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Teachers' Understanding of the Major Sources of Self-efficacy in Early Childhood

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Abstract
Self-efficacy has been associated with benefits to everyday life such as resilience to stress and adversity, healthy behaviours, improved performance, and academic achievement. Research into self-efficacy development is scarce in early childhood, yet self-efficacy is associated with numerous skills and competencies taught in the early years of school. A mixed-method approach was employed to explore early childhood teachers' understanding of how self-efficacy developed in children. The study focussed on teachers of children in Kindergarten to Year 2 (K–2) in primary schools in Western Australia and was conducted in two phases. Initially, an online survey, answered by 74 K–2 teachers, was implemented to gather early childhood teachers' understandings of the self-efficacy construct. The second phase sought additional description of survey findings through semi-structured interviews with 10 early childhood teachers. Findings identified that early childhood teachers describe the sources of self-efficacy differently to research with older children and adults. In older children, mastery is considered a primary source of self-efficacy, as mastery experiences provide children with concrete evidence of their capabilities and competence. This study identified that young children, who have not had time or opportunity to master complex cognitive tasks, rely on self-efficacy sources that are more in line with their developmental levels, including their physiological and emotional states. This finding has major implications for how teachers, school leaders, curriculum writers and policy makers think about the self-efficacy development of children in early childhood settings.

Keywords Self-efficacy sources · Social and emotional learning · Early childhood · Pedagogy and practice

Introduction

Self-efficacy, which is defined by Bandura (1997) as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" is central to human agency (p. 3). This self-belief allows people to influence their own motivation, leading to increased confidence, resilience, persistence, effort, and achievement (Schunk & DiBenedetto, 2021). Bandura claims the most dominant source of self-efficacy is mastery experience, which develops as students reflect on their past attempts at performing tasks. In the early childhood years, however, children may not be able to rely on prior experience to gain mastery, which leads to discussion about age-appropriate sources of self-efficacy. Much of the previous research into self-efficacy pertains to secondary and tertiary students (Greco et al., 2022; Lei et al., 2022), with little research into how young children develop self-efficacy.

When taught appropriately, self-efficacy results in increased learner engagement (Sokmen, 2019). Poor learner engagement was identified by Gonski et al. (2018) as impacting Australia's decline in student outcomes resulting in calls for a focus on improving skills for learning. Additionally, The Early Years Learning Framework (EYLF) (Australian Government Department of Education [AGDE], 2022) highlights the unique learning requirements of young children, encouraging educators to build skills for motivation and engagement in learning (AGDE, 2022). The beginning of school is canvassed by the Alice Springs (Mparntwe) Education Declaration (Education Council, 2019) as the most opportune time to build skills for learning and engagement. The relevance and currency of this study is underpinned by the vast benefits of supporting student self-efficacy as well as national concerns of reduced student outcomes, and the identification of early childhood as the critical time to learn

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valuable skills for learning. This paper reports on the main sources of self-efficacy as reported by early childhood teachers taken from a broader study on self-efficacy, as understood by teachers in the early years of school.

Review of the Literature

Self-Efficacy Theory

Self-efficacy is a tenet of Bandura's Social Learning Theory (1977), which relates to improving one's skills and abilities. Students with low self-efficacy are more likely to avoid, delay or give up on completing tasks, while competencies including motivation, resilience, cognitive skills, and self-regulation are associated with high levels of self-efficacy. Motivation, when combined with self-efficacy, has a significant influence on learning as children consider the incentive to engage, along with their perception of their ability to succeed (Schunk & DiBenedetto, 2021). In a reciprocal manner, self-efficacy beliefs influence the cognitive ability students have, to think, learn and reflect, impacting problem solving and critical thinking. Self-regulation is thought to be integral to the development of self-efficacy as regular self-regulation disruptions interfere with self-efficacy development (Shanker, 2014).

Sources of Self-efficacy

Self-efficacy is considered to develop as information is interpreted from four main sources: mastery experience; social persuasion; vicarious experience; and physiological and emotional states (Macklem, 2021). The hierarchical system of self-efficacy influence claims mastery experience to be the most influential source and physiological and emotional sources to have the least amount of influence (Arslan, 2019; Phan & Ngu, 2016). *Mastery experience* is garnered when students contemplate their past accomplishments and make judgements based on the success or failure of those previous experiences (Phan & Ngu, 2016). Mastery experience was found by Lau et al. (2018) to account for 70% of the variance in students' mathematics self-efficacy for middle-school students and by Capa-Aydin et al. (2018) to constitute over 50% variance in cognitive skills in chemistry in secondary settings.

