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Intervention website: <https://www.pathseducation.co.uk>

GUIDEBOOK INTERVENTION INFORMATION SHEET

Paths Preschool/Kindergarten Curriculum

Please note that in the ‘Intervention summary’ table below, ‘child age’, ‘level of need’, and ‘race and ethnicities’ information is **as evaluated in studies**. Information in other fields describes the intervention as **offered/supported by the intervention provider**.

Intervention summary	
Description	PATHS® Preschool/Kindergarten Curriculum is a preschool-/school-based intervention for young children aged 3 to 6 years old. The intervention promotes emotional and social competencies and reduces aggression and behaviour problems in preschool-aged children, while simultaneously enhancing the educational process in the classroom. It is designed to be implemented as a two-year curriculum delivered by educators and counsellors in early years settings and primary schools.
Evidence rating	3+
Cost rating	1
Child outcomes	<ul style="list-style-type: none"> Supporting children’s mental health and wellbeing <ul style="list-style-type: none"> Improved social and emotional development Improved social behaviour . Enhancing school achievement and employment <ul style="list-style-type: none"> Improved school performance.
Child age (population characteristic)	3 to 6 years old
Level of need (population characteristic)	Targeted Selected

Foundations Guidebook – Intervention information sheet

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Intervention summary	
Race and ethnicities (population characteristic)	<ul style="list-style-type: none">• African American• European American• Hispanic• White.
Type (model characteristic)	Group
Setting (model characteristic)	<ul style="list-style-type: none">• Children's Centre or early years setting• Primary school.
Workforce (model characteristic)	<ul style="list-style-type: none">• Teacher• Early years educator• Counsellor.
UK available?	Yes
UK tested?	Yes

Model description

The PATHS Preschool/Kindergarten is an early years setting-based intervention targeting children between 3 and 6 years of age. The intervention promotes emotional and social competencies and reduces aggression and behaviour problems in preschool-aged children, while simultaneously enhancing the educational process in the classroom. It is designed to be implemented as a two-year curriculum delivered by educators and counsellors in early years settings and primary schools.

It was developed as a universal curriculum delivered over two years in 44 sessions of 20 to 30 minutes' duration each by preschool or primary school teachers to groups/classes of children.

PATHS lessons include instruction in: identifying and labelling feelings, expressing feelings, assessing the intensity of feelings, managing feelings, understanding the difference between feelings and behaviours, delaying gratification, controlling impulses, reducing stress, self-talk, reading and interpreting social cues, understanding the perspectives of others, using steps for problem-solving and decision-making, having a positive attitude towards life, self-awareness, non-verbal communication skills, and verbal communication skills.

The sessions are interactive and include a variety of activities including role-plays, group discussions, and games.

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Target population

Age of child	3 to 6 years
Target population	Can be provided as a Universal offer but generally a targeted approach to children living in families experiencing disadvantage

Please note that the information in this section on target population is as **offered/supported by the intervention provider**.



Theory of change

Why		Who	How	What		
Science-based assumption	Science-based assumption	Science-based assumption	Intervention	Short-term outcomes	Medium-term outcomes	Long-term outcomes
Poor emotional awareness and literacy at the transition to school may increase the risk of later emotional and behavioural difficulties, which may affect educational attainment.	Emotional awareness, self-control, and interpersonal problem-solving skills support positive adjustment outcomes such as improved peer relations and engagement in learning in young children.	Preschool children from disadvantaged backgrounds face risks to their social-emotional development that can impact on their later adjustment outcomes.	The PATHS curriculum is focused on teaching students skills to (1) become more aware of and be able to label their own emotions, (2) be able to take others' points of view and assess others' emotions, (3) use new strategies for self-control (regulation) to be able to calm down, (4) use new interpersonal problem-solving strategies to develop and carry out effective plans for interpersonal and school-related challenges.	<ul style="list-style-type: none"> • Children have better accuracy in labelling and discussing their own and others' emotions • Children are better able to calm down and self-regulate when upset or distressed • Children have improved abilities to describe interpersonal problems • Children are able to better communicate positively with peers and adults 	<ul style="list-style-type: none"> • Children have lower rates of behaviour problems • Children have lower rates of internalising problems • Children show improvements in engagement and attention in the classroom. 	<ul style="list-style-type: none"> • Reduced risk of later mental health problems • Reduced risk of antisocial behaviour problems • Increased educational attainment.



