



# Self-regulation

a foundation for wellbeing  
and involved learning



Children's Services Central is the Professional Support Co-ordinator in NSW.  
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“Self-regulation brings together the nature versus nurture argument. It demonstrates that both are important in children’s development – biology and experience.”



Self-regulation has become an important topic of interest in regard to children’s learning and development with an emerging understanding of its contribution to children becoming positive learners as well as their long term mental health<sup>1</sup>. Though not a new idea, its relationship to other elements critical to children’s learning has become clearer. It has been described as a revolution in educational thinking and practice and can be seen in each of the elements outlined in Australia’s Learning Frameworks as well as the important outcomes these identify for children.

Shonkoff and Phillips (2000) described self-regulation in children as –

“developing the capacity to manage powerful emotions constructively and keep one’s attention focused”.

Shanker (2010) has built on the work of Stanley Greenspan and described it as –

“the ability to manage your own energy states, emotions, behaviours and attention, in ways that are socially acceptable and help achieve positive goals, such as maintaining good relationships, learning and maintaining wellbeing.”

Self-regulation brings together the nature versus nurture argument. It demonstrates that both are important in children’s development – biology and experience. For educators it shows that the people involved with children’s care and education make a critical contribution to their future life outcomes and this enables children to be capable, active and involved learners.

There is now significant evidence that effective self regulation in the early years provides a foundation for children to develop and grow in a way that develops positive dispositions

and skills for learning. It is recognised as a key indicator of better health and education, significantly decreasing the possibility of both developmental and learning difficulties in the future.<sup>1</sup>

To understand this better it is necessary to first look at the new information available and then consider how it applies to educators in their approach to their work with children.

“The better we understand the complex biological and experiential interactions involved in self-regulation, the better we can design classroom practices that will enhance ... self-regulation...”<sup>2</sup>

## What does the science tell us?

The ability for children to self-regulate has a greater importance in the early years as it is more difficult to change a child’s education and life outcomes once they enter kindergarten or grade 1<sup>3</sup>. Earlier accepted thinking was that this was determined by a child’s intelligence (IQ) and could not be altered, but more recently research has identified effective self-regulation as the key for better school performance<sup>4,5,6</sup>. It shows the important role of self-regulation in both brain development and effective ‘attachment’ as a result of frequent contact with trusted adults. It is also a significant factor for a child’s wellbeing and the sustained attention that results in deep learning<sup>7</sup>.

There has also been important progress in relation to thinking about self-control, with evidence now that a child’s ability to regulate their state of arousal and their emotions is critical to their ability to develop and use the skills that underpin self-control<sup>1</sup>. Arousal is the response to sensory stimulation – sound, touch, light, taste and smell which might initially be physical but is likely to affect an emotional response. It is then important that self-control is understood to be an ability that

<sup>1</sup> Casenhiser, D., Shanker, S. & Stieben, J. (2012) *Understanding the Nature of Self-Regulation*, Milton & Ethel Harris Research Initiative, York University, Canada.

<sup>2</sup> Shanker, S. (2012) *Calm, Alert and Learning*, Pearson Canada Inc. Toronto, Ontario.

<sup>3</sup> Shanker, S. (2009) *Developmental Pathways: Scaffolding for Early Learners*, (Presentation), Research Professor & Director, Milton & Ethel Research Initiative.

<sup>4</sup> Shonkoff, J. & Phillips, D. (2000) *From Neurons to neighbourhoods: The science of early childhood development*, Washington DC, National Academy Press.

<sup>5</sup> Shanker, S. (2010) *Self-Regulation: Calm, Alert and Learning* (Presentation), Education Canada, 50:3.

<sup>6</sup> Blair, C. & Diamond, A. (2008) *Biological processes in prevention and intervention: The promotion of self-regulation as a means of preventing school failure*, *Developmental Psychopathology*, 20(03), 899-911.

<sup>7</sup> Laevers, F. (2003), *Making care and education more effective through well being and involvement*, *Studia Paedagogica* 35, Leuven University Press.



