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Victorian Early Years Learning and Development Framework

Evidence Paper

Practice Principle 6: Integrated teaching and learning approaches

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Practice Principle 6: Integrated teaching and learning approaches

The Victorian Early Years Learning and Development Framework (Victorian Framework) guides early childhood professionals' practice in Victoria. The Victorian Framework identifies eight Practice Principles for Learning and Development. The Practice Principles are based on the P-12 Principles of Learning and Teaching, the pedagogy from the Early Years Learning Framework for Australia, and are informed by the latest research.

The Practice Principles are interrelated and designed to inform each other. They are categorised as Collaborative, Effective and Reflective:

Collaborative

1. Family-centred practice
2. Partnerships with professionals
3. High expectations for every child

Effective

4. Equity and diversity
5. Respectful relationships and responsive engagement
6. Integrated teaching and learning approaches
7. Assessment for learning and development

Reflective

8. Reflective practice

These Evidence Papers document the research that underpins each Practice Principle. The content of the Evidence Papers will be developed into a series of practice guides which will provide practical advice to early childhood professionals on how to align their practice to the Practice Principles.

Executive Summary

The positive impact that integrated learning and teaching approaches have on outcomes for children is clearly documented in the research literature. Neuroscientific research has significantly developed our knowledge of how the young brain functions and learns and the conditions required for optimal learning and development. Research indicates that the early years, particularly 0-8 years are critical for optimal learning and development.

Play has always been regarded as a critical element in early childhood education, yet in recent years evidence has shown that the least successful learning environments are often those where children are regularly left to their own devices to engage in long periods of undirected free play (Broadhead, 2006; McLachlan, Fleer, and Edwards, 2010; Walsh, Sproule, McGuiness, Trew, Rafferty, and Sheehey, 2006). This is particularly true for infants and toddlers (Shore, 1997) and for children identified as having additional learning needs or identified as being at risk of potential educational failure (Brodin, 2005; Hamre and Pianta, 2005). Evidence suggests that play-based learning is most effective when it is interactive, physical and concrete, and involves people, materials and the environment.

Environments that have the greatest outcomes for children are engaging, caring, stimulating and respond to children's individual abilities and interests. Learning outcomes for children are enhanced when early childhood professionals take an active role in children's learning through observation, listening, questioning, constructive feedback and open communication.

Learning is an active process that must involve children's engagement. Integrated teaching and learning is essentially a dynamic between the child and the adult. It involves active engagement, attunement to children, shared, sustained conversations and intentional teaching.

This Evidence Paper presents contemporary research evidence that supports integrated teaching and learning approaches, highlighting the following key findings:

- Neuroscientific evidence proves that early learning matters for later outcomes.
- Play is essential for early learning, and is best supported by meaningful interactions with early childhood professionals.
- Integrated approaches to teaching and learning are most effective when they respond to children's strengths, abilities and interests.

- Learning experiences, differentiated to fit the individual needs of each child have the most positive outcomes.
- Extended interactions – where early childhood professionals provide responsive feedback to extend children's contribution – are a foundation for learning.
- The best learning outcomes for children occur when there is a balance between child-directed play, guided play and adult-led learning.
- Integrated teaching and learning approaches require early childhood professionals to reflect on their practice.

Introduction

Early childhood professionals recognise that a gradual shift in emphasis occurs over the first eight years of a child's life, along a continuum from play to more structured learning in formal settings. Early childhood professionals apply strategies to support sustained and shared interactions with children through play to more focused learning.

Learning is an active process that must involve children's engagement. Play is essential for its ability to stimulate and integrate a wide range of children's intellectual, physical, social and creative abilities. Active engagement with, and attunement to children in their play extends and supports their learning. Shared, sustained conversations are also a powerful and important feature of active adult engagement.

Early Childhood Professionals:

- encourage children to explore, solve problems, communicate, think, create and construct
- use their judgement to support children's learning and development through a combination of child-led play-based learning, as well as active teacher-led learning
- create physical environments that support a range of opportunities for learning and physical activity, both indoors and outdoors
- build on children's interests, abilities, cultures and previous learning experiences to extend their thinking, learning and development
- use child-centred approaches to explicitly teach particular knowledge and skills
- recognise the connections between aspects of children's learning and development.