Implementation requirements

Who is eligible?	Children aged 3 to 6 years old attending an early years setting or primary school.
How is it delivered?	PATHS Preschool/Kindergarten Curriculum is delivered over two years in 44 sessions of 20 to 30 minutes' duration each by preschool or primary school teachers to groups/classes of children.
What happens during the intervention?	<p>PATHS lessons include instruction in identifying and labelling feelings, expressing feelings, assessing the intensity of feelings, managing feelings, understanding the difference between feelings and behaviours, delaying gratification, controlling impulses, reducing stress, self-talk, reading and interpreting social cues, understanding the perspectives of others, using steps for problem-solving and decision-making, having a positive attitude towards life, self-awareness, non-verbal communication skills, and verbal communication skills.</p> <p>The sessions are interactive and include a variety of activities including role-plays, group discussions, and games.</p>
Who can deliver it?	The practitioner who delivers this intervention is a preschool educator or classroom teacher.
What are the training requirements?	The practitioners have 14 hours of intervention training. Booster training of practitioners is recommended.
How are practitioners supervised?	It is recommended that practitioners are supervised by one intervention developer supervisor.
What are the systems for maintaining fidelity?	<p>Intervention fidelity is maintained through the following processes:</p> <ul style="list-style-type: none"> • Training manual • Other printed material • Face-to-face training • Fidelity monitoring • In-class coaching support.
Is there a licensing requirement?	No



Implementation requirements (Cont.)

*Contact details	<p>Contact person: Mairead Ewart</p> <p>Organisation: Barnardo's</p> <p>Email address: mairead.ewart@barnardos.org.uk</p> <p>Websites: www.pathseducation.co.uk/ www.pathseducation.com</p> <p>*Please note that this information may not be up to date. In this case, please visit the listed intervention website for up to date contact details.</p>
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Evidence summary

PATHS Preschool/Kindergarten curriculum's most rigorous evidence comes from several RCTs conducted in the United States.

Statistically significant child-level outcomes were evident through direct assessments and teacher reports and include children's emotional knowledge, social problem-solving, social skills, and work-related skills. Study 1 found a longer-term impact of the intervention on teacher-reported expected grade retention.

PATHS Preschool/Kindergarten can be described as evidence-based: it has evidence from at least one rigorously conducted RCT or QED demonstrating a statistically significant positive impact on at least one child outcome, as well as at least one more RCT or QED.

Child outcomes			
Outcome	Improvement index	Interpretation	Study
Improved social problem-solving	+6	<p>0.16 point improvement on the competence response subscale of the Challenging Situations Task</p> <p>Direct assessment</p> <p>Six months</p>	Study 1
Improved knowledge of emotions	+11	<p>0.06 point improvement on the Facial Emotions Identification task</p> <p>Direct assessment</p> <p>6 months</p>	Study 1



Improved work-related skills	+8	0.20-point improvement on the Work-related skills subscale of the Cooper-Farran Behavioral Rating Scale Teacher report Six months	Study 1
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Search and review

	Number of studies
Identified in search	3
Studies reviewed	3
Meeting the L2 threshold	2
Meeting the L3 threshold	1
Contributing to the L4 threshold	0
Ineligible	1

Individual study summary: Study 1

Study 1	
Study design	RCT
Country	United States
Sample characteristics	<ul style="list-style-type: none"> 1,290 children between 4 and 5 years old (average 4.43 years old) from 104 Head Start centres across the United States The Head Start Centre met eligibility criteria Children were eligible for the study if their parent consented, they were 4 years old, English or Spanish was their primary language, and they were not foster children.



