western Sydney University, Penrith, NSW.

Detailed program descriptions are available on DCJ's early intervention Evidence Portal.

Appendix 1: Evidence Rating Scale (NSW Department of Communities and Justice, 2021)

Rating	Direction of effect	Description
Well-supported by research evidence	Positive	• At least one high-quality* systematic review with meta-analyses based on randomised controlled trials reports statistically significant positive effects for at least one outcome • No studies show statistically significant adverse effects
Supported research evidence	Positive	• At least two high-quality randomised controlled trial and/or quasi-experimental design studies report statistically significant positive effects for at least one outcome, AND • Fewer randomised controlled trials of similar size and quality show no observed effects than show statistically significant positive effects for the same outcome(s), AND • No randomised controlled trials show statistically significant adverse effects
Promising research evidence	Positive	• At least one high-quality randomised controlled trial and/or quasi-experimental design study reports statistically significant positive effects for at least one outcome, AND • Fewer randomised controlled trials and/or quasi-experimental designs of similar size and quality show no observed effects than show statistically significant positive effects, AND • No randomised controlled trials and/or quasi-experimental designs show statistically significant adverse effects
Mixed research evidence (with no adverse effects)	Mixed	• At least one high-quality randomised controlled trial and/or quasi-experimental design reports statistically significant positive effects for at least one outcome, AND • An equal number or more randomised controlled trials and/or quasi-experimental designs of similar size and quality show no observed effects than show statistically significant positive effects, AND • No randomised controlled trials and/or quasi-experimental designs show statistically significant adverse effects

Rating	Direction of effect	Description
Mixed research evidence (with adverse effects)	Mixed	• At least one high-quality randomised controlled trial and/or quasi-experimental design reports statistically significant adverse effects for at least one outcome, AND • An equal number or more of randomised controlled trials and/or quasi-experimental designs show no observed effects than show statistically significant adverse effects, AND/OR • At least one high-quality randomised controlled trial and/or quasi-experimental design shows statistically significant positive effects for at least one outcome
Evidence fails to demonstrate effect	No effect	• At least one high-quality systematic review with meta-analyses based on randomised controlled trial and/or quasi-experimental design reports no observed effects for all reported outcomes, OR • At least one high-quality randomised controlled trial reports no observed effects for all reported outcomes • Criteria are not met for mixed research evidence (with or without adverse effects)
Evidence demonstrates adverse effects	Negative	• At least one high-quality systematic review with meta-analyses based on randomised controlled trial and/or quasi-experimental design reports statistically significant adverse effects for at least one outcome, OR • At least one high-quality randomised controlled trial and/or quasi-experimental design reports statistically significant adverse effects for at least one outcome, AND • Fewer randomised controlled trials and/or quasi-experimental designs show no observed effects, AND/OR • No randomised controlled trial and/or quasi-experimental design shows statistically significant positive effects

* High-quality indicates studies with low-to-moderate risk of bias.

Appendix 2: Characteristics of school readiness programs

Program (Study used to rate program)	Design		Risk of bias score	Sample size	Mode				Duration				Dosage				Evidence rating
	RCT[1]	QED[2]			Classroom	Home	Online	Health care	< 6 months	6-12 months	1-2 years	3+ years	Daily/Weekly	Fortnightly	Monthly	Variation over time	
The Incredible Years Teacher and Child Training Program (IY) (Webster-Stratton et al., 2008) *This universal prevention curriculum trains teachers to promote children's social competence and emotional self-regulation, reduce conduct problems, and involve parents in their children's learning.*	✓		5	120 classes 14 schools	✓							✓	✓				Promising
Family Check-Up (Lunkenheimer et al., 2008) *FCU is a brief, motivational intervention that supports parents' existing strengths as well as their engagement in additional parent training services when needed.*	✓		5	731 families		✓				✓						✓	Mixed (with no adverse effects)
Roots of Resilience (Lipscomb et al., 2021) *This program is an online professional development program for early childhood education (ECE) teachers in home and centre-based programs to strengthen resilience with children impacted by trauma.*	✓		5	17 classes 23 teachers 61 children			✓		✓							✓	Mixed (with no adverse effects)

1 Randomised controlled trial.
2 Quasi-experimental design study.

Communities and Justice

Program (Study used to rate program)	Design		Risk of bias score	Sample size	Mode				Duration				Dosage				Evidence rating
	RCT[1]	QED[2]			Classroom	Home	Online	Health care	< 6 months	6-12 months	1-2 years	3+ years	Daily/Weekly	Fortnightly	Monthly	Variation over time	
Smart Beginnings (SB) (Roby et al., 2021) *SB integrates universal (primary) and targeted (secondary) prevention programs, each focused on promoting positive parent-child interactions.*	✓		6	403 families		✓		✓		✓			✓				Promising
Second Step Early Learning (SSEL) (Upshur et al., 2019) *SSEL is a commercially available early learning kit for the classroom environment which seeks to develop children's social emotional competence and self-regulation to improve school readiness.*	✓		5	67 classes 187 teachers 770 students	✓				✓				✓				Mixed (with no adverse effects)
Kids in Transition to School (KITS) (Pears et al., 2012) *KITS provides a focused, short-term program to increase school readiness prior to kindergarten entry and to promote better subsequent school functioning in children in foster care.*	✓		4	192 families	✓					✓			✓				Mixed (with no adverse effects)
Kids in Transition to School (KITS) (Pears et al., 2013)	✓		5	192 families	✓					✓			✓				Mixed (with no adverse effects)

Endnotes

1 Centre for Education Statistics and Evaluation 2021, *Transition to school: literature review*, NSW Department of Education, Sydney, http://education.nsw.gov.au/cese.

2 OECD 2017, *Starting Strong V: transitions from early childhood education and care to primary education*, Starting Strong, OECD Publishing, doi:10.1787/9789264276253-en.

3 Sayers M, West S, Lorains J, Laidlaw B, Moore TG & Robinson R 2012, 'Starting school: a pivotal life transition for children and their families', *Family Matters*, vol. 90, pp. 45-56.

4 Schulting AB, Malone PS & Dodge KA 2005, 'The effect of school-based Kindergarten transition policies and practices on child academic outcomes', *Developmental Psychology*, vol. 41, no. 6, pp. 860-871, https://doi.org/10.1037/0012-1649.41.6.860.

5 Centre for Education Statistics and Evaluation 2021, *Transition to school: literature review*, NSW Department of Education, http://education.nsw.gov.au/cese.

6 NSW Department of Family and Community Services 2019, *Prevention and early intervention strategies*, NSW Government, Sydney.

7 Victoria Department of Education and Training 2017, Transition: *a positive start to school resource kit*, Department of Education and Training, Melbourne, https://www.education.vic.gov.au/childhood/professionals/learning/Pages/transkit.aspx#link90.

8 QCAA (Queensland Curriculum and Assessment Authority) 2015, *Successful transition to school: what does it look like?*, Queensland Government, https://www.qcaa.qld.edu.au/downloads/p_10/tts_success_trans_school.pdf.

9 NSW Department of Communities and Justice 2021, *The Evidence Portal: Technical Specifications*, accessed 14 January 2023, https://evidenceportal.dcj.nsw.gov.au/content/dam/dcj/evidence-portal/documents/evidence-portal-technical-specifications.pdf.

10 Centre for Education Statistics and Evaluation 2021. *Transition to school: literature review*, NSW Department of Education, Sydney, http://education.nsw.gov.au/cese.