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# Early childhood teachers' perspectives of growth mindset: Developing agency in children

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**THE INTEGRATION OF MINDSET THEORY** into classrooms can assist children in optimising academic achievement, increasing their agency for learning. The development of a growth mindset allows children to exercise autonomy over their learning, helping them to develop positive lifelong learning habits for the twenty-first century. This paper explores early childhood teachers' perspectives of mindset and the role of a growth mindset in developing children's agency for learning. Despite increasing research in this field, little is known about the perspectives that early childhood teachers have of mindset. This paper reports on the data from a study that describes teachers' perspectives towards fostering a growth mindset in children in the early years of school. Ninety-five Western Australian early childhood teachers from Kindergarten to Year 2 completed a survey that examined their perspectives of growth mindset. The analysis revealed competing knowledge about what teachers believe about mindset, and their ability to implement it. The information shared by teachers has implications for quality learning and teaching in the early years.

## Introduction

An increasing body of research has identified that, in the future, children will need to be active problem solvers and communicators of ideas, with an appetite for learning (Bialik, Bogan, Fadel & Horvathova, 2015; Masters, 2014). Other than closing the gap in reading, writing and numeracy skills, Conley (2014) identifies an issue for the twenty-first century: the development of metacognitive learning strategies, where active learners are able to take on new challenges that include intentional, self-regulated learning and reflective thinking.

The *Melbourne Declaration on Educational Goals for Young Australians* (MCEETYA, 2008), endorsed by Australian Education Ministers, aims to improve educational outcomes for Australian children in the twenty-first century. The Declaration contains two important goals for Australian learners. The second of these goals, relating to improved educational outcomes, states that: 'All young Australians become successful learners', requiring them to 'develop their capacity to learn and play an active role in their own learning' (MCEETYA, 2008, p. 8). It further describes learners being motivated to reach their full potential and to be confident and creative individuals, requiring the development of personal values and attributes such as resilience. The national focus on preparing children for the twenty-first century provides an opportunity for the

implementation of mindset theory to assist children in being creative, connected and engaged learners who exhibit agency over their learning.

Mindsets are the beliefs that people hold about their most basic qualities such as intelligence, talents and personality. They play a significant role in student success (Blackwell, Trzesniewski & Dweck, 2007; Dweck, 2016). In decades of research on achievement and success, psychologist Carol Dweck (1999) has shown that there is more to student success than cognitive ability, curriculum and instruction. Dweck (1999) identified two types of mindset that sit on either ends of a continuum: a growth mindset and a fixed mindset. Children can be growth mindset oriented, where they see their ability as something that can be increased with time and effort, and frame the experience of school in terms of learning goals. Other children can be fixed mindset oriented, where they see their abilities as static and inflexible, and frame school work in terms of performance goals (Dweck, 1999). These mindsets play a significant role in motivation, self-regulation, achievement and interpersonal processes. They also assist children in further developing their social-emotional skills (Dweck, 1999).

Children's social competence plays an essential part in the development of agency for learning. Data from the Australian Early Development Census (AEDC) (Commonwealth of Australia, 2015) shows developmental

vulnerabilities in the social competence domain increased from 9.3 per cent in 2012 to 9.9 per cent in 2015, across the nation. Any decline in the development of Australian children's social-emotional skills is concerning. Mindset theory provides teachers with the knowledge and skills to transform learning in the early childhood (EC) education environment and to develop a greater sense of agency in children over their learning (Dweck, 2016). Knowing about EC teachers' perspectives of mindset can benefit policy-makers, teachers and children, to develop skills in children that will enable them to be successful learners, equipped for the twenty-first century.

The early years, as mentioned in this paper, refer to the years between Kindergarten and Year 2 (K–2) in the Western Australian schooling system, with the age group ranging from 3.5 years to 7.5 years.

