Welcome to the Early Learning Webcast

"Self-Regulation...What is it and why is it important for learning?"

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Section 1: The Importance of Self-Regulation

Run time: 9:51

Overview of Presentation

- The long-reach of self-regulation
- Self-regulation and self-control
- Self-regulation and learning, behaviour and health

Duckworth & Seligman

- In 2005, Angela Duckworth and Martin Seligman reported that self-discipline is a stronger predictor of school performance than IQ: not just in terms of grades, but school attendance, hours spent on homework, amount of time spent watching TV.

- The average age of the children in Duckworth and Seligman's study was 13.4 years.
- *How did these eighth-graders develop their self-discipline?*

The Significance of Temperament

- Toddlers'emotional intensity predicts effortful control at 22-45 months (Kochanska & Knaack, 2003)
- The more easily an infant is frustrated the less well he performs on attentional tasks (Calkins & Johnson, 1998)
- The less anger 22 and 33 month-olds demonstrate in a frustrating task the better their inhibitory control (Kochanska et al., 2000)

Delay of Gratification

- Mischel's famous'marshmallow test: child is told he can have one marshmallow now or several if he waits until experimenter comes back.
- Around 30% of 4 year-olds can wait.
- The children who could wait scored an average of 210 points better on their college entrance exams.
- Not just academic achievement at stake: also predicts anti-social behavior and susceptibility to drugs (Mischel, Shoda & Rodriguez 1989)

Trajectories are Set Early

- Mischel's test is telling us that already by the age of 4 children are beginning to differentiate in terms of their self-control.
- Poor self-control, as early as the age of 4, can have a significant cascading effect.
- The big question is: Why are some children having so much more trouble controlling their impulses?
- And more to the point: What can we do about it?

Reflection Questions

Think about the kids in your school…

1. Describe the really exuberant kids in our classrooms.

    - What are their characteristics?
    - What is the impact on the rest of the class?

2. What behaviours really push your buttons? How do you respond?

3. What about kids that you worry might be flying below the radar?

Section 2: Developing the ability to self-regulate

Run time: 16:45

Question from webcast participants

1. “Where is the balance between routines, creating safety, adult regulated and a child’s self-regulation?”

The Development of Self-Control

- Self-control rests on a set of attentional, behavioral and emotion-regulating skills.
- Some children find it much more difficult than others to acquire these skills.
- The key is thought to lie in their ability to self-regulate.

What is Self-Regulation?

- Self-regulation is defined as “regulation of the self by the self”(Baumeister & Vohs 2006)
- This definition lands us on a slippery slope, with the questions:
  - -“How does the self do this?
  - -“What regulates the self, so that it can regulate the self?”
- Self-regulation is used as an umbrella term covering five distinct levels.
- The challenge is to understand what links these levels together.

Five Levels of Self-Regulation

1. Biology (Temperament)
2. Emotion-regulation
3. Cognitive: Effortful Control
   - Sustained attention
   - Attention switching
   - Inhibit impulses
   - Deal with frustration, delay, distractions
4. Social: Mastery of socially-desirable behaviors
5. Moral: development of empathy, values

Arousal Regulation (Level 1)

- *Arousal regulation* is a function of Sympathetic Nervous System *activation* (e.g., adrenalin) and Parasympthetic Nervous System *inhibition* (e.g., cortisol)

- In effect, putting your foot on the gas or the brakes in order to deal with a stressor.

- Arousal regulation underlies all levels of self-regulation.

Continuum of Arousal Regulation

- There is a continuum of arousal, ranging from sleep to being flooded.

- How much recovery is necessary, or how much activation is needed for any particular task, is going to vary from child to child and situation to situation.