“Though all children have the ability to develop self-regulation, to do this they must experience supportive environments.”

is the result of a child developing the capacity to self-regulate rather than a skill, ability or characteristic that a child may, or may not have, from birth. This is significant because it is likely to affect the way educator’s think a child might behave or react in a particular way.

It is clear that it is not helpful to blame a child for their behaviour, to handle them firmly to ‘correct’ their behaviour. This approach makes it even more difficult for them to manage their emotions in a situation they already find difficult. Further, it can be highly damaging to a child’s mental health.<sup>2</sup>

“It is essential that we look at students through a different lens, to shift from thinking in terms of behaviour to figuring out why we see certain behaviours and what can be done to help learn to self-regulate”.<sup>2</sup>

Behaviours educators may find annoying or difficult are likely to indicate a child needs help with regulating their emotions or their state of arousal; they are most likely to be searching for how to reduce the stress or discomfort they feel in order to feel secure in a situation or environment. However, the behaviours or actions educators might see from children trying to deal with an uncomfortable situation may not be socially acceptable or safe.

Though all children have the ability to develop self-regulation, to do this they must experience supportive environments. This includes educators responding to children’s individual ways of dealing with new or more difficult situations, recognising there are both strengths and challenges for each child to deal effectively with the stresses and challenges of life and learning. Shanker describes self-regulation as a system for dealing with this stress.

Casenhiser, Shanker and Stieben (2012) reinforce that the ability to self-regulate is not something that will simply emerge as a child gets older –

“A child is not born with the capacity to self-regulate; nor is this purely a maturational phenomenon”.

A child relies on having positive and supported social experiences from birth to acquire the ability to regulate their own arousal state and emotions. Shanker (2012) outlines three important findings from the research:

- Children acquire the ability to self-regulate by first being regulated;
- Adults around children need be regulated themselves; and
- Regulating a child involves modulating the intensity of stimuli in order to engage and sustain the child’s attention.

It is important then that children are guided and supported by a caregiver being ‘in touch’ with their needs and who themselves is able to regulate their own emotions<sup>1</sup>. The way an educator responds to the needs of children is the most significant contributor to them developing the capacity to self-regulate in a children’s setting. It is also depends on whether a child feels they belong and so are comfortable with their relationships and the environment is familiar.

Maturation is also an important factor. Children cannot walk at birth but develop the ability as their body grows stronger along with their capacity to co-ordinate their thinking with their movements. In this same way, a child has to come to understand their particular sensory needs and challenges, and learn how to manage sometimes an overly arousing stimulus (e.g. loud noise, strong light) or when and how to seek out interesting and stimulating experiences<sup>1</sup>. Children can increasingly develop the ability to regulate their reactions to stimuli when the environment is safe and supportive.<sup>4</sup>

<sup>1</sup> Casenhiser, D., Shanker, S. & Stieben, J. (2012) *Understanding the Nature of Self-Regulation*, Milton & Ethel Harris Research Initiative, York University, Canada.

<sup>2</sup> Shanker, S. (2012) *Calm, Alert and Learning*, Pearson Canada Inc. Toronto, Ontario.

<sup>4</sup> Shonkoff, J. & Phillips, D. (2000) *From Neurons to neighbourhoods: The science of early childhood development*, Washington DC, National Academy Press.

“Children need the guidance and support of trusted adults who understand their needs and help them develop alternative strategies to regulate their emotions.”



Children do this across several ‘domains’<sup>8</sup> and learn to co-ordinate their thinking with different sensory stimulus. This contributes to brain development with the experience providing important information about the child’s body and their environment. This is then integrated across those domains as well as with existing information they have already stored from previous experiences.