The *vicarious experiences* provided by social models are considered an influential source of self-efficacy (Bandura, 1977). If people observe others who they deem to have similar capabilities to themselves experiencing success, it convinces them they too can be successful (Phan & Ngu, 2016). Self-efficacy beliefs are also influenced by the *social persuasion* received from others. Verbal judgements and feedback from others can either cultivate students' beliefs in their capabilities or work to defeat and weaken self-efficacy beliefs (Pajares et al., 2007).

Finally, the *physiological and emotional states* of students are considered weaker predictors of self-efficacy (Lau et al., 2018). This source of self-efficacy claims a positive mood can boost one's self-efficacy beliefs, while anxiety and stress can undermine it (Margolis & McCabe, 2006). Students gauge their level of confidence by the physiological state they experience as they consider a task (Pajares et al., 2007). Students' emotional reactions to the task may also provide cues about anticipated success or failure. Pajares et al., (2007, p. 107) explain "when students experience negative thoughts and fears about their capabilities, those affective reactions can lower self-efficacy perceptions and trigger additional stress and agitation that help ensure the inadequate performance feared". Thus, by learning how to manage anxiety and enhance mood when experiencing challenging situations, students can improve their self-efficacy.

Teaching Self-efficacy Skills

Teaching self-efficacy skills can and do influence self-efficacy levels (Fencl & Scheel, 2005). While most studies use terms such as nurture, facilitate and foster, the term *teaching* is used in this study to reflect both formal and informal teaching practices. Studies by Bandura (1977) and Schunk (1981) provide examples of self-efficacy successfully being taught, using the strategy of modelling. Bandura et al. increased the self-efficacy of people with snake phobias by exposing them to therapists modelling the handling of snakes. Schunk's study compared the self-efficacy of children learning long division. Children who received modelling, demonstrated increased self-efficacy and higher skill for long division after the instruction. In addition to teaching self-efficacy skills by modelling, researchers have also found teaching practices including collaborative learning, goal-setting and the provision of appropriate feedback to be effective.

Collaborative learning approaches designed to maximise peer interactions have a positive impact on self-efficacy (Yadav et al. 2021). To be effective, children should be encouraged to work cooperatively and interdependently with consideration given to group size and the physical organisation of the classroom (Phan & Ngu, 2016). Burke and Williams (2012) conducted a *collaborative learning* intervention with 178 Primary school age children finding increased self-efficacy and understanding of concepts over those who worked individually. Further, increased self-efficacy towards mathematics was identified by Chang (1997) in a study of 123 Primary aged students working in collaborative environments. Chang identified performance behaviours, such as exerting higher task persistence, effort expenditure, and

higher self-appraisals on the given tasks were improved in students after working in collaborative environments.

Setting goals for learning has been identified as a successful teaching strategy to increase self-efficacy (Lamb et al., 2017). Strategies employed for *goal setting* is a successful tool for self-efficacy development as it requires students to focus on past performances allowing them to set realistic expectation for further achievement. Establishing specific, short-term goals that challenge students yet are still attainable are considered by Macklem (2021) as most effective in increasing student self-efficacy.

The provision of frequent, focused feedback relating to effort rather than achievement leads to increased self-efficacy as well as increased performance (Lazowski & Hulleman, 2016). Marglolis and McCabe (2016) note it is important to compare past performance by the same student and not make comparisons between students when giving feedback on student performance.

Self-efficacy and Links to Social and Emotional Development

For self-efficacy to support learning, social and emotional skill development is required (Lamb et al., 2017). Children with such skills are more likely to take risks and have deeper levels of engagement in the learning, leading to increased opportunity for self-efficacy growth (Pascal & Bertram, 2018). Children learn most effectively when education is focussed on their emotional states leading to "increased confidence in their current and future abilities" (Deans for Impact, 2019, p. 4). Although research reports emotional states as being a weaker predictor of self-efficacy in adolescents (Lau et al., 2018), for young children they are central because emotions are integral to their development.