Stages of Arousal

Inhibition

↑

1. Asleep
2. Drowsy
3. Hypoalert
4. Calmly focused and Alert
5. Hyperalert
6. Flooded

↓

Activation

Reflection Questions

Go back to the kids that are really exuberant in your classrooms:

1. Describe their typical stages of arousal.

2. Describe your stages of arousal – is it different when that child or children are absent?

3. What strategies do you use? Are they effective?

Reflection Questions cont'd

Kids Flying Beneath the Radar

Now think about the kids in your classroom that don't pay attention, or that spend a lot of time staring vacantly into space:

1. Describe their typical stages of arousal.

2. Describe your stages of arousal – is it different when that child or children are absent?

3. What strategies do you use for these kids? Are they effective?

Section 3: Optimal regulation and stress

Run time: 17:16

Questions from webcast participants

1. “Classroom management in a very active classroom is a challenge. How does one adult facilitate negotiation skills and self-regulation behaviours for many children simultaneously?”

2. “Can children truly learn while being active?”

3. “How is self-regulation effected if a child is not eating a balanced diet and not getting enough sleep? Which stage of arousal might these children be?”

Driving Analogy

- Helpful for understanding the subtle adjustments in arousal involved in regulating attention.
- If goal is to maintain a speed of 100 km/hr constantly pressing and easing up on the gas depending on the state of the road, incline, wind speed etc.
- Furthermore, driving involves constant changes in speed limits or traffic conditions, so learning how to drive involves learning how to smoothly adjust the amount of gas or braking required for the current conditions.

Optimal Regulation

- Children vary considerably in their capacity for optimal regulation:

  i.e., their capacity to make gradual and rapid changes across the arousal continuum, recover back to baseline, and modulate the highs and lows of energy within a given state.

- Some children are constantly pushing too hard on the gas or the brake pedal, jumping erratically from one level to another or not hard enough (Lillas & Turnbull 2009).

Allostatic Load Conditions

If a child is subjected to too much stress, the result can be an allostatic load condition:

- sudden transitions between energy states
- prolonged over-activation of SNS and/or PNS
- inappropriate activation of SNS or PNS (i.e., in situations not warranting a heightened stress response)
- diminished ability to return to baseline after activation of the stress response

Consequence of Over-Exposure to Stress

- Disrupts development of the brain (HPA pathway)
- Child becomes chronically hypoaroused or hyperaroused
- Child has difficulty staying focused and alert, which is the ideal state for learning to occur
- Child has trouble learning the skills necessary for self-control, or having the resources to exercise those skills

Section 4: Why play is important for self-regulation

Run time: 25:01

A Change in Attitudes is Imperative

- There is a tendency, dating back to the Ancient Greeks, to see children as somehow to blame for their poor self-control.
- We need a different understanding of why it is so difficult for some children to inhibit their impulses.
- We need to understand why some children have so much more trouble learning the skills that support self-control, and what we can do to help them master these skills.

Why it is so Difficult for Some Children to Develop Self-Control

- Whatever a child is doing demands fuel, and the size of that cost will vary according to the activity, the situation, and most importantly, the child.
- Two children might have to expend very different amounts of energy – be at very different points on the arousal continuum – in order to engage in the same activity.
- This can be due to biological, social, and/or environmental causes.

Sitting in Class

Suppose we are dealing with a child who finds sitting in a classroom very demanding, for different reasons:

a) maybe he finds the visual and auditory stimuli distracting and he has to work hard to filter this out in order to pay attention to his teacher; or

b) he finds the hard seat uncomfortable and it is taxing for him to sit still for too long.

Cascading Effects

- Suppose this child expends 40 l/100 km in order to master some new material while the child sitting next to him only expends 20 l/100 km.
- It is no surprise, given the tight interconnection between arousal and focus that the attention span of the first child will be much less than that of the second.
- But if the pace of the lessons is patterned on the attention span of the latter child, then the former is going to fall further and further behind.