VEYLDF, p. 12

Figure 1: Integrated teaching and learning approaches (VEYDLF p 12)

Positive early learning experiences are essential for best outcomes for children. This Evidence Paper reviews the research literature that demonstrates why and how integrated learning and teaching approaches create these positive experiences. The evidence documents children's neurobiological dispositions for early learning, the role of play in early learning and, most importantly, the role of professionals in developing environments, experiences and interactions that facilitate learning and development.

What do we mean by 'integrated teaching and learning'?

Practice Principle 6: Integrated teaching and learning approaches focus on the interweaving of child-directed play and learning, guided play and learning, and adult-led learning. Integrated teaching and learning means that early childhood professionals build opportunities in early childhood programs for children to interact with their environment, both physical and social, in response to their own hypotheses or curiosity about how their world works, *and* to interact with other children and professionals to extend this learning. Intentional teaching in this context requires responsive engagement with professionals who assess each child's existing abilities and knowledge and plan for learning experiences that build these competencies.

Successful integrated approaches to learning and teaching move children from where they are in terms of their understanding and build on this using real life examples to make learning engaging and relevant (Edwards, Gandini, and Forman, 2001; Murdoch and Hornsby, 1997). A common misconception about experiential or play-based learning is that children choose topics to cover and that the direction of the learning must always be dictated by the child with little or no adult guidance. This is not the case. Content and topics need to be negotiated and effective negotiation – even with very young children – is a two way process (Copple 2003; Katz and Chard, 2000). Research indicates that while early childhood professionals need to use children's interest and previous knowledge as a foundation for their pedagogical focus, considerable time needs

to be devoted to broadening and deepening children's knowledge, skills, concepts and experience to take them beyond what they already know and can do (Jones and Reynolds, 1992; Tregenza, 2006).

The research also indicates that many early childhood professionals view integrated teaching and learning approaches as unstructured or informal (Broadhead, 2006). Yet structure does not mean total teacher control. In fact research has shown that when professionals have well thought out learning and development outcomes, with a range of pathways open to children regarding how those outcomes might be most meaningfully achieved, children remain engaged with the curriculum longer and on a deeper level than when no structure to the learning has been in place (Sylva, et al., 2007; Tregenza, 2006).

Early childhood professionals know the importance and significance of learning and development in the early years but are often divided in terms of what constitutes best practice and/or high quality. Goldbeck (2001) summarises three conflicting foci in regard to what practitioners believe shapes quality in early childhood, namely:

- whether to focus on short term outcomes versus long term outcomes
- cognitive development versus social/emotional development
- child-centred learning versus adult led learning.

This debate becomes increasingly contentious as children approach school age and begin what is typically seen as the more formal and academic journey through primary school (Fleer, 2010; Houghton, 2006; Hamre, Pianta, Mashburn, and Downer, 2009). Programs that build upon the interests of children and take advantage of spontaneous teaching moments as they arise best provide for the learning needs of children (OECD, 2007, p.174). Acknowledging this, some jurisdictions have developed tools to support teachers and school leaders to deepen their understanding of what constitutes high quality teacher practice in the classroom. The e5 Instructional Model (DEECD, 2009b) used in Victoria, for example, provides a framework to inform conversations and interactions, and guide observation, critique and reflection on classroom practice.

Traditionally, Australian early childhood learning environments have been heavily influenced by a developmental paradigm and constructivist learning theories, with Piaget and Vygotsky's work often dominating the agenda (Berk, 2009; Edwards, 2005). As summarised by Perry (2000, p.4), the 'shift towards a consideration of Vygotskian principles relating to the social mediation of knowledge has prompted a focus not only on what it is that children are capable of on their own (for example as assessed through Piagetian tasks), but also, what they are capable of achieving with the assistance of more knowledgeable others

through scaffolding, and through teachers developing and implementing tasks that target the zone of proximal development (Berk and Winsler, 1995; Bodrova and Leong, 1996; Dockett and Fleer, 1998; Fleer, 1992)'.

In the last few decades, contemporary theoretical approaches to learning and development have placed a growing emphasis on the need to provide children with culturally sensitive, emotionally responsive and differentiated learning environments (Dahlberg, Moss, and Pence, 1999; Hamre, Pianta, Mashburn, and Downer, 2009).

Why is integrated teaching and learning so important in early learning and development?

Early learning has the greatest impact on children's outcomes.