One important aspect of social and emotional development as children begin to understand and manage their emotions is self-regulation (Silkenbeumer et al., 2018). Self-regulation is described by Shanker (2018) as a child's ability to effectively deal with stressors and their subsequent return to a calm and focused state. A pleasant or neutral state is increasingly likely to arouse feelings of confidence, leading to the development of self-efficacy (Maddux & Kleiman, 2016). Play experiences are beneficial when teaching self-regulation skills as they allow children to experience the full spectrum of emotions, from which they learn and grow (Zosh et al., 2017), and provides opportunities for agency.

Agency, described as authentic choices about what and how to learn, leads to self-efficacy and enjoyment of learning (Parker & Thomsen, 2019). Agency is best promoted through play experiences in which children recognise their "capacity to initiate and lead learning, and their rights to participate in decisions that affect them, including about their learning" (AGDE, 2022, p. 8).

Research Design

This Interpretive study aimed to explore the understandings early childhood teachers have about children's self-efficacy, including the major sources influencing children in Years K-2, and the strategies they use to teach it. A mixed method approach was employed as these studies are enhanced when being framed by an Interpretivist approach (Creswell & Creswell, 2018). Using a mixed method design in this study enabled a greater consideration of the context of the participants and provided deeper insights into their understanding of self-efficacy and how it is understood and practised.

Phase One of the study utilised an online survey, designed to gather a broad overview of teacher understanding of self-efficacy. An online survey was considered the most accessible and wide-reaching tool, to allow a dispersed population to answer a wide range of questions in a short time (Braun et al., 2021). The wide reach increased the potential for a more representative sample and enhanced the generalisation of the findings. This tool enabled quick access to a range of perspectives about self-efficacy before drilling deeper in the semi-structured interviews in Phase Two, adding meaning to the survey data. Empowering participants to share their thoughts and stories in the individual interviews led to a more contextualised and authentic understanding of the complex phenomenon of self-efficacy. Online surveys and semi-structured interviews are both popular and effective methods of gathering data, often paired during mixed method research (Clark et al., 2021). Prior to the recruitment of participants, ethical approval was received from Edith Cowan University Human Research Ethics Committee-Project Number: 19574 and all participants were de-identified and allocated a number for referral.

The three research questions guiding this study are:

1. What do early childhood teachers understand self-efficacy to be?
2. What are the most influential sources of self-efficacy for children as described by early childhood teachers in Years K-2?
3. What strategies do teachers use to teach self-efficacy skills to children in Years K-2?

Phase One: Survey

Respondents

A purposeful sampling technique was used to identify respondents for Phase One of the study. Survey respondents were teachers from the Kindergarten to Year 2 (K–2) sector in Education Department, Catholic and Independent schools across remote, rural and metropolitan settings in Western Australia. Teachers in schools were identified

through Facebook sites for various early childhood network groups. Permission was sought by the administrator of each Facebook group before posting the survey on the various sites. An information letter provided details about the study, describing consent as given if teachers clicked a link to begin the survey. The survey yielded 74 responses from teachers who had a range of classroom experience, taught in different geographical locations and held one of three different teaching qualifications (see Table 1).

Instrument and Analysis

The survey, developed after a search of the literature, contained two sections. The first section collected demographic information about the participants including location, qualification, and years of experience. The second section utilised both a five-point Likert rating scale and four open-ended questions to determine respondent understanding of self-efficacy and its sources. The participants were provided with a range of statements related to self-efficacy and asked to what extent they agree or disagree with them, such as "self-efficacy levels can impact learning" and "by using relevant teaching strategies, student self-efficacy can be increased". One qualitative question asked participants to name and describe the self-efficacy strategies they used, and another to rate the four sources of self-efficacy according to the influence they have on learning. The survey questions were checked for construct reliability during a pilot study with 10 early childhood teachers and refined.