Energy Depletion Studies

- Baumeister has shown in a number of experiments that attention to a task significantly depletes energy reserves.
- The greater the energy consumed by a task the greater the likelihood that child will shut down to try to restore energy or churn out adrenaline to try to meet the demands of the situation), both states marked by decreased attentional capacity.
- Negative emotions (frustration, shame, anxiety) are also a great drain.

Sources of the Problem

- The problem is that some children have to work much harder than others to perform the same tasks, and it is this expenditure that so seriously depletes their capacity to meet subsequent challenges.
- A child who daydreams excessively or is inordinately hyperactive is certainly not culpable in any way, and it would be deeply unfortunate to treat the child as if he were, however unconscious this might be.
- We need to understand and thereby mitigate the drains on their nervous system.

The Effects of Excessive Stress

- What studies show is that some children are dealing with far too much stress in their lives, because of biological, social, psychological, and/or environmental reasons.

- These children have to work much harder to pay attention, and an allostatic load condition is going to get ever more entrenched as the negative effects caused by falling further and further behind or having greater and greater social problems exacerbate the drain on their already over-stretched nervous system.

Understanding a Child

- Self-regulation is critical for enabling a child to engage in those social experiences that enable her to learn the cognitive and emotion-regulating skills that underpin self-control.

- A child who has difficulty engaging in these critical social experiences because of the drain on his nervous system can indeed be helped; but only if his or her needs are first understood.

Why Play is Important to Self-Regulation

- Children who thrive in primary school are those who have strong self-regulation skills:
  - ➢ calmly focused & alert, remember on purpose, communicate effectively, make friends, are persistent and creative in completing tasks & solving problems
- They have developed their abilities to imagine, use mental representations, act in a deliberate planned manner and integrate emotions and thinking.
- Socio-dramatic or pretend play complemented by constructive play strengthens these qualities

The Power of Play

- Emerges from what really interests children – therefore engages focus
- Demands perspective-taking – figuring out what others think
- Encourages communication about what one wants & what others want
- Fosters connections between objects, people & ideas
- Presents challenges that children can take on
- Requires self-direction to maintain
- Identifies questions that can initiate extensive inquiry projects

Reflection Questions

Is play central or an afterthought in your classroom?

- Do you pay attention to children's play or do you use it to manage children while you focus on learning activities?
- Can you identify the negotiation, perspective-taking, communication and connecting skills that each child uses in child-directed play in your classrooms?
- How does your classroom environment encourage extended or elaborated play?

Section 5: Strategies for educators & summary of webcast

Run time: 11:14

Questions from webcast participants

1. “Adele Diamond at the University of British Columbia has done much research on how play develops executive function in children’s brain. Can you elaborate on this work?”

2. “I’ve recently been very deeply engaged in two university courses on Vygotsky. I hear some of his ideas in your comments on play. Is it a coincidence or perhaps does he influence your thinking?”