## Literature review

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The globalisation of the world's economy, advances in technology and a renewed focus on career preparation have positioned twenty-first century readiness at the forefront of education. However, Conley (2014) claims that the influence of educational policy has ensured a narrow focus on content knowledge of core subjects and, therefore, schools have lost sight of the learning processes required to master the content. He argues that the 'economy and society of the 21st century has already shown itself to be one that demands competent, adaptive learners who can drive their own learning processes' (Conley, 2014, p. 28). Consequently, the necessity to create twenty-first century learners requires teachers to broaden their vision of the elements that are important for children's school success. Such elements include social-emotional competence, culture, relationships and intellectual curiosity, alongside academic knowledge and skills (Bowman, 2002).

A review of Australian and international twenty-first century learning frameworks identifies a wide range of skills and related dispositions that are regularly considered as vital for schooling (Lamb, Maire & Doecke, 2017). These are: critical thinking, creativity, metacognition, problem solving, collaboration, motivation, self-efficacy, conscientiousness and perseverance. It seems the challenges of the twenty-first century require learners to make a deliberate effort to cultivate their personal growth. This includes the development of character traits such as resilience, mindfulness, courage, leadership and mindset (Bialik et al., 2015). Dweck (2009) argues that teachers who foster a growth mindset are paving the way for the development of twenty-first century learning skills in children.

Teachers have a significant role to play in helping to prepare children for the twenty-first century. They need to foster not only learners' cognitive development but also their non-cognitive development. Non-cognitive skills such as critical-thinking skills, problem-solving skills, social skills,

persistence, agency, creativity, mindset and self-control are components of social-emotional development that can be addressed in the early years (García, 2014). These skills are called non-cognitive or metacognitive because they are not the specific or general intellectual skills that are typically implicated in learning. Mindset skills play a central role in the exercise of personal agency for learning. Furthermore, children's ability to reach their full learning potential is influenced by their mindset (García, 2014).

Encouraging children to be partners in their own learning increases agency and can improve educational outcomes. Allowing children to have some autonomy over what they learn and how they learn helps them develop a growth mindset and lifelong learning habits (DET, 2018). A recent report, commissioned by the Australian government to review the Australian education system, states that school education must 'Equip every child to be a creative, connected and engaged learner in a rapidly changing world' (DET, 2018, p. x). Furthermore, the report states that 'Every young Australian should emerge from schooling as a creative, connected, and engaged learner with a growth mindset that can help to improve a student's educational achievement over time' (DET, 2018, p. x).

## Mindset theory

Mindset is a valuable tool in promoting agency for young learners, as it assists children to take responsibility for their own learning (Dweck, Walton & Cohen, 2014). Australia's *Early Years Learning Framework* (DEEWR, 2009) supports the development of agency and outlines the need for children to know themselves and their ability to meet challenges in everyday life. Carlton and Winsler (1998) identify the importance of the EC years in establishing robust intrinsic motivational orientations, which last a lifetime, and found that many school-aged children rely on extrinsic-motivation learning strategies. Children who are intrinsically motivated gain greater knowledge, experience more enjoyment from their learning and, consequently, hold a more positive view of themselves as learners (Ford & Thompson, 1985; Pintrich & Schunk, 2002). Intrinsically motivated children are more likely to persist towards their goal-directed activities than those children who are extrinsically motivated (Ford & Thompson, 1985; Pintrich & Schunk, 2002).

Children can be either learning-goal or performance-goal oriented in relation to their achievement (Elliott & Dweck, 1988). Children who are learning-goal focused are intent on developing mastery over time, and demonstrate more resilience towards learning when it comes to failures and setbacks (Elliott & Dweck, 1988). Children who are performance-goal oriented succumb to the helpless response as they only focus on the adequacy of their ability, which leads to impaired performance.

Initially, it was thought that young children were protected from the negative effects of failure and did not link their

failure with helpless responses, as seen in those with a performance-goal orientation. However, Dweck's empirical work has shown that children as young as three-and-a-half can display a helpless response when confronted with failure, through evidence of self-blame, negative feelings, plummeting expectations, low persistence and a lack of constructive strategies (Cain & Dweck, 1995; Heyman, Dweck, & Cain, 1992). Research by Smiley and Dweck (1994) indicates that many four-year-olds were sacrificing valuable learning opportunities to 'look good'. These children with performance goals lacked confidence and avoided many new learning opportunities to avoid feeling inadequate when they were uncertain of a good outcome. Importantly, Dweck (1999) emphasised that EC settings can change children's learning goals, for better or worse.