The survey was distributed via the Facebook groups and was open for a four-week period, with reminders posted once per week. Once the survey data had been collected and collated, the data were analysed by IMB Corp SPSS (2016) 24.0 software. The SPSS software was used to produce tables to identify frequency counts and percentages. The open-ended responses were analysed by thematic analysis. Initially, responses were read by the Researcher and categorised as common themes emerged. Once the themes were identified, codes were assigned to each theme and a coding framework established. The data and coding were then re-examined to ensure complete transparency of the analysis.

Phase Two: Semi-Structured Interviews

Participants

After determining survey respondents did not demonstrate a strong theoretical understanding of the self-efficacy construct, a purposeful sample was sought for Phase Two, semi-structed interviews. To recruit teachers for interviews with increased knowledge of self-efficacy, school websites were canvassed to identify schools that prioritised social and emotional learning. It was anticipated that teachers working in schools with this focus may be able to provide rich and in-depth information about self-efficacy and how this knowledge was used in their teaching practices. School principals were approached and once they agreed to the study, recommended the teachers they identified as having knowledge in this area, representative of Kindergarten, Pre-primary, Year 1 and Year 2. No interview participants completed the online survey in Phase One. Teachers from three Independent schools in metropolitan Perth, Western Australia were interviewed in Phase Two. Two schools were single sex schools, and the other was co-educational. Demographic information shows the teachers had a range of classroom experience and most (80%) held an early childhood qualification (see Table 2).

Instrument and Analysis

Semi-structured interviews were selected as a way of using purposeful conversation to gain in-depth responses from the participants. Initially, four demographic questions were asked to provide background context, including year levels taught, years of experience, and highest level of teaching qualification. This was followed by sixteen interview questions designed to determine the understandings teachers held about self-efficacy and the impact their understandings have on their teaching practice. The interview questions were designed to further explore themes that emerged from the Phase One surveys. Specifically, the participants were questioned about their familiarity with the term self-efficacy and what they know about it, their intentionality in teaching it, and about their

Table 1 Details of participants in Phase One (Online survey)

Location	%	n =	Highest qual	%	n =	Area of qual	%	n =	Years of experience	%	n =
Perth Metro	72	53	M. Ed	4	3	Early Childhood	59	44	0–4 years	20	15
Rural WA	24	18	B.Ed	73	54	Primary	24	18	5–10 years	19	14
Remote WA	4	3	G.Dip	18	13	Kindergarten to Year 7	16	12	11–15 years	16	12
			G.Cert	5	4				16–20 years	9	7
									21–25 years	15	11
									26 + years	20	15

Key: *M.Ed* master of education, *B. Ed* bachelor of education, *G.Dip* graduate diploma of education, *G. Cert* graduate certificate

Table 2 Details of participants in Phase Two (semi-structured interviews)

Interview Participant (IP)	School (S)	Qualification	Year currently teaching	Number of years' experience
1	S1	B. Ed (EC	Kindergarten	4 years
2	S1	B. Ed (Primary)	Pre-primary	26 years
3	S1	B. Ed (ECS)	Pre-primary	10 years
4	S1	B. Ed (Primary)	Year 1	12 years
5	S1	B. Ed (ECS)	Year 1	15 years
6	S1	B. Ed (ECS)	Year 2	6 years
7	S2	B. Ed (ECS)	Year 2	29 years
8	S3	B. Ed (Primary) G. Cert (ECS)	Kindergarten	14 years
9	S3	B. Ed (ECS)	Kindergarten	32 years
10	S3	Bachelor of EC and Primary (K-7)	Pre-primary	12 years

B. Ed bachelor of education, *ECS* early childhood studies, *G. Cert* graduate certificate

understanding of how self-efficacy develops in children. Each interview lasted 35–40 min and was audio recorded and later transcribed. The transcripts from the interviews were analysed using NVivo 12 software, which allowed for a coding framework to be established and prominent themes to emerge. Nine parent nodes were initially established to support the analysis of data. Two nodes were later added upon analysing the data.

Findings

This section contains the findings from the Phase One survey and the Phase Two interviews, which will be interrogated and described. The interviews supported the generalised findings of the survey by providing a much richer narrative to gain a deeper understanding of self-efficacy from an early childhood teacher's perspective. As physiological and emotional states were ranked very highly as a main source of self-efficacy in children in Years K–2 during the survey, that theme was of particular interest during the interviews. It was also noted in the survey that a limited number of participants completed the question about strategies they used to support self-efficacy development. The semi-structured interviews allowed teachers with increased experience and knowledge of self-efficacy to discuss their intentional use of strategies to further the self-efficacy development of their students. This allowed for a deeper understanding of the topic. The results are presented in terms of the three research questions; teacher's general understanding of self-efficacy, their knowledge of the most effective sources of self-efficacy development, and the strategies they use to teach it.

