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21st-century directions and themes of talent support in early childhood

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Relevance

- Underserved age group
- Limited research
- Lack of systems thinking

- Personal motives: need for relevant, practical recommendations

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- 6 topics
- Complexity, multifaceted approach
- Systems thinking
- 21st century issues
- Empirical basis
- Isolated initiatives
- Subjective selection of topics ☺

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6 topics

Scientific & Algorithmic thinking

Social-Emotional Learning

Executive Functions

Parents' involvement

20

20 principles

Wellbeing of educators

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1. Scientific & Algorithmic Thinking (STEM, programming)

Scientific thinking:

a type of knowledge seeking involving intentional information seeking, including asking questions, testing hypotheses, making observations, recognizing patterns, and making inferences (Kuhn, 2002; Morris et al., 2012).

4 phases: inquiry, analysis, inference, and argument.

Elements:

- thinking about scientific content and concepts (e.g. concept of magnetism, energy, electricity...)
- thinking processes in various scientific fields that help to understand and process the laws of experienced phenomena (e.g. inductive, deductive thinking, creating hypotheses, creating concepts, reasoning, testing)

Task:

- Research
- Available literature
- A collection of simple scientific phenomena and experiments that kindergarten teachers can present to children
- Higher education curriculum

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Algorithmic thinking

- ‚algorithm' is a set of finite procedures used to solve a certain problem.
- Algorithmic thinking is a method of arriving at a solution by clearly defining the procedures required. These procedures are rules or instructions that, when exactly followed, produce similar solutions every time.
- The goal of algorithmic thinking is to create a repeatable method, or algorithm—a formula for calculating results, processing data, or automating tasks—rather than to find a specific solution.
- Basis for coding, programming and robotics
- cooking, kids' everyday routine, traffic signals, sorting
- Bee-Bot/Blue-Bot/Pro-Bot robots

Task: collecting and sharing good practices, financial support

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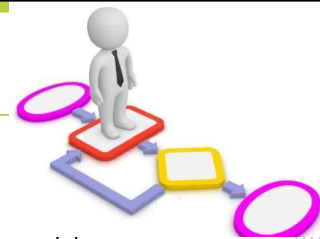
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2. Social-emotional needs and learning

- 'social-emotional learning' (SEL)
- SENG (Supporting Emotional Needs of the Gifted), https://www.sengifted.org/
- Social-emotional skills – peer relations, wellbeing, mental health, achievement

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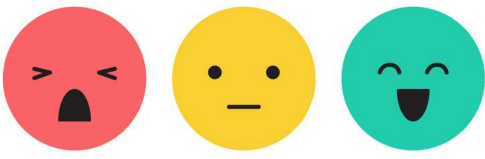
- managing stress and conflict situations, self-acceptance, self-regulation, self-awareness, how to form and sustain positive relationships, expressing emotions

Tasks:
- Theoretical, empirical background
- Assessment tools, methods
- Collecting and translating programs
- Teacher trainings

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3. Executive functions (EF), cognitive control

A set of cognitive processes that are necessary for the cognitive control of behavior: selecting and successfully monitoring behaviors that facilitate the attainment of chosen goals.

Executive functions include basic cognitive processes such as:

- attentional control
- cognitive inhibition
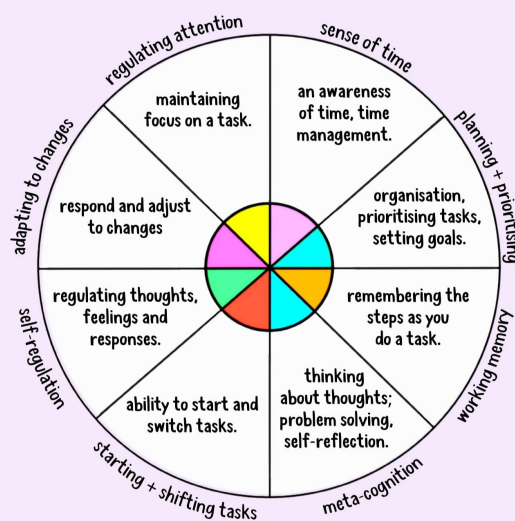- inhibitory control
- working memory
- cognitive flexibility

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The spectrum of Executive Function

regulating attention
- maintaining focus on a task.

sense of time
- an awareness of time, time management.

planning + prioritising
- organisation, prioritising tasks, setting goals.

working memory
- remembering the steps as you do a task.

meta-cognition
- thinking about thoughts; problem solving, self-reflection.

starting + shifting tasks
- ability to start and switch tasks.

self-regulation
- regulating thoughts, feelings and responses.

adapting to changes
- respond and adjust to changes

Plan ahead, meet goals, display self-control, follow multiple-step directions even when interrupted, stay focused despite distractions….