Building on earlier work of Baumeister and Vohs (2010), Shanker (2010) explores five domains of self-regulation and the ability that needs to be developed in each:

Domain	Ability
<b>Biology</b> – Temperament and arousal, activity or the level of energy	Attain, maintain and change one’s level of arousal appropriately for a task or situation
<b>Emotion</b> – Feelings and moods	Monitor, evaluate and modify emotions
<b>Cognitive</b> – The ‘executive’ functions of the brain. Memory, attention, retain information, problem solving	Display ‘effortful’ control over negative and less helpful emotions Sustained attention- not easily distracted facilitating children to be able to be involved Attention switching- able to transition between tasks Inhibit impulses Deal with frustration, delay, ignore distractions
<b>Social</b> – The ability to understand social situations and function in them	Assess social cues, development and mastery of socially desirable behaviours, as well as plan, monitor and evaluate progress towards socially constructed goals
<b>Prosocial</b> – Moral, reflective	Development of empathy and values, thinking and planning skills, awareness of learning strengths and weaknesses

These domains relate to each other but are also interdependent. A child’s ability to self-regulate is affected by how they work together. Shanker further outlines that –

“A child’s reactivity to stimuli (sound, light, touch etc) and ability to disengage from stressful stimuli has a profound effect on her emotional regulation and, in turn their ability to regulate the emotional response has an impact on their ability to focus or shift attention and inhibit distractions, resolve attention conflicts, inhibit impulses, delay gratification and tolerate frustration.”<sup>1</sup>

Each child reacts to stimulus in a different way, affected by their individual biological make-up and characteristics, as well as being influenced by previous experiences. As a result each child’s level of arousal is different and affects the way they react, think and act (response).

“What the five-domain model of self-regulation tells us is that this ability to stay self-regulated when confronted with novelty involves all of these levels: arousal states, emotions, behaviour, and – as the child grows older – thinking skills”.<sup>5</sup>

Without the ability to regulate their emotional response children may become stressed or anxious. To deal with these situations they develop coping strategies and these may present to educators as challenging behaviours, particularly in a social environment. Children need the guidance and support of trusted adults who understand their needs and help them develop alternative strategies to regulate their emotions.

<sup>1</sup> Casenhiser, D., Shanker, S. & Stieben, J. (2012) *Understanding the Nature of Self-Regulation*, Milton & Ethel Harris Research Initiative, York University, Canada.

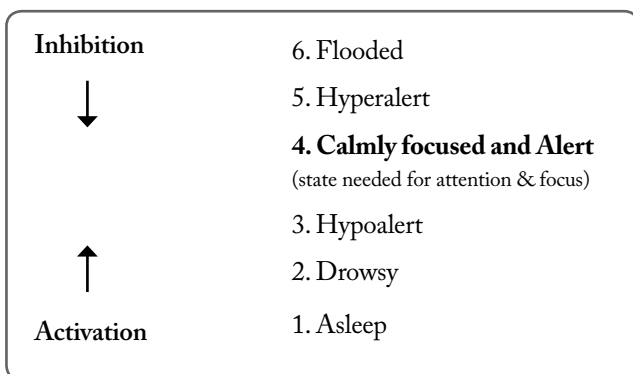
<sup>5</sup> Shanker, S. (2010) *Self-Regulation: Calm, Alert and Learning* (Presentation), Education Canada, 50:3.

<sup>8</sup> Baumeister, R. & Vohs, K., (*Handbook of Self-Regulation*, 2010 Edition), Guildford Press, New York.



“In children’s settings educators understanding that each child will react differently in similar situations supports this development.”

A child’s state of arousal and the ability to manage it is important to be able to self-regulate. Shanker further identifies the following stages of arousal –



“The first domain of self-regulation is the basic physiological level which includes arousal. Children move between stages (shown) depending upon the conditions, their response to them and their energy level. With the help of trusted adults children develop an ability to regulate attention according to the demands of the task or activity. Without help they can use up too much energy, particularly in response to stress and anxiety caused by the environment, including other children and adults. Behaviours that interfere with learning or are challenging are the result of low energy levels and increased stress.”<sup>1</sup>

Children move between these stages depending on the needs of the situation and their energy levels. Energy can be thought of as ‘fuel in the tank’. Negative emotions such as fear, anger and frustration, stress and anxiety require large amounts of energy to manage. They are also a barrier to learning and development caused by the body’s natural response to these situations. It

becomes highly alert in order to be able to respond quickly. It produces an automatic ‘protect and defend’ response that uses large amounts of energy as a child searches only for a way to feel safe and secure. In this heightened state learning is not possible and children quickly tire and their ‘fuel tank’ becomes low.