The goal orientation that learners hold influences their motivation for learning (Elliott & Dweck, 1988). Early childhood teachers have reported noticeable differences in children's motivation as a result of the academic demands placed on children in the early years (Barblett, Knaus & Barratt-Pugh, 2016). Factors affecting children's motivation, reported by teachers, include: the pushdown of curriculum requirements into the younger years; an earlier emphasis on the National Assessment Program for Literacy and Numeracy (NAPLAN) testing; and the expectation that children will complete more complicated tasks at an earlier age in a more formal learning environment (Barblett et al., 2016). Consequently, teachers have a responsibility to assist young learners in developing a mindset whereby they thrive on challenges, work towards goals and begin to recognise the power of effort and resilience. This suggests that equipping children with the knowledge and ability to develop their mindset in the early years can assist children with future academic success (Bialik & Fadel, 2015).

The early years are a crucial window for creating the foundations that enable children to become creative, entrepreneurial, resilient and capable learners (O'Connell, Fox, Hinz & Cole, 2016). Furthermore, success at school involves both social-emotional and cognitive skills because readiness for learning is affected by social learning, attention and self-control (Conti & Heckman, 2013; Duncan & Magnuson, 2011). Non-cognitive skills such as mindset are more malleable than cognitive skills and, so, are appropriate targets for intervention and prevention to ensure children achieve academic success (Almlund, Duckworth, Heckman & Kautz, 2011).

Dweck et al. (2014), in a review of research on academic tenacity (working hard and working smart), established several factors that promote long-term learning and achievement. Non-cognitive factors included mindset, social belonging, self-regulation and self-control. Mindset refers to children's beliefs about their intelligence and helps children develop resilience for learning (Dweck & Leggett, 1988). Children's sense of social belonging, including the quality of their relationships with students and teachers, is

linked to long-term motivation and school success (Walton & Cohen, 2011). Self-regulatory skills—those that allow children to stay on task and navigate obstacles—also contribute to academic success. Self-control is an even stronger predictor of children's academic success than their IQ scores (Duckworth & Seligman, 2005).

Critics of Dweck's work on mindset argue that the model lacks complexity and is seemingly one-dimensional and dualistic despite the success of interventions. Mindset theory claims that individuals develop self-beliefs about their intelligence. However, researchers are uncertain of other factors that may influence beliefs in intelligence, including stability of intelligence over time, hereditary and environmental factors (Gelman, Heyman & Legare, 2007; Gottfried, Gelman & Schultz, 1999; Haslam, Bastian, Bain & Kashima, 2006). Ericsson and Pool (2016) claim that a growth mindset is not enough, and that a third mindset of deliberate practice is needed. The general principles of deliberate practice include maintaining an intense focus, staying on the edge of one's comfort zone, getting immediate feedback, identifying weak points and developing practice techniques designed specifically to address those weaknesses.

### **Teachers' perspectives on mindset theory**

Teacher perspectives are defined by Pratt and Associates in terms of what we 'do as teachers and why we think such actions are worthy and justified' (1998, p. 10). The term 'perspectives' has been used throughout this paper to describe teachers' first-person point of view about mindset theory. The establishment of teacher perspectives informs systemic change in order to develop strategies that transform teachers' knowledge, beliefs and views about mindset theory. Many studies have established teacher perspectives to provide a valuable insight into teacher beliefs and views (Choy, 2005; Clough, 2015; Kilpatrick, 2012). The following studies investigated teachers' perspectives of mindset.

