

A Psychological and Developmental Understanding of Affective-Social Self-Regulation

Affective-social self-regulation: the ability to read the cues and purposefully adjust our response

Throughout every school day, children and adolescents find themselves in a range of changing contexts, engaging in numerous different encounters and tasks. Each situation, task and encounter requires a response from a range of possible choices. Children who anticipate, and then read the available, contextual cues to enable them to select the optimal affective-social response to the situation, task or encounter at hand are self-regulating. For example, teachers self-regulate when they purposefully choose the appropriate posture to adopt with a particular pupil, rather than assuming a 'one size fits all'; pupils self-regulate when they effortfully choose to resist a distraction even though the distraction may be tempting; parents self-regulate when they intentionally choose to stand back and allow their child to struggle doing their shoe laces so that they learn self-management and independence, rather than stepping in and doing it for them to save time.

Affective-social self-regulation has been defined as the ability to flexibly activate, monitor, inhibit or adapt one's non-conscious, automatic affective-social strategies in response to direction from internal cues, environmental stimuli or feedback from others, in order to bring about an intended outcome (Rothbart et al. 2000; Demetriou 2000; Eisenberg N. et al. 2006). As such, it is often effortful, volitional, conscious and purposeful (Eisenberg et al. 2000; Eisenberg et al. 2010; Hofer et al. 2010; Rothbart, Bates 2007; King et al. 2013, Bauer, Isabelle, M., Baumeister, Roy, F. 2011), and is sometimes described as effortful control. Put simply,

Self-regulation is the ability a pupil has to read the cues, both internal and external, and purposefully adjust their response in a particular situation, enabling the pupil to adapt in a flexible manner.

Research into the development of self-regulation in children and adolescents has grown exponentially over the last fifteen years; indeed in the preface of their seminal handbook on self-regulation, Vohs and Baumeister believe '*self-regulation has emerged from obscurity and uncertain beginnings to become one of the most central important concepts of all psychology*' (Vohs, Baumeister 2011 p7). Such a bold statement is upheld by a swathe of evidence identifying self-regulation as a foundational developmental skill which underpins future affective, social and academic competence (Vohs et al. 2008); in contrast, poor self-regulation has been found to correlate with a wide range of internalising and externalising difficulties (Eisenberg et al. 2000; Blair 2002; Trentacosta, C.J., & Shaw, D.S. 2009; Tangney et al. 2004).

The term self-regulation may not yet be a term used by school professionals; they be more familiar with terms such as social skills, impulse control, self-management, executive function or emotional literacy – all of which may be seen as components of self-regulation. However, once the term self-regulation is described, as the ability to read the cues and adjust our response, it is a skill they recognise; they can call to mind those pupils who struggle to self-regulate, and its adverse impact on their ability to make optimal choices as they engage in the world around them. In fact, statistical analysis questionnaire completed by school professionals often cite self-regulatory difficulties as a greater barrier to school achievement than intelligence; a view corroborated by academic research (Blair, Diamond 2008; Carlson 2005). Perhaps the question to ask is this: *can teachers identify and support pupils who struggle to self-regulate before those risks become manifest in observable limiting behaviours and difficulties?*

A journey from extrinsic regulation to intrinsic self-regulation

One might assume that self-regulation is a skill which develops later on in childhood, in line with cognitive development; however, evidence suggests that the youngest of infants know how to adjust their affective-social responses in order to bring about an intended outcome. Babies of just a few weeks soon learn to self-soothe and elicit attention from their caregivers (Kopp 1982), and by the age of one, toddlers are able to purposefully choose what to disclose to a caregiver and what to hold back (Calkins, Fox 2002). Whilst self-regulatory capacity is evident from a very young age, it is a skill that emerges and matures, particularly during childhood and early adolescence as children move from experiencing extrinsic regulation from their closest care givers, to inculcating intrinsic self-regulatory skills (Eisenberg et al. 2010).

When children are young, caregivers provide extrinsic affective-social regulation. Young children are given fewer choices; risks are minimised and their behaviours more directed by their caregivers in order to keep them safe, and enable them to internalise healthy routines such as sleeping and eating patterns. Their emotional valence is noticed and contained by a caregiver who can bring their emotional valence to a more comfortable state e.g. when a baby is agitated, they are rocked and settled.