There is now a compelling body of evidence demonstrating that what happens in the early years of a child's life has a lasting effect on learning and development (e.g. Campbell, Ramey, Pungello, Sparling and Miller-Johnson, 2002). Much of the recent debate has centred on the economic return that investing in children's early years can bring in terms of later employability and social outcomes (OECD, 2006). In particular, this interest has often centred on the most vulnerable children and families in society with low socio-economic status, those from Aboriginal communities and those children with disabilities. Children at risk from educational failure have now become a significant focus for early childhood service provision. Research has shown that high quality centre-based intervention programs that focus on the cognitive achievements of children can have lasting benefits (e.g. Barnett, 1995; Lynch, 2004).

Early learning is essential for all children; children have different strengths, abilities and interests and benefit from a range of experiences and opportunities for learning.

Contemporary evidence shows that the best outcomes for children occur when there is an integrated approach to teaching and learning (Sylva, Siraj-Blachford and Taggart, 2003; Hamre, Pianta, Mashburn and Downer, 2009; Sylva, et al., 2007). Ensuring the benefits of learning experiences in early childhood education programs, however, can prove challenging given the complex and interrelated factors involved in providing high quality early childhood learning experiences (Sylva, Siraj-Blachford and Taggart, 2003; Dahlberg, Moss and Pence, 1999; Sylva, et al., 2007; Hamre and Pianta, 2005). The benefits extend

not only to children's cognitive development, but also to social and emotional development from a very young age (Davis, 2004). These approaches are best supported by early childhood professionals who understand children's early capacity for learning, the role of play in learning, and the role of educators in planning for interactions that extend children's learning.

Neurological research shows that young children's brains are extraordinarily active and that early childhood is the optimal time for learning and development.

Research over the past few decades has greatly enhanced our knowledge of how the human brain develops in early infancy and early childhood. During the period from 0 - 8 years the metabolic rate of children's brains rises sharply and stays high throughout this entire period. This means that young brains are biologically primed for learning (Shore, 1997; Blakemore and Frith, 2005; OECD, 2007).

The high level of activity in the first decade of life then begins to decline. Synapses – the site of information transfer from one neuron to another – used frequently become stabalised and will remain, and those that have not been used are often eliminated (Changeux and Dehaene, 1989); a principle of 'use it or lose it'. This early neurological priming sets the foundation for how children process their understanding of the world (National Scientific Council on the Developing Child, 2007).

The use of different brain scanning methods - positron emission tomography (PET scans), magnetic resonance imaging (MRI) or electroencephalography (EEG) – have greatly advanced our understanding of early neurological development. Although the brain has a remarkable capacity for plasticity and change over the lifespan (Crick, 1994), the fact that early childhood is a sensitive period for optimal learning is well established (Shore, 1997; Blakemore and Frith, 2005; National Scientific Council on the Developing Child, 2007). Environmental as well as developmental influences have an impact on children's early learning trajectories. Increasingly, evidence shows that many of the critical periods for learning and development occur in the early years of a child's life (Hamre and Pianta, 2005; OECD, 2007).

Play is an essential element in early childhood learning and development.

Play has long been regarded as the locus for learning and development in early childhood education (Sylva, Siraj-Blachford and Taggart, 2003). The importance of play-based programs for young children has been widely accepted, if not clearly defined (Berk, 2009; Lally and Mangione, 2006; Sylva, et al., 2007). Early

childhood professionals often struggle to articulate what it is about play that promotes learning in young children and how this can be successfully integrated into high quality learning experiences (Edwards, 2005; Kagan, Scott-Little and Frelow, 2009).

Play has many definitions and many theoretical perspectives informing approaches to early childhood education. An early study of children's play carried out by Mildred Parten (1932) observed children aged 2 – 5 years playing without adult guidance or intervention. Parten's research identified four categories of play – solitary independent play, parallel activity, associative play and co-operative play – and showed that there appeared to be a developmental sequence to children's play. The younger the child the more likely they were to engage in solitary or parallel play whereas older children spent more time in associative or co-operative play. The categories she identified have persisted in framing understanding of the dimensions of children's play today (Smith, 1994).

A lay definition of play is often described as child-directed, active, and without rules. This ideology is based on the notion of play as an exploratory process rather than a focused activity to achieve any particular learning outcome or cognitive concept (Broadhead, 2006; Jones and Reynolds, 1992). Yet early childhood professionals conceive play more broadly, as a process through which children construct ideas about the world.