Research conducted by the Education Week Research Center (2016) in the United States of America (USA) sought to establish teachers' views and experiences of integrating mindset. The original survey examined teachers' perspectives, professional development and training, and classroom practices as they relate to learning mindsets. The survey was administered in May 2016 to a national sample of 600 K–12 teachers, who were registered users of the Education Week website. The survey findings offered an insight into the role of growth mindset in the classroom and how teachers rate their own familiarity with growth mindset, its importance for student achievement, and its impact on their instruction. Key findings include: the majority (77 per cent) of teachers indicated they were familiar with mindset theory; nearly all teachers (98 per cent) agreed that using growth mindset in the classroom would lead to improved student learning; and more than 90 per cent believed growth mindset was associated with excitement about learning, persistence, high levels

of effort and participation in class. However, only 20 per cent of the teachers strongly believed they were good at fostering a growth mindset in their own students. Eighty-five per cent of the teachers wanted more professional development related to growth mindset. While this survey offers some insight into teacher views on mindset, it did not break down the data to indicate EC teacher responses separately to all teacher (K–12) responses.

A study of mindset by Nestor (2017), with 43 K–5 teachers, explored how teachers perceive mindset informing instruction, and examined the nature of teachers' professional development related to mindset. The study was conducted at a suburban elementary school outside Pennsylvania (USA). The survey was designed to collect data using multiple-choice and open-ended items. The results indicated that all teachers believed children can and should have a growth mindset, and fostering a growth mindset is part of a teacher's duties and responsibilities. Less than half of the participants (33 per cent) strongly agreed that they were good at fostering a growth mindset. The findings suggested that teachers desire more effective training and professional development to alleviate some of the perceived challenges faced when implementing growth mindset into their teaching practices.

EC teacher perspectives of mindset are poorly understood with the majority of research conducted on adolescents (Blackwell et al., 2007; Romero, Master, Paunesku, Dweck & Gross, 2014; Yeager & Dweck, 2012). The findings of these studies suggest that changing student beliefs about the nature of intelligence made a difference in students' attitudes and performance. The students who believe or were taught that their intelligence is malleable and can be developed, tended to show higher achievement in school work. It is acknowledged that further research needs to be completed in the EC area to customise the teaching of growth mindset for children to be developmentally appropriate (Yeager, Paunesku, Walton & Dweck, 2013).

This study contributes to the evidence base by establishing EC teachers' perspectives on mindset. The following three research questions were addressed:

1. What do EC teachers know about mindset?
2. How do EC teachers feel about fostering a growth mindset?
3. What factors do EC teachers rate as important for children's success in learning?

## Methodology

A constructivist interpretivist paradigm frames this study. Within this paradigm, truth and meaning are created by the participant's interactions with the world. Therefore, meaning is constructed not discovered. People actively seek out, select and construct their own views and learning through interactions (Gray, 2009). 'In other words, cognition is generative and

active rather than receptive and passive' (Cohen, Manion & Morrison, 2018, p. 23). This study sought to investigate the interpretations participants held by establishing their views in relation to mindset theory. Hence, the focus of this study was on understanding the meanings, purposes and intentions the participants give to their own actions (Given, 2008).

The research aim of this study suited a mixed methods approach and employed both quantitative methods using closed questions and qualitative methods through the use of two open-ended questions. A mixed methods design allowed the researcher to '... uncover information and perspective, increase corroboration of the data, and render less biased and more accurate conclusions' (Reams & Twale, 2008, p. 133). The development of an online survey provided a wider context for understanding teacher perspectives of mindset. This enabled the data to be collected quickly and inexpensively from a large number of people. The use of a survey also suited the research questions as it allowed the researcher to describe frequencies, prevalence and attitudes (Kervin, Vialle, Howard, Herrington & Okely, 2015).

Given the paucity of empirical research in relation to mindset in the early years, there were very few established survey instruments on which to base the items for the survey. Survey questions were created after adapting the questions used by the Education Week Research Center (2016) study on Mindset in the Classroom for K–12 teachers, to suit the Australian schooling context. Ethical approval was granted by Edith Cowan University Ethics Committee, approval number 18491. Approval was sought and gained from all participants.

The survey consisted of 18 questions. The first five items elicited demographic information about year level taught, experiences and qualifications. This was followed by 11 Likert scale questions (using a five-point scale) designed to gauge participants' perspectives of mindset. Two open-ended questions were also provided to allow participants to add further detail about factors they considered important for success in learning. The survey was refined following an initial pilot with six teachers, to test for clarity of instructions and questions.