Teachers' Understanding of Self-efficacy and Its Impact on Learning

Survey respondents did not demonstrate a strong theoretical understanding of the self-efficacy construct; however, they did demonstrate understanding of some aspects. When asked whether they had heard the term 'self-efficacy', 20% of respondents claimed to either have not heard the term or were unsure whether they had. Of the 20%, one teacher had an early childhood teaching qualification, five were qualified to teach Kindergarten to Year 7, and eight held a Primary teaching qualification. After being provided with a definition, all but two participants (3%) indicated self-efficacy is important and is a skill they try to teach children. In an open text question encouraging responses about factors that impact self-efficacy development, 74% of respondents did not respond.

Teachers in the interview phase articulated a strong understanding of self-efficacy theory based on Bandura's model (1977) and all acknowledged its importance in learning. These higher levels of understanding were expected, given the sample. Despite not using the term 'self-efficacy' regularly in their practice, teachers accurately defined it as "a child's belief in whether they can do something or achieve something" (P2) and "it's whether they believe they can do it" (P9). Many also discussed the importance of teaching and facilitating skills and dispositions such as persistence, self-regulation, motivation, resilience, agency and in promoting a growth mindset to assist with the cognitive skills required for learning. One participant explained how self-efficacy "is a building block to student agency" (P9), claiming children are not capable of initiating their own learning until they believe in their own ability to be successful.

During the interviews all teachers described the characteristics of self-efficacy and speculated why some children display more self-efficacy than others. Some themes to emerge when considering characteristics were confidence, persistence, independence, and use of positive language. The teacher at S2 observed changes over one term in her Year 2 children after modelling the use of positive language. She claimed this language was shared with parents and families,

becoming part of the child's vocabulary and then schema. The factors impacting the variation of self-efficacy levels in children were reported as family influences and parenting styles, specifically the family belief system and well as children's prior experiences.

There was no clear distinction in responses based on the year level taught, or the location of the respondents, however, teachers with increased classroom experience demonstrated a better theoretical understanding of self-efficacy confirmed in their use of language and in their reference to associated competencies, including self-regulation and goal setting. Increased knowledge of child development and the importance of using effective strategies to develop skills such as agency and intentionality were also considered important by the more experienced teachers.

Teachers' Understanding of the Most Influential Sources of Self-efficacy

Over half the teachers in the survey (57%) identified children's physiological and emotional states as the most influential source of self-efficacy for children in Years K–2 (see Table 3). Close to 20% of teachers considered physiological and emotional states to be the second most influential source of self-efficacy, resulting in 76% of teachers rating it as the first or second most influential source of self-efficacy. As it was not consistent with literature on this topic, this finding was further explored in the interview phase.

Mastery experience was considered the second most influential source of self-efficacy. Twenty six percent of participants in the survey rated mastery experience as the most influential source for children in their classes (see Table 3). This compares to 57% of participants who rated physiological and emotional states as the most influential source, a difference of 31%. The highest number of participants rated mastery the second most influential source (35%) while 15% of respondents rated it as the least influential source.

Social persuasion was identified as the third most influential source of self-efficacy with 18% of survey respondents identifying it as the most influential source of self-efficacy (see Table 3). One teacher described reminding the children how well they performed another task and gave them the belief they can also perform the task in question. Teachers suggested social persuasion took place in many forms but most predominately through feedback from educators and children's peers. Teachers in the survey described feedback to promote self-efficacy as being "feedback that is directly related to what they are doing" and as "constant and immediate". There were no responses in the survey to indicate the observation of others was the most powerful source of self-efficacy in Years K–2 (see Table 3).