Through play, children learn about relationships, gender, race, fairness, unfairness, friendship and exclusion (Grieshaber and McCardle, 2010). In play, children experiment and develop knowledge and skills in language, literacy, numeracy and science in everyday encounters (Goouch, 2008; Samuelsson and Johansson, 2006; Van Oers, 2003). While play can be child-directed, research evidence shows that lower quality settings have the highest percentage of recorded time where staff are engaged in "monitoring" children's play but not actually interacting in any direct or meaningful way (Siraj-Blatchford et al., 2004).

Integrated teaching and learning approaches enable learning across multiple domains and best practice across service provision in early childhood.

Teaching and learning does not simply focus on a child's cognitive development, because the best outcomes are achieved for children when all aspects of their development are stimulated including social, physical, intellectual, emotional and creative abilities (Dahlberg, Moss, and Pence, 1999; Sylva, Siraj-Blachford and Taggart, 2003). Learning needs to focus on the whole child and their development across multiple domains (Gardner, 1993). Children need to be

equipped with the skills to participate fully and effectively in a multicultural society and understand the particular skills and values that active citizens need (Katz, 2003a).

Understanding that everyday activities and social interactions are the foundation to cognitive, social and emotional development requires conscious and reflective practice from early childhood professionals (Katz, 2003b). This applies not only to formal early education and care settings; understanding the role of play in learning has relevance across the entire early childhood care and education field, including playgroups, parenting groups, specialist children's services, hospital play programs, maternal and child health services and Aboriginal family support programs (Kinsella, 2009). While different delivery models and varied professional, policy, theoretical and philosophical backgrounds have often seen early childhood services develop independently, common to all early childhood professionals is the agreed principle to work together to achieve the best outcomes for all children across the continuum from birth (Mogharreban and Bruns, 2009).

> Children's learning and development is holistic, advancing simultaneously in the areas of health, cognition, personal and social development and wellbeing.
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> VEYLDF, 2009, p. 9.

How can we achieve best practice?

The most successful approaches in early learning build on children's interests and their curiosity to make sense of the world around them.

In order for children to have a strong sense of identity, to feel connected to their world, to have a strong sense of wellbeing and to be confident and effective communicators, early childhood professionals need to take an active role in children's learning. Learning needs to engage and motivate children on an ongoing basis (Siraj-Blatchford, 2007). For learning to be engaging and relevant, successful integrated approaches to learning and teaching should support and build on children's skills and interests. This happens when real life examples are used to make learning engaging and relevant (Edwards, Gandini and Forman, 2001; Murdoch and Hornsby, 1997). The work of Vygotsky (1978; see also Gardner, 1993) emphasises learning as an interactive process with its basis stemming from children's interests.

The practical guide for families and professionals, *Early Childhood Literacy and Numeracy: Building Good Practice* (Fleer and Raban, 2007) provides a range of examples of how everyday experiences can be used to develop literacy and numeracy concepts based on children's own interests and experiences. This particular resource identifies the importance of engaging with even the youngest of infants and providing stimulating, meaningful and culturally relevant and responsive interactions. Extended interactions with infants in everyday activities prove essential for children to engage in learning (Hutchins and Sims, 1999). Research invariably shows that the experiences in the very early years have a powerful influence on later outcomes (Barnett, 1995; Hutchins, 1995; Katz, 2003a; OECD, 2006).

Research indicates that while early childhood professionals absolutely need to use children's interest and previous knowledge as a foundation for their pedagogical focus, considerable time needs to be devoted to broadening and deepening children's knowledge, skills, concepts and experience to take them beyond what they already know and can do (Jones and Reynolds, 1992; Tregenza, 2006). Integrated teaching and learning approaches are most effective when they are interactive, physical, and concrete and involve people, materials and the environment. Young children need practical, hands on learning experiences based on their interests and individual developmental level. Like adults, children learn from their mistakes as well as their successes. When early childhood professionals create a culture for this to happen, children's thinking and learning is enhanced (Walsh, Sproule, McGuiness, Trew, Rafferty and Sheehey, 2006).

Learning experiences, differentiated to fit the individual needs of each child have the most positive outcomes.