## Sample

A convenience sampling (Liamputtong, 2013) technique was used to gather data from EC teachers from Kindergarten (a non-compulsory year of school on school sites where children are usually aged four years) to Year 2 classrooms (where children are generally aged seven years) in Western Australia. The participants ( $n = 95$ ) held a range of experience—from a beginning teacher to teachers with over 25 years' experience. Participants taught in Kindergarten (35 per cent), Pre-primary (35 per cent), Year 1 (14 per cent) and Year 2 (7 per cent). The remaining teachers were teaching in a split-year level class within these year levels.

## Data collection

Teachers were invited to participate in a survey designed with Qualtrics (2017) software, Version 2017, via links placed on four professional Facebook pages (Teaching Pre Primary WA Australia, Teaching Kindy WA Australia, Teaching Junior Primary WA, and Perth ECE teachers). Informed consent was established by an 'I agree' button that indicated consent to participate in the research. The survey was available for three weeks in November 2017. A limitation of the findings was that all Facebook pages were based in WA.

## Analysis

Data analysis was completed using IBM SPSS (IBM Corp., 2016) Version 24.0 predictive analytics software. Descriptive statistics were used to summarise the data, and included calculating measures of central tendency such as mean, median, mode and standard deviation. The analysis of the open-ended questions followed Strauss and Corbin's (1990) constant comparison analysis stages. This involved chunking data into small units with the first author attaching a descriptor or code to each unit. The codes were then grouped into categories. Themes that expressed the content of the groups were then developed.

## Results

The results are presented in terms of the three research questions addressed.

### 1. What do EC teachers know about mindset?

Participants were asked five questions to indicate their knowledge of mindset. Firstly, survey participants were asked to rate their own familiarity with the concept of mindset. Over half (63 per cent) indicated that they had heard of the fixed/growth mindset theory, (20 per cent) had not heard of this theory, and 17 per cent were unsure. Secondly, participants were asked to identify the correct descriptor of the term mindset using a Likert scale of 'strongly disagree' to 'strongly agree', with over two-thirds of participants (74 per cent) identifying the correct definition. Thirdly, nearly all the teachers

(92 per cent) indicated that they believed children's mindset has an impact on their learning. Despite this, over half of the participants (58 per cent) indicated in the fourth question that they do not use the term 'mindset' in their work with children. Finally, nearly all (98 per cent) participants indicated that a child's mindset can improve student learning.

### 2. How do EC teachers feel about fostering a growth mindset?

Participants read four statements about fostering a growth mindset and were asked to indicate the extent to which they agreed with the statements using a Likert scale ranging from 'strongly disagree' to 'strongly agree'. These statements were taken from the Education Week Research Center (2016) study on Mindset in the Classroom for K-12 teachers. Results are presented in Table 1. Just over half of the participants (53 per cent) strongly agreed that children can and should have a growth mindset, and that fostering a growth mindset is part of their job duties and responsibilities (58 per cent). However, only 19 per cent of the participants strongly agreed that they are good at fostering a growth mindset with their students, and only 14 per cent strongly agreed that they have adequate knowledge to teach children how to develop a growth mindset.

### 3. What factors do EC teachers rate as important for children's success in learning?

Participants were asked to rate the importance they placed on the view that a child's mindset will have an impact on their learning, using a scale of 'not at all important' to 'extremely important'. Nearly all teachers (92 per cent) felt strongly that children's mindset will have an impact on their learning, with 42 per cent of the teachers indicating they feel it is very important, and 50 per cent indicating that it is extremely important.

Teachers were then given a list of nine factors gleaned from the literature as important for children's success in learning. Participants were asked to indicate the extent to which they felt the factors were important, using a scale of 'not at all important' to 'extremely important' (see Table 2 on page 21). Growth mindset was listed amongst the factors to allow for a comparison to other factors listed.