Throughout early childhood, caregivers provide a scaffolding which enables children to begin to self-regulate. They are given a range of choices from which they can choose; they are given behavioural expectations which signpost and make visible appropriate self-regulation (Cassidy, Cassidy-Shaver 2008; Fabes et al. 2001; Spinrad et al. 2007; Bronson 2000; Vygotsky L. 1962); they hear the language of choice and consequence which enables them to anticipate the consequences of the choices they make and develop self-reflection to support improved choices in the future; they see emotional regulation modelled by their care givers at times of high valence; when distressed or overwhelmed caregivers notice, validate and emotionally contain a child's feelings, coaching them to find expressions which are socially appropriate and lead to healthy emotionally self-regulation (GROSS 2002; Smith, Hart 2011; Sroufe 1997b); they are taught effective problem solving strategies which enable them to notice and evaluate options which increases their self-efficacy and agency (Smetana et al. 2006; Casey, Caudle 2013; Yurgelun-Todd 2007; Sroufe 1997a; Steinberg 2007; Sebastian et al. 2008).

As children enter adolescence, they begin to show increased evidence of intrinsic self-regulation. They exhibit decreased impulsivity, increased ability to anticipate, plan and execute a decision and are more discerning about what they disclose and to whom (Colman et al. 2006; Bohlin, Hagekull 2009; Kopp 2009; Posner, Rothbart 2000; Carlson 2005; Altman, I., & Taylor, D. A 1973; Ryan, Deci 2000; S. S. Feldman & G. R. Elliot). There are some areas in which adolescent self-regulation shows impaired function, notably risk taking when within a social, particularly peer setting (Rolison, Scherman 2002; Smetana et al. 2006; Steinberg 2008; Crockett et al. 2006).

Emergent and ecological

Whilst affective-social self-regulation is seen as emergent throughout childhood and adolescence, it is a skill which is influenced by an interaction of biological and environmental factors. Children with temperamental traits such as high emotionality and impulsivity find it harder to develop self-regulatory skills than peers who do not have these traits to the same degree (Rothbart, Bates 2007; Sallquist et al. 2009; King et al. 2013; Lengua 2002). The adverse impact of environmental factors such as economic disadvantage, marital discord and neo and post-natal stress have been found to be compounded when children also struggle to self-regulate, with self-regulation seen as a mitigating, moderating protective factor (Raver 2004). Perhaps the most influential factor in the development of self-regulation is the quality of caregiving; punitive and authoritarian parenting styles, inconsistent limit setting, maternal wellbeing and lack of caregiver warmth, sensitivity and responsiveness have all been found to hinder the early development of self-regulation (Maughan, Cicchetti 2002; Williams et al. 2009; Lengua 2002; King et al. 2013; Raffaelli et al. 2005; Choe et al. 2013; Eisenberg et al. 1996a; Bowlby 2005; Eisenberg et al. 1996b). Furthermore, parents who do not recognise the need for the environmental scaffolding to be sensitively and responsively adjusted, and manifest over parenting or anxious parenting are less likely to inculcate self-regulation skill in their children (Barber et al. 2005; Grüner et al. 1999). Indeed there also seems to be a dynamic, ecological factor at play; there is evidence to suggest that children who struggle to self-regulate face a higher risk of bidirectional affect with caregivers struggling to optimally regulate their own responses to a child who elicits a highly loaded affective state within them, making it more difficult for these parents, caregivers or teachers to give the quality of self-regulatory support to the very children who need it most (King et al. 2013).

Although self-regulation is environmentally and ecologically influenced, longitudinal studies show that once this skill is acquired, it is largely stable and exhibits a stronger trait like state (Rothbart et al. 2000), and greater resilience to a moderate, transient or contextual factor (Eisenberg et al. 2010). However, self-regulation is ecologically sensitive; should there be a particularly acute or sustained number of environmental or contextual stressors, dysregulation can certainly occur. For example, should a well self-regulated child experience parental divorce, bullying or trauma of some time, it may overwhelm the child's capacity to self-regulate and result in dysregulation evidenced through a change in affective-social responses. It is important however to note that children who exhibit self-regulatory skills prior to dysregulation show a quicker recovery; over time, they soon regain their self-regulatory capacity, and may even evidence a greater ability to sustain ecological triggers in the future. In this way, self-regulation can be seen as a strong determinant of adolescent resilience (Lengua 2002; Eisenberg et al. 2003; King et al. 2013).