Learner-centred practice allows children to explore and experience the world around them in a way that best suits their individual interests and learning style (Dewey, 1915). Learning environments which typify this philosophy look at the whole child rather than compartmentalising learning into discrete and often unrelated experiences. A differentiated environment provides for each child's abilities, culture, perspectives, strengths, interests and learning styles (Arthur et al., 2008). A differentiated learning environment encourages children to co-construct their understanding collaboratively and allows children to explore their own hypotheses about what might work.

Success of this type of approach is seen in the work of early childhood professionals in the Italian town of Reggio Emilia. Children and professionals alike pose problems, ask questions, make suggestions, add complexity to tasks,

and provide information, materials and assistance as needed to enable both children and adults to consolidate learning and move to the next level of understanding (Vygotsky, 1978; Edwards, Gandini and Forman, 1998). A differentiated curriculum attempts to blend experiences across home life and the experience in the early childhood setting so that children can internalise their learning across multiple domains in meaningful ways as they increasingly develop their sense of self and the world around them. Multimodal, differentiated learning environments that respect children's views are of paramount importance in improving the long-term learning and development outcomes (Katz, 2003a).

Early childhood professionals use integrated approaches to children's learning and take an active role in extending learning.

Effective early childhood professionals establish a learning culture where children have the opportunity to engage in a variety of activities which explore the same concepts in a variety of meaningful and engaging ways (Dockett and Perry, 2009). For example, research on mathematical learning highlights the integral role child-directed, guided play and adult-led learning have in concept and skill development across multiple learning domains (Dockett and Perry, 2009; Thomas, Warren and deVries, 2009; Lee, 2009; Hunting, 2009). Dockett and Perry (2009) found that the early childhood professionals with the greatest ability to use play to develop mathematical concepts were also best able to support and extend learning arising from thoughtful and well planned learning experiences. Importantly, these experiences should be planned for children of all ages, because infants have been shown to be equipped with a number sense and a disposition to interpet the world in a quantitative way (Wynn, 1998).

The Effective Provision of Preschool Education (EPPE) study in the UK found that the most effective early learning environments had a balanced focus on communication, language and literacy, knowledge and understanding of the world (including sciences and maths) whereas less effective environments spent almost all of their time focusing on children's physical and creative development (Siraj-Blatchford et al., 2004). This reflects the importance of intentional teaching and a *range* of learning experiences in early childhood education. Where children's arts education is supported by appropriate resources and attentive dialogue with an early childhood professional, children's narrative abilities and conceptual skills can be extended (Wright, 2003).

In relation to learning activities, children in high quality environments participate more in reading, writing and listening, and adult scaffolded activities (Siraj-Blatchford et al., 2004). The most successful environments in the EPPE study spent time exploring scientific aspects of the environment and games that involved the deliberate development of number and mathematical concepts, guided by individual children's interests. High quality environments have more small group activities linked to particular skill acquisition or concept development, where the early childhood professional teaches language, science or numeracy concepts in an activity chosen by the children. Low quality environments are dominated by activities with little or no adult direction, and where children spend more time wandering around or watching others (Siraj-Blatchford et al., 2004).

The principle of integrated teaching and learning approaches highlights the importance of a *balanced* curriculum. In a study of early primary classrooms in the UK using either a teacher-directed curriculum or enriched curriculum – an integrated approach of differentiated learning activities, play and developmentally appropriate based practice (Walsh, Sproule, McGuiness, Trew, Rafferty and Sheehey, 2006) – children in the enriched curriculum classrooms performed better than their traditionally educated peers (i.e. teacher-directed) in all cognitive, affective and learning disposition domains (concentration, confidence, independence, multiple skill acquisition, higher order thinking skills, wellbeing, social interaction and respect). The study found that children with the highest scores were in classrooms where there was a high level of child-adult interaction, activity differentiation and an ethos of individuality. Importantly, the study found that it was not just a matter of adding more play into children's daily activities: the highest scoring environments were those where there was a balance of play, practical and written tasks and an equal balance of child- and teacher-initiated learning activities aimed at a range of different levels and abilities (Walsh et al., 2006).

Learning outcomes for children are enhanced when early childhood professionals reflect on their practice and have high expectations for all children.

The research evidence detailed in the Evidence Paper for Practice Principle 3: High expectations for every child, has particular relevance to how integrated learning and teaching practices can be enacted to achieve best practice. Having high expectations for every child, every day affirms that children have multiple learning styles, cultural belief systems and personal interests. To reflect this in learning programs, early childhood professionals need to plan varied and stimulating experiences that take account of children's individuality (Arthur, Beecher, Death, Dockett and Farmer, 2008).