Study 1	
Race, ethnicities, and nationalities	<ul style="list-style-type: none"> • 43% Hispanic • 33% African American • 16% Non-Hispanic White.
Population risk factors	<ul style="list-style-type: none"> • The average monthly household income was about \$1,800 • 11% were receiving Temporary Assistance for Needy Families • 59% were receiving food stamps • 18% lived in transient housing.
Timing	Assessments took place pre-intervention, during early delivery, at six-month delivery, and at one-year follow-up
Child outcomes	<ul style="list-style-type: none"> • Improved knowledge of emotions – direct assessment • Improved social problem-solving – direct assessment • Improved social skills – teacher report • Improved work-related skills – teacher report • Reduced grade retention – teacher report.
Other outcomes	<ul style="list-style-type: none"> • Improved teacher social-emotional instruction • Improved teacher instructional support.
Study Rating	3
Citation	Morris, P., Mattera, S. K., Castells, N., Bangser, M., Bierman, K., & Raver C. (2014) <i>Impact findings from the Head Start CARES demonstration: National evaluation of three approaches to improving preschoolers' social and emotional competence</i> . MDRC.

Brief summary

Population characteristics

This study involved 1,290 children aged 4 to 5 years old living in the United States. The study was conducted in 104 Head Start preschool settings. 51.2% were boys. Most of the children were 43% Hispanic or 33% African American, the average monthly household income approximately \$1,800 and 59% of the children's families were receiving food stamps.

Study design

The study was a cluster RCT, with randomisation at the level of Head Start centre. 104 Head Start centres were randomly assigned to one of four groups – Incredible Years, PATHS Preschool/Kindergarten curriculum, Tools of the Mind, and a business-as-usual control. Originally, 544 children were assigned in the PATHS group, and 512 in the control group; this sample size increased by the six-month follow-up.



Baseline assessments on demographics suggest that randomisation was successful for producing groups which did not systematically differ. However, differences were found between intervention group and control for baseline outcome measures; this was considered partly due to the baseline assessment of children taken with early delivery of the intervention. Additional sensitivity analyses were conducted controlling for baseline differences.

Randomly selected samples of children were assessed within the intervention and control groups, with an average of seven children per class for baseline scores. Additional families were included in the follow-up, an average of 10 per class.

Measurement

Assessments took place at four time periods: baseline teacher and classroom assessment; (spring pre-intervention); baseline assessments of children, early in implementation of the activity (autumn early delivery); post-intervention measurement, direct assessment of children, preschool teacher reports and observations approximately six months after the start of delivery (spring Preschool); and kindergarten teacher and parent-reports at one-year follow-up (spring Kindergarten).

- **Child report measures** included the head-to-toes task, the pencil tap task, the Challenging Situations task, Facial Emotions Identification, Emotions situation task, the Woodcock-Johnson III Letter-word Identification Subscale, the Woodcock-Johnson III Applied Problems Subscale, and the Expressive One-Word Picture Vocabulary Test.
- **Teacher report measures** at six months and one-year follow-up included: the Behaviour Problems Index, the Cooper-Farran Behavioral Rating Scales, The Academic Rating Scale (ARS), the Social Skills Rating Scale, and the Social Skills Student-Teacher Relationship Scale. At one-year follow-up teachers additionally reported Child Retention (whether the child is expected to be retained in kindergarten), and receipt of special services.
- **Parent report measures** included the Behaviour Problems Index, the Social Skills Rating Scale, and report of Receipt of Special Education Services.
- **Researcher-led observation** included the Classroom Assessment Scoring System (CLASS) and the Adapted Teaching Style Rating Scale (TRSR).

Study retention

Baseline

1,056 children participated in baseline assessments, 544 in the intervention group and 512 in the control group.

Post-intervention

1,290 children participated in the six-month assessments, 669 in the intervention group and 621 in the control group. Child attrition within the intervention group was recorded at 15% comparable to attrition within the control group. Given the smaller size of the sample at baseline – attrition calculations are not possible.



One-year follow-up

1,260 children participated in the one-year follow-up assessments, 656 in the intervention and 604 in the control group. Given the smaller size of the sample at baseline – attrition calculations are not possible.