During the interviews, all ten teachers indicated they strongly relied on children's emotional states as a source of self-efficacy development. One teacher (P3) suggested "one feeds the other", while another (P9) argued "when children are not in control of their emotions it is hard for them to think positively". Participant nine expressed the importance of acknowledging children had feelings and to teach them they are in control of them. She considered the teaching of skills focussed on emotions as paramount due to the age and stage of development of the children, arguing emotional states to typically influence all aspects of learning for young children.

Mastery experience was not considered an influential source of self-efficacy by teachers during the interviews. Participant seven noted "young children have had limited time and opportunity to master many tasks". Rather than focus on the mastery of curriculum content, interviewed teachers discussed the mastery of social and emotional skills as being prioritised in their teaching. One participant described the need to be clear and explicit in developing social and emotional skills as being effective in raising child self-efficacy (P2). She explained "we build skills like persistence and confidence through actual explicit teaching of what those things are and then use that language continuously".

In school contexts, teachers considered teacher and peer feedback (social persuasion) to have a moderate influence on self-efficacy levels (P1,2,4,6,9). To increase the opportunity for social persuasion to occur between peers, teachers reported using collaborative and cooperative learning strategies, which encourage a collective efficacy. In the interview, one teacher highlighted the importance of children learning to work together in collaborative environments: "I encourage children to learn with others, rather than individually

Table 3 Most influential sources of self-efficacy in young children as rated by participants

Bandura's four sources of self-efficacy	Most influential source		Second most influential source		Third most influential source		Least influential source	
	n	%	n	%	n	%	n	%
Physiological and emotional state	42	57	14	19	11	15	7	9
Mastery Experience	19	26	26	35	18	24	11	15
Social persuasion	13	18	20	27	17	23	24	32
Observation of others	0	0	11	15	29	39	34	46

because I find they are more motivated and invested in the learning. Also, there is opportunity to learn from each other" (P4).

Most interviewed teachers (70%) discussed self-efficacy as being enhanced by the observation of others, with vicarious reinforcement targeted at children's emotions. Teachers reported using books, stories and videos depicting characters overcoming challenges and achieving success. Using own examples of mistakes to provide opportunities to model how situations might be handled in a positive way was also considered One teacher (P1) discussed how she, and her education assistant, set up situations in their Kindergarten where they deliberately made mistakes as a learning opportunity to workshop what this mistake means or how children might confront it.

Strategies Teachers Use to Develop Self-efficacy in K-2

Despite a lack of professional knowledge, survey respondents reported using some strategies indicated by the literature as impactful in supporting self-efficacy behaviours, such as a focus on growth and effort rather than success (18%), positive feedback (16%), modelling language such as 'you can't do it … yet' (13%), and the promotion of social and emotional skills such as resilience and perseverance (12%). Survey respondents identified goal setting as important in developing self-efficacy, along with other strategies focused on the learning process. This included modelling of errors and using them as a learning opportunity as well as making learning more transparent. Teachers discussed the use of specific social-emotional programs used in their schools including the 'You Can Do It! program' (Bernard, 2017) and the 'Essential Fluencies' program (Watanabe Crockett, 2018). Concerns were raised by teachers (31%) about a lack of time to teach social and emotional skills, citing a crowded curriculum along with increased assessment and reporting pressures.

Play-based learning was recommended by teachers during the interviews to teach the social and emotional skills required for building self-efficacy in children. One interview participant described play as the best vehicle for teaching the social and emotional skills children require for learning, explaining it is her job to help children play, as "if they are not playing, they are missing out on opportunities to learn" (P8). Also prioritised by teachers when teaching self-efficacy was a good *knowledge of child development* to promote emotional growth. Teachers acknowledged a strong link between *goal setting* and emotional states, with 60% of teachers suggesting tasks should be broken down into small, achievable steps to allow more opportunities for success.

Seventy percent of teachers discussed *knowing children and their strengths* as integral in supporting child self-efficacy development. Strategies including student interviews, observations, group sharing circles and one-on-one conversations to *build positive relationships* were considered effective. Other strategies considered important when developing student self-efficacy were *teamwork*, *explicit teaching of social and emotional skills*, *teacher and peer modelling*, the provision of *encouragement and feedback* and the effectiveness of the learning environment.