The ability to better respond to these situations and regulate their own arousal state enables children to maintain attention or return to being calmly alert more quickly. This ability develops from birth initially but gradually strengthens through opportunities to adapt to different social environments.

In children’s settings educators understanding that each child will react differently in similar situations supports this development. Some babies love a mobile moving above their cot and others are bothered by it. Some children are busy and active and others less so. Some can deal with change and transitions in the routine, for others it is challenging and they become distressed.

It is important that a responsive approach to individual children is provided rather than expecting or directing behaviours which might be seen as ‘normal’ or ‘good’. Children are able to learn to modulate their emotions (up or down) as a result of the sensitive support provided by an educator. Greenspan (2007) observed that this occurs around 18-24 months.

In comparison, non-supportive environments inhibit emotional development and make learning difficult. As children are constantly seeking to feel safe and secure they are unable to become involved in play which would provide the opportunity to develop positive dispositions for learning.

“Very simply, the development of children’s cognitive abilities is fundamentally dependent on how well children function emotionally.”<sup>2</sup>

Children’s biology and their social or environmental situation causes a range of responses and affects the amount of energy

<sup>1</sup> Casenhiser, D., Shanker, S. & Stieben, J. (2012) *Understanding the Nature of Self-Regulation*, Milton & Ethel Harris Research Initiative, York University, Canada.

<sup>2</sup> Shanker, S. (2012) *Calm, Alert and Learning*, Pearson Canada Inc. Toronto, Ontario.

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each child needs to use to engage in play. The amount of energy a child has available at any given time is a result of the number and level of stressors present and affects their ability to engage effectively and in particular, sustain attention. This is also affected by their ability to regulate their state of arousal and emotions which itself varies widely. Those children with less ability to self-regulate use greater amounts of energy leaving less in the ‘tank’ to sustain their involvement for extended periods.

Lillas & Turnbull (2009)<sup>9</sup> likened children’s attempts to regulate to putting your foot on the brake or accelerator to control a car. Some children are constantly pushing too hard on the accelerator or the brake, jumping erratically from one level to another of not hard enough. They need help to enable them to learn the cognitive and emotion-regulating skills that underpin self-control.

Using a similar approach Shanker and his multi-disciplinary team working with children with learning difficulties and developmental challenges ask children “how is your engine running today”. This approach, used in the Alert Program<sup>10</sup>, helps them become ‘in tune’ with their current state. Is it too fast, too slow or OK? They can then respond better in helping them to develop strategies and experiences that will move them closer to being relaxed and calm or optimally regulated.

### So what does this mean for educators work with children?

It is important for children’s effective development and learning for them to show and sustain interest through being curious and involved in their world<sup>11</sup>. To do this children need to be able to self-regulate their emotional and physical responses to their environment in order to be calmly focused and alert, particularly in dealing with new or changed situations. This, in turn, relies on the responses and guidance of trusted and knowledgeable adults. In the ECEC

environment, educators that can observe, or are alert to, how children are managing and who are able to identify and respond to individual needs in a sensitive and thoughtful way. This enables a child to return to being calm and relaxed.

Play-based learning experiences provide the opportunity for children to develop and maintain optimal regulation particularly in the social environment provided in ECEC services. In play, children bring together all of the five domains and use the processes of learning in which self-regulation is developed. It is mastering this ability that provides the foundation for becoming confident learners. It is important educators shift the focus from an emphasis on product to the learning process.<sup>2</sup>

Secure relationships is the other important part for educators to bring about positive responses from children to their environment.

“Regulation in early development is deeply imbedded in the child’s relations with others.”<sup>4</sup>

Educators need to be alert to the individuality of children’s emotions and natural dispositions and be intentional about how to respond<sup>11</sup>. It is important for educators to know that their thoughtful and sensitive involvement in challenging moments can make an important contribution to their learning. They need to understand that children are learning how to regulate their own responses and to deal with the anxieties and excitement that occur each day and the challenges that brings.