Results

Data-analytic strategy

The impact of PATHS Preschool was assessed by comparing child, classroom, and teacher outcomes of the intervention to those of the control group. Multilevel modelling was used to account for the nesting of children within classrooms, and classrooms within centres. Adjustments were made by including covariates – for block randomisation, baseline-scores, age, child expressive language and kindergarten teacher. The effect size was computed as the impact divided by the standard deviation of the control group.

Findings

This study identified statistically significant positive impact on child outcomes. After six months, statistically significant improvements were observed for children in the PATHS –Preschool intervention group compared to the control group for children’s knowledge of emotions and their social problem-solving skills. Improvements were also identified for children’s learning behaviours and social skills.

At one-year follow-up, no effects of the intervention were found for parent- or teacher-reports other than positive impact of the intervention on reducing grade retention. Kindergarten teachers indicated statistically significantly lower levels of expected grade retention.

In terms of teacher outcomes, there were statistically significant differences between the observations of the intervention and control group. Positive impact of the intervention was observed for social-emotional instruction (Adapted TSRS – observation) and teacher’s instructional support, (CLASS Preschool Version – observation).



Study 1: Outcomes table

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Child outcomes					
Executive functioning Head-to-toes	Head-to-toes Direct assessment	-0.06*	No	1,290	Six months
Executive functioning Pencil tap	Pencil tap Direct assessment	0.07	No	1,290	Six months
Facial emotions identification	Direct Assessment Emotion knowledge	0.29	Yes	1,290	Six months
Emotions situation identification	Direct Assessment Emotion knowledge	0.23	Yes	1,290	Six months
Challenging situations competent response	Direct Assessment Social problem-solving skills	0.17	Yes	1,290	Six months
Challenging situations aggressive response	Direct Assessment Social problem-solving skills	-0.10	No	1,290	Six months
Letter-word Identification	Direct Assessment Pre-academic skills Woodcock-Johnson Letter word Identification	-0.01	No	1,290	Six months



Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Applied problems	Direct Assessment Pre-academic skills Woodcock-Johnson Applied problems	0.07	No	1,290	Six months
Expressive One-word Picture Vocabulary Test	Direct Assessment Pre-academic skills Expressive One-word Picture Vocabulary Test	-0.06	No	1,290	Six months
Social skills	Teacher report SSRS	0.19	Yes	1,290	Six months
Social skills	Teacher-report SSRS	-0.01	No	1,260	One-year follow-up
Interpersonal skills	Teacher report Cooper-Farran Behavioral Rating Scales	0.08	No	1,290	Six months
Behaviour problems	Teacher report BPI	-0.04	No	1,290	Six months
Behaviour problems	Teacher-report Total score BPI	-0.07	No	1,260	One-year follow-up



Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Learning behaviours	Teacher-report Work-related skills Cooper-Farran Behavioral Rating Scales	0.20	Yes	1,290	Six months
Learning behaviours	Teacher-report Work-related skills Cooper-Farran Behavioral Rating Scales	0.06	No	1,260	One-year follow-up
General knowledge	Teacher-report ARS Pre-academic skills	0.11	No	1,290	Six months
General knowledge	Teacher-report ARS Academic skills	0.01	No	1,260	One-year follow-up
Language and literacy	Teacher-report ARS Pre-academic skills	0.17	No	1,290	Six months
Language and literacy	Teacher-report ARS Academic skills	- 0.01	No	1,260	One-year follow-up



Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Mathematical thinking	Teacher-report ARS Pre-academic skills	0.14	No	1,290	Six months
Mathematical thinking	Teacher-report ARS Academic skills	- 0.01	No	1,260	One-year follow-up
Behaviour problems	Parent-report Total score BPI	-0.01	No	1,260	One-year follow-up
Social skills	Parent-report SSRS	-0.08	No	1,260	One-year follow-up
Child receipt of special educational services	Parent-report	0.01	No	1,260	One-year follow-up
Expectation of child retention	Teacher-report	-0.24	Yes	1,260	One-year follow-up
Child receipt of special services	Teacher-report	-0.01	No	1,260	One-year follow-up
Teacher/Classroom-level outcomes					
Social-emotional instruction	TSRS Observation	0.92	Yes	154 classrooms	Six months



Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Scaffolding	TSRS Observation	0.09	No	154 classrooms	Six months
Emotional support	CLASS Observation	0.13	No	154 classrooms	Six months
Classroom organisation	CLASS Observation	0.02	No	154 classrooms	Six months
Instructional support	CLASS Observation	0.27	Yes	154 classrooms	Six months
Literacy focus	CLASS Observation	0.02	No	154 classrooms	Six months
* All effect sizes are calculated by dividing the mean difference between groups by the standard deviation of the control group, which is similar but slightly different to Cohen's d.					

Individual study summary: Study 2

Study 2	
Study design	QED
Country	United States
Sample characteristics	<ul style="list-style-type: none"> • 292 children between 3 to 4 years old • Eligibility was based on child's primary language being English and parental consent.
Race, ethnicities, and nationalities	<ul style="list-style-type: none"> • 47% African American • 38% European American • 10% Hispanic.



Study 2	
Population risk factors	<ul style="list-style-type: none"> Families attending Head Start centres 46% of caregivers completed high school or had GED Mean annual income for families was \$7,039.
Timing	<ul style="list-style-type: none"> Baseline Post-intervention.
Child outcomes	<ul style="list-style-type: none"> Improved social and emotional skills relating to interpersonal relationships and emotion regulation (parent report) Improved social skills (teacher report) Reduced social withdrawal (teacher report) Improved receptive emotion vocabulary (direct assessment) Improved emotion expression knowledge and anger bias (direct assessment).
Other outcomes	None
Study Rating	2
Citation	Domitrovich, C. E., Cortes, R. C. & Greenberg, M. T. (2007) Improving young children's social and emotional competence: A randomized trial of the preschool 'PATHS' curriculum. <i>The Journal of Primary Prevention</i> . 28(2), 67–91.

Brief summary

Population characteristics

This study involved a cluster QED conducted in Head Start preschool settings within two cities in central Pennsylvania, in the United States. Children were between 3 and 4 years old (average 4.3). 49% of children were boys. The majority of the sample was African American (47%) and European American (38%). All children were accessing Head Start early education services and the mean annual income for families was \$7,039.

Study design

Matched pairs of classrooms were randomly assigned to PATHS Preschool/Kindergarten curriculum or to a wait-list control (4 out of 20 classrooms were not randomly assigned due to two classes being involved in the pilot tests). The wait-list control was provided access to the intervention the year after the evaluation.

The intervention and control groups differed by ethnicity, age, and special needs status at pre-intervention and as such were included as covariates in the analyses.



Measurement

Assessments took place at the beginning of the school year (pre-intervention) and at the end of the school year (post-intervention) for both the intervention and control classrooms.

- **Researcher-led direct assessments** included: a revised version of the Kusche Emotional Inventory (KEI; Kusche, 1984), a subset of pictures from the Assessment of Children's Emotions Scales (ACES; Schultz et al., 2001) at post-test only, the Denham Puppet Interview (DPI; Denham, 1986) at post-test only, the day/night task (Diamond & Taylor, 1996), an adaptation of the Tapping test (Luria, 1966), the Leiter-Revised Assessment Battery (Roid & Miller, 1997), and the challenging situations task (CST, Denham, Bouril, & Belouad, 1994).
- **Teacher report measures** included the Preschool and Kindergarten Behavior Scales (PKBS; Merrell, 1996)
- **Parent report measures** included the Head Start Competence Scale (HSCS; Domitrovich, Cortes, & Greenberg, 2001).

Study retention

Post-intervention

82% (201) of children completed post-intervention assessments, based on 246 children assessed at baseline.

Results

Data-analytic strategy

The intervention effect was tested using an analysis of covariance. The model included pretest scores for the outcome variables and gender. Ethnicity, age, and special needs status were included as covariates in all models because the intervention and control groups differed on these variables at pre-test. On the direct child assessments, a measure of child verbal ability was also included as a covariate in the model to account for its potential impact on children's performance.