Self-regulation: a protective factor yielding emotional, social and academic resilience in adolescence

Self-regulation exhibited at an early age is widely regarded to be a protective factor increasing the likelihood of future healthy functioning, seen as '*key to successful adaptation in childhood and adolescence*' (King et al. 2013). It is recognised as a bedrock of healthy psychological, emotional and social functioning and a critical developmental goal of childhood and adolescence,

providing a buffer to the inevitable strain as middle adolescents enter latter adolescence and into adulthood (Caspi et al. 1995; Kalavana et al. 2010; Mischel et al. 1988).

Longitudinal studies show a strong correlation between those pupils who are able to self-regulate at an early age and a subsequent high level of emotional, social and academic competence (Tangney et al. 2004; Trentacosta, C.J., & Shaw, D.S. 2009; Colman et al. 2006; King et al. 2013). Children and adolescents show greater ability to manage strong emotions; they are more able to moderate their reactions to positive and negative stimuli. They are more able to respond to pressure and stress, and are less likely to exhibit volatility or impulsivity. Socially, they demonstrate a greater level of social competency and behave in a more prosocial manner; they deal with conflict and problems more effectively, are more likely to adjust their response to the particular social situation and audience, and are more likely to make more considered social decisions around risk taking. As a consequence, they experience greater peer social acceptance, are more popular amongst peers and are more likely to be given leadership opportunities. They exhibit increased self-management, showing comparatively greater skills in healthy regulation of eating habits, alcohol consumption and use of money. As learners, children and adolescents who can self-regulate are more likely to be able to show facets of executive control; they are more able to self-reflect, plan ahead, exhibit self-efficacy and metacognition (Wentzel et al. 1990; Simonds et al. 2007; Zimmerman 1990; Schunk, Zimmerman 1994; Duckworth et al. 2007).

It is important to note that sustained, effortful self-regulation can in some situations be a risk in itself. To effortfully self-regulate to a high level over a period of time is costly, and may lead to a depletion of a limited self-regulatory capacity which may result in a temporary dysregulation (Bauer, Isabelle, M., Baumeister, Roy, F. 2011; Muraven, Baumeister, Roy, F. 2000; Vohs, Heatherton 2000). This may be more likely for children and adolescents who play an anchoring or caring role within a family; those who are overly emotionally alert and responsive to what is going on around them; children who exhibit a high degree of self-monitoring, or those who through adverse encounters with others have become hyper vigilant in order to minimise risk.

Poor self-regulation: an indicator of incipient risk

Poor self-regulation may take two forms: firstly dysregulation, and secondly habitual bias. Dysregulation occurs when a pupil's affective-social responses are reactive, unpredictable and inconsistent; their self-regulation is adversely affected by a particular environment or interaction. For example, they may exhibit self-regulation in one context but not in another. A habitual bias occurs when a pupil appears to be attentionally blind to the cues around them; they iterate the same affective-social response irrespective of the task, interaction or situation. There is considerable research to suggest that children and adolescents with poor self-regulation are vulnerable to a number of incipient risks; the term incipient risks refers to risks which may not yet be observed or indeed manifest, yet are more likely to develop in these children than their more self-regulated peers (Eisenberg et al. 2003; Eisenberg et al. 2010; Hofer et al. 2010; Halberstadt et al. 2001). Such risks are often categorised as internalised and externalised difficulties.

Internalised difficulties associated with poor or limited self-regulation include rumination and over control (Roelofs et al. 2009), social withdrawal (Eisenberg et al. 2010), depression and anxiety disorders (Buckner et al. 2009), eating disorders and self-harm. Externalising difficulties may include impulsivity, poor social competency and anti-social behaviours, social exclusion, substance and alcohol abuse, emotional volatility, lack of inhibition, risky sexual behaviours, lower empathy and school disengagement (Kelley et al. 2004; Leon-Carrion et al. 2004; Lin, Tsai 2002; Muris et al. 2001; Blakemore 2008; Chein et al. 2011; Neuenschwander et al. 2012; Tangney et al. 2004; Kalavana et al. 2010).

If self-regulation is a skill which underpins emotional wellbeing, social competence and academic performance, there is certainly a mandate to assess it, develop it in pupils and track pupil progress. If self-regulation is a skill which is emergent and ecologically sensitive, it is important to ask what impact a school culture or set of contextual factors is having on a pupil's self-regulatory capacity. If self-regulation is a skill which offers a protective factor during childhood, adolescence and early adulthood, it is imperative to identify those children who face the incipient risks of poor self-regulation, dysregulation or over regulation so that support can be proactive, targeted and intentional.