Table 1. EC teacher responses to how they feel about fostering a growth mindset ( $n = 95$ )

|  | Strongly disagree (%) | Somewhat disagree (%) | Neither agree nor disagree (%) | Somewhat agree (%) | Strongly agree (%) |
|--|-----------------------|-----------------------|--------------------------------|--------------------|--------------------|
| All students can and should have a growth mindset                                    | 2.3                   | 1.2                   | 3.5                            | 39.5               | 53.5               |
| Fostering a growth mindset in students is part of my job duties and responsibilities | 0                     | 0                     | 5.9                            | 35.3               | 58.8               |
| I am good at fostering a growth mindset in my students                               | 0                     | 2.3                   | 18.6                           | 59.3               | 19.8               |
| I have adequate knowledge to teach students how to develop a growth mindset          | 2.3                   | 11.6                  | 27.9                           | 44.2               | 14                 |



The three factors that teachers described as extremely important for success in learning were feeling safe at school (81 per cent), the development of children's social and emotional skills (69 per cent), and children's engagement and motivation (68 per cent). Development of a growth mindset was ranked sixth overall, with 36 per cent of the participants believing it is extremely important for children's success in learning.

Teachers were also given the opportunity in an open-ended question to describe any other factors they felt led to children's success in learning. Table 3 presents the themes identified through the constant comparison analysis. Teachers gave the highest priority to the importance of developing positive relationships with peers, parents and other staff. The second most common theme was the implementation of developmentally appropriate pedagogy. The third most common theme related to allowing children a sense of agency over their learning. One teacher described this as *'being given choice and developing responsibility for their learning, using mistakes to identify learning goals'* (Survey Participant 7).

## Discussion

The key findings are discussed in relation to the three research questions: what do EC teachers know about mindset; how do EC teachers feel about fostering a growth mindset; and what factors do EC teachers rate as important for children's success in learning?

With respect to the first research question, this study found that early childhood teachers are familiar with mindset theory and know that it can have an impact on children's success in learning. However, over half of the participants indicated they do not use the term in their work with children. Previous studies that evaluated teacher perceptions of mindset are consistent with the findings of this study (Education Week Research Center, 2016; Nestor, 2017). Both studies also found that the majority of teachers were familiar with mindset theory and agreed that a child's mindset improves student learning. A pertinent question arising from this finding is: why have EC teachers not adopted mindset theory as part of their classroom practice despite knowing of its existence and value?

Table 2. Factors EC teachers rate as important for children's success in learning ( $n = 95$ )

| Factor                               | Not at all important (%) | Slightly important (%) | Moderately important (%) | Very important (%) | Extremely important (%) |
|--------------------------------------|--------------------------|------------------------|--------------------------|--------------------|-------------------------|
| Feeling safe at school               | 0                        | 0                      | 1.1                      | 17.9               | 81.1                    |
| Social and emotional learning        | 0                        | 0                      | 1.1                      | 29.5               | 69.5                    |
| Children's engagement and motivation | 0                        | 0                      | 1.1                      | 30.5               | 68.4                    |
| Teaching quality                     | 0                        | 0                      | 4.2                      | 44.2               | 51.6                    |
| Parental support and engagement      | 0                        | 1.1                    | 12.6                     | 38.9               | 47.4                    |
| Developing a growth mindset          | 0                        | 1.1                    | 9.5                      | 52.6               | 36.8                    |
| School climate                       | 0                        | 0                      | 13.7                     | 47.4               | 38.9                    |
| Family background                    | 0                        | 7.4                    | 28.4                     | 37.9               | 26.3                    |
| School discipline policies           | 1.1                      | 6.3                    | 31.6                     | 40                 | 21.1                    |

Table 3. Themes identified by EC teachers as important for children's success in learning

| Themes identified   | Number of responses ( $n = 44$ ) | Percentage of responses |
|---|----------------------------------|-------------------------|
| Children developing positive relationships with peers, educators and parents              | 13                               | 29.5                    |
| Implementation of developmentally appropriate pedagogy                                    | 10                               | 22.7                    |
| Other factors (effective feedback, parenting styles, quality of teacher, language skills) | 7                                | 15.9                    |
| Allowing children to have agency over their learning                                      | 6                                | 13.6                    |
| Children's health and wellbeing   | 6                                | 13.6                    |
| Children's natural ability for learning   | 2                                | 4.5                     |

This may be explained further in relation to the second research question, which sought to establish how teachers felt about fostering a growth mindset.