Teachers from schools one and three discussed the power in having a *school culture* of shared efficacy. They attributed their knowledge and application of self-efficacy strategies to their school philosophy and school leaders. One teacher suggested "we have freedom of planning … the freedom and license we get from higher up allows us scope to attend to the social and emotional needs of the children" (P3). Teachers suggested that being afforded the freedom and flexibility to be autonomous in their teaching resulted in more time to teach self-efficacy skills to children. They considered the provision of appropriate teaching practices and pedagogies instrumental in supporting the self-efficacy growth of children.

Discussion

Teachers' Understanding of Self-efficacy

The findings suggest teachers have a mixed understanding of self-efficacy and associated skills. As expected, teachers working in the schools selected in Phase Two of the study demonstrated increased theoretical understanding of self-efficacy theory (Bandura, 1977). They defined self-efficacy and understood its relationship with self-regulation, agency and motivation. This knowledge resonates with The EYLF (AGDE, 2022), which identifies self-regulation, agency, problem-solving, autonomy and persistence fundamental to learning. Understanding the relationship between self-regulation, agency and self-efficacy is significant. The more proficient one is at regulating their emotions, the higher their levels of self-efficacy (Shanker, 2014). Agency, seen as a building block to self-efficacy by interviewed teachers, is considered essential by the EYLF (AGDE, 2022) for children to have a positive outlook and to approach new experiences with confidence. Self-efficacy is the central mechanism in human agency, and without this force, children's ability to take initiative, make choices and exert control over their lives is hindered (Cannon & Rucker, 2022).

Cognitive skills taught to develop thinking and learning are integral to the development of self-efficacy (Schunk & DiBenedetto, 2021). Teachers in the study identified the relationship between cognitive skills and self-efficacy, highlighting the importance of teaching persistence to grow the self-efficacy required for critical thinking skills, such as problem

solving, explaining and predicting. Maddux and Kleiman (2016) argue students with high levels of self-efficacy tend to use more complex cognitive strategies. Likewise, cognitive skills encourage students to persist if they believe they are going to succeed, which is paramount when faced with new or complex learning (Schunk & DiBenedetto, 2021).

Teachers' Identification of the Sources of Self-efficacy in the Early Years of School

Physiological and emotional states are considered the main source of self-efficacy in children in Years K–2 by the teachers in both phases of this study. The research findings point to a different hierarchical arrangement of self-efficacy influences than Bandura (1986) and other subsequent research (Lau et al., 2018) has shown for older children. This finding supports research concluding young children rely more heavily on psychosocial sources due to their limited cognitive maturity and learning experiences (Phan & Ngu, 2016). Shanker (2014) too lends support to the finding of psychological and emotional states being more influential in the early years by suggesting increased self-efficacy is more easily taught when children can manage their anxiety, anger, and impulses. Mastery experience, social persuasion and the observation of others were considered by teachers as less influential, but still as having an impact in early childhood.

It takes time and practice to master skills. In considering mastery experience as a source of self-efficacy for children, an experienced teacher used the phrase ''It takes 10,000 h to become a master'' (P9), highlighting that mastering a skill involves multiple attempts and exposure. As children have had less time in their lives to master anything, it provides a plausible reason why teachers recognised physiological and emotional sources as more potent for younger children than the mastery sources as reported in other studies (for example, Lau et al., 2018). Social persuasion is less likely to influence the self-efficacy development of children in years K–2 but did still have some bearing. The most influential type of social persuasion was identified as being teacher feedback that is frequent and immediate (Gonski et al., 2018) as well as feedback provided by family members (Darling Hammond et al., 2019). The observation of others (vicarious experiences) was not considered an influential source of self-efficacy in the survey yet was considered influential by 70% of the teachers during the interviews. Interviewed teachers described teacher modelling as being an effective strategy, in particular the use of 'own examples' as learning opportunities.

Pedagogy and Practice to Teach Self-efficacy in Early Childhood

Using appropriate pedagogies and practices to teach self-efficacy skills was deemed essential by the teachers in this study. Teachers claim play-based pedagogies, and practices such as goal setting, provide the best vehicle for teaching and developing the self-efficacy of children.