Self-regulation: an educational priority

Adolescence: a sensitive developmental window

The pressures and strains upon adolescents increase very significantly as they enter adolescence. They experience more transitions in their interpersonal and social contexts, a higher intensity of affect related to the onset of puberty, continued

individuation from their primary caregivers and subsequent attachment to significant others, an increased range of choices and risks as they have fewer supervised contexts, increased pressure and strain on their academic performance (Smetana et al. 2006; Casey, Caudle 2013; Yurgelun-Todd 2007; Sroufe 1997a; Steinberg 2007; Sebastian et al. 2008) Self-regulation has been found to strengthen their ability to navigate through the inevitable transitions, stresses and challenges of preadolescence, adolescence (Dich et al. 2014) and young adulthood (Blonigen et al. 2010). To purposefully assess, support and track self-regulation through the onset and journey of adolescence is surely critical if incipient risks can be identified and alleviated.

Self-regulation: a critical goal of childhood and adolescence contributing towards a healthy society in the twenty first century

For many years it has been a widely held belief amongst parents and teachers that boosting self-esteem would lead to improved emotional wellbeing, prosocial behaviours and academic performance; an evidentially flawed perspective now critiqued by Baumeister and others (Baumeister et al. 2003; Twenge, Campbell 2010, c2009). There is now an increasing school of thought which points to self-regulation as the critical skill we need to be developing in the next generation to secure a healthy, pro social, aspirational society. Indeed Bauer and Baumeister reflect upon the moral, social and economic compunction to develop self-regulatory skills in our young people, *'failures of self-regulation are at the root of many personal and societal ills, ... the consequences of failed self-regulation can therefore create enormous social and economic costs, thus placing a heavy burden on society. In contrast effective self-regulation allows individuals and cultures to thrive by promoting moral, disciplined and virtuous behaviours.'* (Bauer, Isabelle, M., Baumeister, Roy, F. 2011).

Whilst the ability of a child or adolescent to self-regulate has always been important, perhaps for those growing up in the twenty first century, it is now even more critical than it has been before. Young people are growing up in a faster moving and changing world than their parents grew up in; they have an endless range of choices and opportunities to navigate and discern; they face greater global economic uncertainty and subsequent competition for professional success, which in turn has led to an increasing level of academic testing and associated pressure and stress; they experience fewer of the social constraints which gave their parents stabilising and familiar boundaries and routines, and whilst the world of social media and internet has brought many benefits, it has also brought with it a range of risks not experienced by generations before.

In order to make wise and informed choices in a world where choice and subsequent pressure is greater than ever, and the social constraints which once gave external regulation fewer than before, children and adolescents will need a higher level of self-regulation than previous generations (Vohs et al. 2008). They will need to be able to anticipate and read the cues around them, know how to respond and implement their response. Given the increasing concern about the decline in the mental and social health of our young people, despite improved comparable physical and economic wellbeing and exam results (Halliwell et al. 2007; Thapar et al. 2012; West, Sweeting 2003, Hagell 2012, 2012; Green et al. 2005, 2005; Young Minds; Camilla Cavendish 2015; GCSEs: Pressure of exams leaves teens suffering from mental illness 2011; Luthar, Becker 2002), it would suggest children and adolescents may need more support than they currently receive to learn how to navigate their development.

Self-regulation: a skill which is malleable and open to environmental priming

Whilst some facets of pupil development are less open to environment priming, such as processing speed, working memory, or autistic difficulties, self-regulation can be significantly affected by the environment. For children who come to school having experienced a number of adverse factors which have hindered their self-regulatory capacity, such as insufficient external regulation and modelling, coercive parenting cycles, familial stress factors, school is an opportunity to redress this. If school professionals are able to identify these children at an early stage, before incipient risks are actualised as entrenched, internalised or externalised difficulties, targeted support can be proactively put in place. Over time, through scaffolding, modelling and signposting strategies, it is likely that a pupil will begin to evidence an increase in self-regulatory skill, lessening the incipient risks they once faced, and strengthening their emotional, social and academic resilience.