There is clear evidence that when adults have low expectations for children's learning and development children often begin to incorporate this negative view into their own concept of self (Rosenthal and Jacobsen, 1992; Montague and Rinaldi, 2001). Early childhood professionals can combat this self-fulfilling prophecy of low achievement by taking an active role in making themselves accountable for the learning and outcomes of the children in their care (Halvorsen, Lee and Andrade, 2009).

Taking responsibility for high levels of achievement and best outcomes for each child requires early childhood professionals to engage in a high degree of professional reflection (see the Evidence Paper for Practice Principle 8: Reflective Practice). The most effective early childhood professionals have a strong commitment to the ideology that all children are capable of experiencing success and demonstrate their commitment to this by providing a balance of child-directed learning experiences, guided play opportunities and adult-led learning (Fraser and Gestwicki, 2002). Adopting a well-balanced approach requires commitment, skill and creativity from early childhood professionals (Edwards, Gandini and Forman, 2001; Edwards, Gandini and Forman, 1998; McLachlan, Fleer and Edwards, 2010).

The best outcomes for learning and development require high quality interactions between children and early childhood professionals.

In a large study conducted by Hamre et al. (2009) it was found that early learning environments where there were strong, emotionally responsive teacher-child relationships, demonstrated the greatest positive overall outcomes for children's learning and development. 4000 early learning environments participated in this national U.S. study, with the most significant improvements observed in children previously identified as being at high risk of school failure (Hamre, Pianta, Mashburn and Downer, 2009). Using the CLASS Framework (Hamre and Pianta, 2007), focusing on emotional support, the learning environment and instructional support, those environments that were observed to have a positive climate, teacher sensitivity, positive and consistent behaviour management strategies and an integrated balance of instructional support consistently improved the outcomes of even the most at risk children.

Children's outcomes can be enhanced when attention is given to the quality of interactions between early childhood professionals and children (Sparling, 2007). Back-and-forth exchanges with infants are not only foundations of language development (Veneziano, 2010), but are the platform for early learning.

The importance of extended interactions is emphasised by Lally and Mangione (2006:1) who describe infancy as "a unique period that calls for unique responses from adults."

The learning games, conversational reading, enriched care giving and language priority of the Abecedarian Approach (Ramey, Bryant, Campbell and Sparling, 1990) further emphasise the importance of exchanges between early childhood professionals and young children. This language-enriched approached has proven to have significant long-term benefits for children, particularly those at risk from multiple social conditions such as poverty, young maternal age, or low parental education (Ramey, Campbell, Burchinal, Skinner, Garner and Ramey, 2000). The importance of the quality of interactions with children were also highlighted in the EPPE study, with the highest quality settings having the most sustained shared interactions (Siraj-Blatchford, 2009); in other words, conversations with children that aim to extend conceptual understanding.

The quality of interactions between early childhood professionals and children of all ages are fundamental for learning and development (Katz, 2003b). How professionals talk with and listen to children is emphasised in the following summary of strategies used by educators to support learning in early childhood (OECD, 2007, p.175):

- *Listening to children* – seen as fundamental to finding out about the learning strategies children bring to a problem or activity, the strengths they have, and the points where more knowledgeable others can help.
- *Listening to and co-coordinating with parents and family members* – to establish children's strengths and interests, to learn of their dispositions and find out how the child's development and learning is mediated at home.
- *Establishing common knowledge* – exploiting situations when children are together in groups, such as in kindergarten, provides common experience and common ground for expanding children's thinking. Encouraging children to recall experiences that relate to a current task is seen to build learning continuity and establish new concepts and understandings.
- *Using positive modelling* – educator modelling of meta-cognitive strategies that regulate task achievement (e.g. What is my problem? What is my plan? How am I going to proceed? What worked? How do I know?) is seen to impact positively on young children's learning behaviours. Asking children to predict and build theories to explain events in which they show interest is thought to keep children interested and active (What do you think? Why do you think that?).
- "*Re-cognising*" (Meade and Cubey, 1995). Reflecting in words to young children what they are doing in action is seen to help clarify processes and ideas. Scaffolding a child's "hands on" experiences is a key mediation role of educators in early learning environments.