Findings

This study identified statistically significant positive impacts on child outcomes. Intervention children had higher emotion knowledge skills (receptive emotion vocabulary, emotion expression knowledge, and anger bias) and were rated by teachers as more socially competent (interpersonal relationships and emotion regulation, improved social skills). Teachers also rated intervention children as less socially withdrawn.

Limitations

The conclusions which can be drawn from this study are limited by the non-random assignment of some clusters, and the lack of multilevel modelling to account for clustered data.



Study 2: Outcomes table

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Child outcomes					
Child receptive emotion vocabulary	KEI Direct assessment	0.36	Yes	201	Post-intervention
Children's affective perspective-taking skills	DPI Direct assessment	0.28	Yes	201	Post-intervention
Children's emotion expression	ACES Direct assessment	0.37	Yes	201	Post-intervention
Children's Anger Bias	ACES anger bias Direct assessment	0.40	Yes	201	Post-intervention
Inhibitory control	Day/Night task Direct assessment	Not reported	No	201	Post-intervention
Inhibitory control	Tapping test Direct assessment	Not reported	No	201	Post-intervention
Children's visual-spatial memory and attention	Leiter-Revised Assessment Battery Direct assessment	Not reported	No	201	Post-intervention
Adaptive problem solving	CST Direct assessment	Not reported	No	201	Post-intervention



Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Head start Competence	HSCS; Teacher report	0.46	Yes	201	Post-intervention
Social skills Composite	PKBS; Teacher report	0.48	Yes	201	Post-intervention
Social cooperation	PKBS; Teacher report	0.37	Yes	201	Post-intervention
Social interaction	PKBS; Teacher report	0.50	Yes	201	Post-intervention
Social independence	PKBS; Teacher report	0.26	Yes	201	Post-intervention
Externalising Composite	PKBS; Teacher report	nr	No	201	Post-intervention
Aggression	PKBS; Teacher report	nr	No	201	Post-intervention
Explosive behaviour	PKBS; Teacher report	nr	No	201	Post-intervention
Attention problems	PKBS; Teacher report	nr	No	201	Post-intervention
Internalising Composite	PKBS; Teacher report	nr	No	201	Post-intervention
Social withdrawal	PKBS; Teacher report	0.24	Yes	201	Post-intervention



Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Anxiety	PKBS; Teacher report	nr	No	201	Post-intervention
Head start Competence	HSCS; Parent report	0.36	Yes	201	Post-intervention
Social skills Composite	PKBS; Parent report	nr	No	201	Post-intervention
Social cooperation	PKBS; Parent report	nr	No	201	Post-intervention
Social interaction	PKBS; Parent report	nr	No	201	Post-intervention
Social independence	PKBS; Parent report	nr	No	201	Post-intervention
Externalising Composite	PKBS; Parent report	nr	No	201	Post-intervention
Aggression	PKBS; Parent report	nr	No	201	Post-intervention
Explosive behaviour	PKBS; Parent report	nr	No	201	Post-intervention
Attention problems	PKBS; Parent report	nr	No	201	Post-intervention
Internalising Composite	PKBS; Parent report	nr	No	201	Post-intervention



Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Social withdrawal	PKBS; Parent report	nr	No	201	Post-intervention
Anxiety	PKBS; Parent report	nr	No	201	Post-intervention

Other studies

The following studies were identified for this intervention but did not count towards the intervention's overall evidence rating. An intervention receives the same rating as its most robust study or studies.

Little, M., Berry, V., Morpath, L., Blower, S., Axford, N., Taylor, R., & ... Tobin, K. (2012). The impact of three evidence-based programmes delivered in public systems in Birmingham, UK. *International Journal of Conflict and Violence*. 6 (2), 260–272. **This reference refers to a randomised control trial, conducted in the UK.**

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Note on provider involvement: This provider has agreed to Foundations' terms of reference (or the Early Intervention Foundation's terms of reference), and the assessment has been conducted and published with the full cooperation of the intervention provider.