Although it is true that the priming influences of a school environment can positively influence self-regulation, there may be times when a school environment can adversely affect self-regulation. Some pupils may, due to an environmental or ecological factor, struggle to self-regulate in a school setting, whilst being able to do so out of school. This would indicate an issue, within the school locus of control which would need to be identified and addressed; such issues might include bullying, social isolation, and academic frustration. Over time, if a school did not identify and address these issues, a pupil may begin to adopt a dysregulated (unpredictable, reactive) response, or an extreme bias (habitual, proactive) response in order to cope with the situation. Whilst, evidence shows that pupils who suffer a temporary or contextual lapse of self-regulation rebound quickly

(King et al. 2013); if this is sustained, a pupil may fall prey to internalised or externalised difficulties which may be difficult to alleviate, such as anorexia or self-harm (Blair 2010; Bandura et al. 2003; Masten 2004; Martínez-Íñigo et al. 2013; Skinner, Zimmer-Gembeck 2009). By comparing pupils' instinctive (in a neutral context) and school based self-regulatory capacity it would be possible to see how a pupil's affective-social self-regulation is influenced by the school culture, to both positive and negative affect.

There may be significant advantages to identifying cultural trends amongst cohorts of pupils so that very discrete difficulties in self-regulation can be addressed, for example noticing gender, ethnic or age related trends which may hinder rounded development. Some of these trends may be ecological, in that they are evident in a particular context; socially influenced behaviours might include the mimicry of self-harm (Jarvi et al. 2013), or the increase of risk taking behaviours when adolescents are in the company of their peers (Morrongiello, Lasenby-Lessard 2007).

A tool to assess self-regulation: accessible, comparative and time phased

As King and Moilanen note, there are significant difficulties in assessing self-regulation (King et al. 2013; Moilanen 2007). There are numerous factors which diminish the quality of data: pupil self-reports are influenced by variables such as pupil self-disclosure, self-monitoring, processing skills, reading skills, emotional literacy, self-awareness, and attention span; teacher and parental reports are influenced by variables such as impression management, bidirectional coercive cycles, societal factors, and individual affective state at the time of completion. Self-regulation assessments are often long, including many items (e.g. Youth Self Report); they are often emotionally loaded which may trigger adverse responses in some children, and can be very time consuming to administer. For self-regulation to be accurately assessed, the assessment process should be accessible to all and devoid of emotive or value laden words; it should place the pupils' voice central to the assessment and lessen the possibility of subjective interpretation from others, and must be easily administered to fit in the busy, finite constraints of a school day.

Furthermore, if self-regulation is an ecologically sensitive skill, it is important to have a mechanism by which ecological variation can be identified and explored. By assessing comparable instinctive and contextual data, schools can see a more rounded picture of a pupil's self-regulatory skill, in contrast to partial picture based upon what may or may not be disclosed and externalised within the school setting. Through looking at school wide data, school leaders can extrapolate trends in order to assess and modify the priming influence of their own school cultures. By analysing shared incipient risk, schools can be targeted, precise, intentional and proactive in their support by explicitly teaching specific aspects of self-regulation and signposting how and when to draw upon a different behavioural response in a particular context.

It has been stated that self-regulation is emergent; it can develop or deplete in response to contextual stimuli. If so, assessments of self-regulation should not be one off fix points, but points on a trajectory, tracking the narrative of self-regulation over time. By building up a narrative, pupils who are continuing to exhibit poor self-regulation, either through dysregulation (unpredictable, reactive) responses or through extreme biased responses (habitual, proactive) would be quickly identified and support put in place before incipient risks are manifest as internalised or externalised difficulties. In addition, pupils whose data shows a change in self-regulatory function provides schools with an early indicator of an internal or external trigger which has deregulated the pupil to some degree. Once again, by intervening early and with precision, a pupil is more likely to receive the support needed to return to their previously well regulated state, lessening the risk of developing internalised or externalised difficulties at a time of vulnerability. An assessment tool which can track self-regulation over time is also able to evidence pupil progress, validating the impact of supportive intervention, providing schools with valuable assessment data to sit alongside other assessment markers which chart the development of a pupil over a school career.

If as Bauer and Baumeister believe '*self-regulation is a key ingredient that can facilitate individual and cultural success*' (Bauer, Isabelle, M., Baumeister, Roy, F. 2011); a skill deemed to be as important for school success as intelligence (Blair, Diamond 2008), and a protective factor to support the healthy navigation of teenage years (Yurgelun-Todd 2007; Crockett et al. 2006), surely the assessment, development and tracking of self-regulation should be a goal of all schools seeking to develop rounded individuals who can live healthy, successful lives and make a positive social contribution.

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