- *Giving specific instruction* in certain skill areas is thought to be important. For example, for older preschoolers emergent literacy research suggests that children need increasing phonemic awareness and grapho-phonic knowledge for successful reading. Games (rhymes, sorting, odd-one-out, etc.) may be used to practise and build repetition. Teaching routines that ensure personal safety and hygiene are considered important.
- *Spending time in observation* – educators may stand aside from, or join in, children's tasks according to the learning events taking place. Generally, it is seen as important for children to have control of their learning in a supported way.
- *Celebrating diversity* – educators may act to endorse and expand children's knowledge of diverse language and dialects, and become thoughtful about approaching topics in a variety of ways (musical, story-based, play, discovery, pictorial, artistic, logical deductive) because of realisations that children learn in diverse ways and can show understanding by using different symbolic media.
- "*Focusing*" *through recall and restatement* – early educators' questions, explanations and the linking together of different events are seen to help children focus and progress their understanding.
- *Ensuring children experience different speaking and listening situations* in order to broaden communication experiences. This is seen by some early educators as an important role for adults when they engage with young children.

  Current understandings of brain growth provide an appreciation of how biology and the environment – the learning context – are inextricably linked. Early educators view the young child as an active learner and consider each child's developmental level and individual characteristics in the context of the child's family and community (Gilkerson, 2001).

Implications for practice

1. Neuroscientific evidence proves that early learning matters for later outcomes.

Increasingly sophisticated neurobiological research shows that pathways set in the very early years of a child's life program particular ways of learning. While genetics play an important role in this selective process, it is often a child's early experiences that are crucial in determining how the brain will eventually be hard wired.

2. Play is essential for early learning.

Young children learn through play, developing cognitive skills and knowledge of the world around them. Optimal opportunities for learning in play occur when

early childhood professionals engage meaningfully, and seek to build children's concept development in play activities.

3. Integrated approaches to teaching and learning are most effective when they respond to children's strengths, abilities and interests.

Early childhood professionals achieve the best outcomes when they can identify and respond to spontaneous teachable moments in activities where the children are already engaged, and scaffold children's learning to create learning opportunities.

4. Learning experiences, differentiated to fit the individual needs of each child have the most positive outcomes.

Learner-centred practice allows children to explore and experience the world around them in a variety of different ways that best suits their individual interests and learning style.

4. Extended interactions – where early childhood professionals provide responsive feedback to extend children's contribution are a foundation for learning.

Learning outcomes for children are enhanced when early childhood professionals take an active role in children's learning through observation, listening, questioning, constructive feedback and open communication.

5. The best learning outcomes for children occur when there is a balance between child-directed play, guided play and adult-led learning.

Planning for a flexible and responsive learning environment requires professionals to move to more integrated ways of approaching teaching and learning. This planning involves creating opportunities for child-directed and adult-led activities, ideally in small groups.

6. Integrated teaching and learning approaches require early childhood professionals to reflect on their practice.

The evidence summarised in this paper shows that effective planning for learning needs early childhood professionals to know the strengths, abilities and interests of children in order to build effective learning experiences. This requires the reflective practice that informs the work of all early childhood professionals.

Appendix A Methodology

In order for the review of contemporary research evidence to be methodological sound, relevant and robust it is important to include a description of sampling procedures and research methods undertaken. To begin with, an online database search was carried out for current literature using the following search terms:

- Play and learning in early childhood settings
- The role of play in school settings
- Integrated teaching and learning early years
- Early childhood, play, integrated learning and teaching

This yielded more than 15,000 articles so in order to refine the search and identify the most relevant literature the following additional key words taken from the VEYLDF (Department of Education and Early Childhood Development, 2009) were included:

- Best practice
- Supporting children's learning through play
- Evidence based planning
- Challenge and change in early years practice
- Neuroscience
- Early brain development
- Teaching and learning
- CLASS

In addition to this, it was felt important to include a review of literature which, where possible, included the views of children, parents/carers and community groups as well as the views of early childhood practitioners. As the Practice Principles for learning and development become the foundations for professional practice across a diverse range of early childhood settings these final key words were included:

- CALD
- Disadvantage
- Indigenous
- Disability

The University of Melbourne's online databases were search using "Supersearch". This provided a wide selection of electronic journals, scholarly databases, theses and government reports, locally, nationally and internationally, with a particular focus on those abstracts identifying a specific Australian context.

The databases searched were:

- Web of Science
- JSTOR
- ERIC
- Family and Society

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