It is during these early years, at the time of their most significant growth and development that provides the best opportunity for children to develop a strong identity and sense of wellbeing to enable them to become positive learners. Knowing and being alert to children’s individual responses to different stimuli and stressors, along with their effect on their emotional state, allows educators to support children by

<sup>2</sup> Shanker, S. (2012) *Calm, Alert and Learning*, Pearson Canada Inc. Toronto, Ontario.

<sup>4</sup> Shonkoff, J. & Phillips, D. (2000) *From Neurons to neighbourhoods: The science of early childhood development*, Washington DC, National Academy Press.

<sup>9</sup> Lillas, C. and Turnbull, J. (2009) cited in *The Importance of Self-Regulation*, presentation for ECA/CCSA conference, 2011.

<sup>10</sup> *The Alert Program*, www.alertprogram.com, published by TherapyWorks.

<sup>11</sup> DEEWR, (2009) *Belonging, Being and Becoming*, Early Years Learning Framework.



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modelling regulating behaviours and guide how to manage them.

“The better...teachers understand the reasons why a child might be acting up, or not paying attention, or having trouble staying focused, or having trouble falling asleep, or being aggressive on the playground, or insensitive to the feelings of others, the better they can help that child to stay regulated ...”<sup>1</sup>

The Learning Frameworks outline that children demonstrate a strong sense of identity through “an increasing capacity for self-regulation.” (EYLF, DEEWR 2009) Being alert to children’s different reactions and responses provides opportunities for educators to help them make sense of, and then deal with, all the information they receive and the social situations they experience. It also helps them to identify acute sensitivities that trouble or even hurt children such as noise, light, movement or a busy and active environment. This knowledge contributes to understanding that a child’s social difficulties are now better explained as defense mechanisms.<sup>1</sup>

A better understanding of the effect of the physical environment can help educators to provide one that supports children better, is calm to the senses and does not over, or under, stimulate children. This includes spaces that -

- use pastel colours rather than strong, bright colours which is often assumed children like,
- are ordered and uncluttered and have familiarity,
- have space for children to move around easily and are not crowded,
- provide a calming, safe place where children can go to withdraw and relax, when needed
- do not have too much hanging from ceilings and covering walls,

- reduce the use of loud or constant sound or use noise absorbing materials
- use natural light as much as possible
- allow educators opportunities to comfortably spend time, watch and play with children.<sup>12</sup>

Environments without these elements are likely to contribute to heightening children’s arousal for extended periods. Children are more likely to tire quickly (low energy) and find it difficult to take an interest or engage in play and certainly not sustain attention or focus. Feeling safe and relaxed is necessary for children to develop the positive dispositions that underpin learning effectively through play.

Shonkoff and Phillips outline that –

“Living and learning require people to react to changing events and then to regulate their reaction. The capacity to react and the toll that reaction takes depend on the capacity to recover from the reactions.”

It is the ability to regulate emotions that enable children to be curious, enthusiastic and explore and so become involved in play and experiences that support deep-level-learning.<sup>7,13</sup> Being involved in social play based on children’s interests provides further opportunity for children’s minds and bodies to work together and helps them continue to develop the ability to self-regulate.<sup>14</sup>

A sound understanding of self-regulation allows educators to develop environments and everyday practice that can help children develop the ability to become ‘calmly alert’<sup>1</sup>. Some techniques educators can use are proving highly effective including –

- reducing the amount of unnecessary stressors such as noise, bright colours, clutter and tight, busy spaces;

<sup>1</sup> Casenhiser, D., Shanker, S. & Stieben, J. (2012) *Understanding the Nature of Self-Regulation*, Milton & Ethel Harris Research Initiative, York University, Canada.

<sup>7</sup> Laevers, F. (2003), *Making care and education more effective through well being and involvement*, Studia Paedagogica 35, Leuven University Press.

<sup>12</sup> Shanker, S. (2012), *The Importance of Self-Regulation*, ECA/CCSA presentation.

<sup>13</sup> Katz, L. (1993), *Dispositions: Definitions and Implications for Early Childhood Practices, Perspectives from ERIC/ECCE: a monograph series* (Urbana, IL, ERIC Clearinghouse on ECCE).