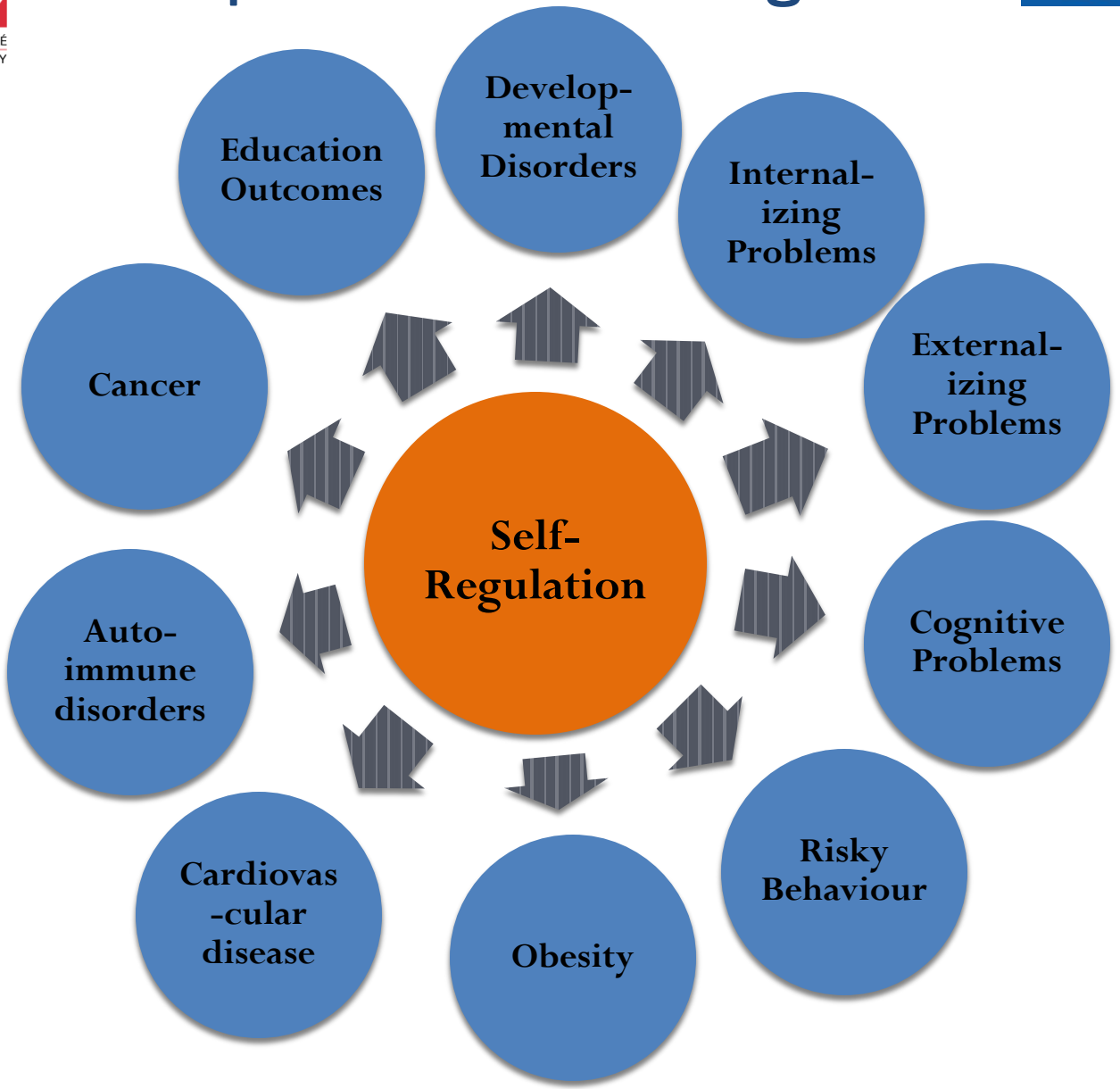
Practical Classroom Strategies for Educators

- Observe stimuli that calm and that agitate
- Schedule for pretend play opportunities
- Play “games with rules”
- Use children’s questions and passions to launch inquiry-based projects
- Make, follow and discuss plans

The Importance of Self-Regulation

- Over the past decade there's been an explosion of research on self-regulation in regards to a broad range of mental and physical problems.
- Each is thought to have unique biological antecedents and/or environmental contingencies, and to follow a different developmental pathway.
- Even within each disorder there is thought to be enormous variability in the pathways.
- But each is thought to involve a problem in self-regulation, starting early in the child's life.

The Importance of Self-Regulation



Readings

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Section 6:
Q & A session with webcast participants

Run time: 12:54

Questions from webcast participants

1. “We see a lot of children who are highly active, but seem to need to move around to learn and are constantly wiggling around, they never seem to be in stage 4 of arousal. Can children truly learn optimally when they are so active?”

2. “Why is self-regulation in children more prevalent now? Has this issue been around for years or are we just noticing it now?”

3. “What are some specific strategies educators can use to help hyper and hypo-alert children in the classroom?”