Free play and play-based learning were recommended to promote the social and emotional skills required for teaching skills in self-efficacy. Engaging in play has many social, emotional and cognitive benefits for young learners (AGDE, 2022; Parker & Thomsen, 2019). Lillard et al. (2013) claim hands-on, child-driven learning to be the most positive means to support young children's learning and development. Play provides children with choice, leading to increased locus of control and perceived competence (Parker & Thomsen, 2019). Teachers in the interviews placed emphasis on supporting children to lead their own learning, ensuring opportunities for them to be autonomous and experience success. By providing children with agency and choice, teachers place the child in a position of power enabling them to control the anticipation of the event (emotions), thus supporting them with their emotional growth (Shanker, 2018; Silkenbeumer et al., 2018). Inadvertently, they are beginning to build mastery of self, and task.

Setting goals for learning is considered key in developing self-efficacy (Lamb et al., 2017). Teaching goal setting requires children to focus on past performances allowing them to set realistic expectation for further achievement (Macklem, 2021). Breaking tasks down into small manageable steps was considered in this study as a way of reducing children's anxiety before attempting a task. Survey participants claimed to use goal setting with their children but did not relate it to self-efficacy. The effects of goal setting to build self-efficacy are twofold. First, it increases the likelihood of the children's successful attempt at the task, and second, it opens opportunities to build task mastery. Successful attempts at tasks are important as they create positive feelings, raising children's self-efficacy for that task.

Teachers consider positive school leadership and collaborative decision making as fundamental in their ability to teach self-efficacy. Having choice over how instruction time was spent, freedom to make a mess, and flexibility in programming, enabled teachers to feel empowered to focus on social and emotional skills children required for learning. Darling-Hammond et al. (2019) recommend a positive school culture that have leaders who develop relational trust among staff members. Teachers in this study who felt valued and more autonomous in their teaching were better supported in teaching self-efficacy skills. Leaders that encouraged positive relationships within classrooms were also reported as being effective by teachers when teaching self-efficacy. Teachers who were interviewed, claimed a whole school focus on social and emotional learning encouraged a culture of collaboration and teamwork, which was effective in building the trust and confidence of children (Burke & Williams, 2012).

Pedagogy is reported to be limited when teachers are teaching to meet the needs of high stakes testing. Teachers report feeling conflicted with pressures they feel to prepare children to meet national standards in academic testing programs, and in spending time developing valuable skills for learning (Barblett et al, 2016). There is concern that changes in approaches to teaching and learning, because of high stakes testing, has impacted the nature and quality of early learning experiences (Polesel et al., 2012). Standardised testing encourages mastery of content, rather than developmentally appropriate learning experiences that lead to increased agency and autonomy (Education Council, 2019).

Limitations and Future Research

The study involved a relatively small sample size involving early childhood teachers in school settings in Western Australia and cannot be generalised across all early childhood settings in Australia. The selection of Independent schools used during the interview phase should be considered. All three schools were situated in high socio-economic areas and two were single sex schools. Future research would consider the inclusion of children's voices to study self-efficacy from their point of view.

Conclusion

This paper considers the understandings early childhood teachers have about the construct of self-efficacy. Findings indicate that teachers need to better understand self-efficacy theory, especially in relation to physiological and emotional states for young children. Findings also uncovered that, to have the most impact, self-efficacy strategies need to be taught in age-appropriate ways. As a result, there are two main recommendations.

1. Professional learning courses in self-efficacy are recommended to ensure teachers have the knowledge and skills required to meet the unique learning requirements of young children. Increased knowledge of relevant sources of self-efficacy will better equip teachers with skills to grow the self-efficacy of children they teach. Additionally, self-efficacy theory should be embedded in university courses for initial teacher education so pre-service teachers develop the skills and knowledge required to teach self-efficacy skills effectively.
2. Age-appropriate pedagogical practices should be used to teach self-efficacy skills. Pedagogy should be focused on developing personal and social skills through provision of open-ended tasks, encouraging children to develop new skills and attitudes. By learning in environments where social skills and emotions are prioritised and children feel safe and supported, such as play-based, collaborative learning environments, they are more likely to take risks and have deeper levels of engagement in the learning.

Children's physiological and emotional states have been reported in this study as being the major source of self-efficacy for children in the early years of school. This finding requires action by teacher education courses, school leaders, policy makers and curriculum designers to ensure teachers have the skills they require to effectively teach self-efficacy to children for learning, now and in the future.

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