<sup>14</sup> Carr, M. (2001) *Assessment in Early Childhood Settings: Learning Dispositions* (London, Paul Chapman).

“Knowledge of self-regulation provides a foundation to guide educators to respond in a way that can help children develop the ability to regulate themselves.”



- responding consistently and sensitively to help calm and soothe anxious, unsettled, frustrated or stressed children;
- helping children develop awareness of their own feelings and states of arousal;
- using physical activity and/or relaxation exercises and music for children to help them regulate their arousal state (up or down) (children that need activity to regulate may show behaviours similar to ADHD);
- providing a range of ‘self-regulating experiences and materials such as dough, clay and sand
- greeting and farewelling children warmly each day;
- identifying stressors for individual children and what helps them to be calm and relaxed;
- fostering secure attachment relationships that provide sensitive and consistent emotional support that responds to children’s individual sensitivities and temperaments;
- being attentive to and modelling responses and actions that are appropriate in a social environment;
- not requiring or expecting ‘self-control’ or ‘compliance’ but assisting children to develop an increasing ability to self-regulate;
- not ‘blaming’ or punishing children for their behaviour as it only adds to their stress;
- using sound as an additional tool to identify transitions;
- identifying children who have difficulty with change, new of different situations and prepare and assist them;
- assisting children to anticipate typical transitions; and
- providing ‘fidget’ toys such as exercise bands and worry beads to help them stay calm and alert.

*Adapted from Calm, Alert and Learning*

It is educator’s practice and interactions that support children to become positive learners and develop a strong sense of wellbeing. Their support and guidance helps children to ‘internalise’ educator’s voices and experiences. This helps children develop the ability to regulate themselves<sup>15</sup> and be calmly focused and alert now and in the future.

The Learning Frameworks acknowledge self-regulation as an important contributor to the elements, principles and outcomes for children. These rely on educators continuing to develop their own knowledge and skills to be able to assist that development effectively. This includes being in tune with and regulating their own emotions. The better educators (and parents) can remain regulated the better they can help children do the same.<sup>2</sup>

The interim report of the E4Kids study identifies these intentional teaching practices and emotional support for children as needing to be improved with “a need to pay more attention to early educator’s awareness of and influence on children.”<sup>16</sup> Knowledge of self-regulation provides a foundation to guide educators to respond in a way that can help children develop the ability to regulate themselves. Children can then develop a positive view of themselves and become confident learners.

<sup>2</sup> Shanker, S. (2012) *Calm, Alert and Learning*, Pearson Canada Inc. Toronto, Ontario.

<sup>15</sup> Grenspan, S., (2007) *Great Kids: Helping Your Baby and Child Develop the Ten Essentials for a Healthy, Happy Life*, De Capo Press.

<sup>16</sup> E4Kids Research Bulletin (Jan, 2012), *Assessing the quality of Australian child care and kindergarten*.





“The Learning Frameworks acknowledge self-regulation as an important contributor to the elements, principles and outcomes for children.”

### FURTHER READING

Shanker, S. (2012) ‘Calm, Alert, and Learning’, Pearson School Canada and its companion website: [www.pearsoncanada.ca/cal](http://www.pearsoncanada.ca/cal)

Sims, M., Guilfoyle, A. & Pary, T. ‘What cortisol tells us about quality in childcare centres’, *Australian Journal of Early Childhood*, Vol. 30 No 2, June 2005.

### DISCUSSION QUESTIONS

- Is the environment familiar, interesting and engaging for children without being busy and cluttered?
- Are educators alert to, ready and feel able to help children who are upset, angry, distressed to be able to manage their emotions better?
- Is the program developed to ensure there are opportunities for educators to spend extended periods comforting, supporting, listening and talking with children?
- Are educators alert and sensitive to behaviours that inhibit learning and what might be the cause?
- Are learning experiences directive or based on children’s interests
- Are children able to take time to be comfortable, relaxed and make choices?
- Do you feel comfortable helping parents understand their child’s sensory and emotional development?