A key finding related to the second research question was that EC teachers think children should have a growth mindset and that teaching this is part of their responsibilities. However, they did not feel they are effective at fostering a growth mindset, nor do they feel they have adequate knowledge to teach it. This finding was also reported by the Education Week Research Center (2016) and Nestor (2017), who found that the majority of teachers believe children can and should have a growth mindset. However, they also found that fostering a growth mindset is part of a teacher's job duties and responsibilities; yet participants felt that they are not good at fostering a growth mindset. Dweck (2017) recently acknowledged that growth mindset is poorly understood by teachers, as they may not know how to include this in their practice. A possible explanation may be the research-to-practice gap acknowledged by Wesley and Buysse (2006). Teachers often have 'problems generalizing newly learned strategies to the actual work site due to poor connections and inappropriateness to classroom needs, lack of follow-up to ensure accuracy of applied practice, and little to no feedback' (Vesay, 2008, p. 288). Other explanations may include a lack of knowledge and strategies, a shortage of resources and scarce collegial support needed to assist with the implementation. Ongoing support is necessary for teachers to adopt new knowledge, refine their skills and utilise evidence-based practice. This can involve specialised training, coaching and consulting, and communities of practice (Sheridan, Edwards, Marvin & Knoche, 2009).

Currently, there is little guidance available to EC teachers on how to teach mindset in the early years. For teachers to create improvements in academic outcomes, they need to be armed with a precise understanding of mindsets, and this needs to be customised for the EC years (Yeager et al., 2013). The findings of this study identify a shortfall between the views teachers have of mindset and their effective implementation of mindset teaching and learning. EC teachers believe in the importance of teaching a growth mindset as part of their job, but do not feel they have adequate confidence, knowledge or skills to do so. It would appear that the implementation of mindset theory provides challenges to EC teachers. There is a need for further research to describe those challenges. This information would assist in the development of a model that can be utilised to guide EC teachers' implementation of mindset theory appropriate for the early years.

With respect to the third research question, this study found that teachers indicated that feeling safe at school, social and emotional skills, and engagement and motivation are important factors for success in learning. This finding broadly supports the work of other studies in this area, which found that children's beliefs about themselves, their

goals in school, their feelings of social belonging and their self-regulatory skills are important factors that affect their success in learning (Dweck et al., 2014; Furrer & Skinner, 2003; Wentzel, 1997). Children are more motivated and engaged to learn and have greater levels of achievement if they feel they have good relationships with teachers and peers. This leads to a greater sense of belonging and these effects hold in spite of prior levels of motivation and performance (Furrer & Skinner, 2003; Wentzel, 1997).

Additionally, several themes were identified from teacher responses in the open-ended question to establish other factors that teachers believe influence children's success for learning. One theme identified was children's agency over their learning. This is supported by recent literature and previous studies, which have established a need for children to have agency over their learning to increase academic performance (DET, 2018; Dweck et al., 2014; Furrer & Skinner, 2003; Wentzel, 1997). The teachers in this study indicated that applying a growth mindset provides children with greater agency that, in turn, increases motivation and success in learning.

The findings of this study have important implications for future practice in the early years. If teachers are to prepare children for living, learning and working in the twenty-first century, as called for by the Melbourne Declaration (MCEETYA, 2008), then the development of non-cognitive skills like mindset are essential to encourage agency and promote long-term learning and achievement.

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## Conclusion

This study set out to investigate EC teachers' perspectives of mindset. The findings identified that EC teachers have some knowledge of mindset theory and that teachers believe a growth mindset can have an impact on children's learning in the early years. However, teachers do not know how to implement this theory into their teaching and learning practices within their settings. Overall, these findings strengthen the idea that EC teachers value mindset theory and have recognised their responsibility to include it in practices in the early years. The findings from this research add valuable new knowledge for the EC sector in Australia, as this is the first known comprehensive Australian investigation of EC teachers' perspectives of mindset. The evidence from this study suggests that there is a pivotal need for further research to establish and trial a model to support EC teachers' implementation of mindset theory.

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