GAMES:
Songs with Movements and Repetition
Board Games and Card Games
Simon says
Minecraft

https://challengingbehavior.org/docs/Executive-Function_Practice-Guide.pdf

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Interventions shown to Aid Executive Function Development in Children 4–12 Years Old *

Adele Diamond[1] and Kathleen Lee[1]
[1]University of British Columbia and Children's Hospital, Vancouver, BC Canada

Abstract

To be successful takes creativity, flexibility, self-control, and discipline. Central to all those are 'executive functions,' including mentally playing with ideas, giving a considered rather than an impulsive response, and staying focused. Diverse activities have been shown to improve children's executive functions – computerized training, non-computerized games, aerobics, martial arts, yoga, mindfulness, and school curricula. Central to all these is repeated practice and constantly challenging executive functions. Children with worse executive functions initially, benefit most; thus early executive-function training may avert widening achievement gaps later. To improve executive functions, focusing narrowly on them may not be as effective as also addressing emotional and social development (as do curricula that improve executive functions) and physical development (shown by positive effects of aerobics, martial arts, and yoga).

What will children need to be successful? What programs are successfully helping children develop those skills in the earliest school years? What do those programs have in common?

Four qualities will probably be key to success - creativity, flexibility, self-control, and discipline. Children will need to think creatively to devise solutions never considered before. They'll need working memory to mentally work with masses of data, seeing new connections among elements. They'll need flexibility to appreciate different perspectives and take advantage of serendipity. They'll need self-control to resist temptations, and avoid doing something they'd regret. Tomorrow's leaders will need to have the discipline to stay focused, seeing tasks through to completion.

All of those qualities are 'executive functions' (EFs), the cognitive control functions needed when you have to concentrate and think, when acting on your initial impulse would be ill-advised. EFs depend on a neural circuit in which prefrontal cortex is central. Core EFs are cognitive flexibility, inhibition (self-control, self-regulation), and working memory (1). More complex EFs include problem-solving, reasoning, and planning. EFs are more important for school readiness than is IQ (2). They continue to predict math and reading competence throughout all school years (e.g., 3). Clearly, to improve school readiness and academic success, targeting EFs is crucial. EFs remain critical for success throughout life (in career [4] and marriage [5]) and for mental and physical health (6, 7).

INVESTING EARLY IN EDUCATION

Diamond, A., Lee, K. (2011). Interventions shown to Aid Executive Function Development in Children 4–12 Years Old. *Science.* 2011 August 19; 333(6045): 959–964.

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Why is it important?

- **EF – academic achievement**
- Pascual et al. (2019) The Relationship Between Executive Functions and Academic Performance in Primary Education: Review and Meta-Analysis. *Frontiers in Psychology*, Volume 10. https://doi.org/10.3389/fpsyg.2019.01582
- 21 samples (n = 7,947), 6-12 years, a meta-analysis
- EFs are good predictors of academic performance.
- For the subjects of language and mathematics, the results of the random effects model were similar and slightly higher for mathematics.

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Tasks:
- Research, theoretical basics
- Awareness
- Developmental programs, interventions
- Teacher trainings

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4. Involvement of parents

- 3-10 year-olds: mandatory and unavoidable
- Practical knowledge, not only topics in ‚giftedness',
 but general parenting issues

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The Danish Way of Parenting: What the Happiest People in the World Know About Raising Confident, Capable Kids

- **Play** is essential for development and well-being.
- **Authenticity** fosters trust and an "inner compass."
- **Reframing** helps kids cope with setbacks and look on the bright side.
- **Empathy** allows us to act with kindness toward others.
- **No ultimatums** means no power struggles, lines in the sand, or resentment.
- **Togetherness** is a way to celebrate family time, on special occasions and every day. The Danes call this hygge--and it's a fun, cozy way to foster closeness. Preparing meals together, playing favorite games, and sharing other family traditions are all hygge.

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What the Happiest People in the World
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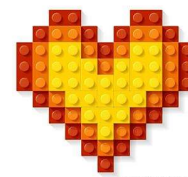
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Tasks
- Promoting relevant literaure
- Parents' groups, associations
- Training or discussion groups

dr. Vekerdy Tamás utószavával

Jessica Joelle Alexander • Iben Dissing Sandahl

Gyereknevelés dán módra

Hogyan neveljünk életrevaló és magabiztos gyereket?

hvg könyvek

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5. „20 principles"

Goal: to collect the basic psychological knowledge and principles that help make education effective.

Top 20 Principles From Psychology for PreK–12 Teaching and Learning

2015:
- https://www.apa.org/ed/schools/teaching-learning/top-twenty-principles.pdf
- https://www.apa.org/ed/schools/teaching-learning/top-twenty-principles-hungarian.pdf

2017:
- Top 20 principles from psychology for preK-12 creative, talented and gifted students' teaching
- https://www.apa.org/ed/schools/teaching-learning/top-principles-gifted.pdf

2019:
- Top 20 principles from psychology for early childhood teaching and learning
- https://www.apa.org/ed/schools/teaching-learning/top-twenty/early-childhood/full-report.pdf

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Principles

How Do Children Think and Learn?

What Motivates Children?

Why are Social Context, Interpersonal Relationships, and Emotional Well-Being Important to Children's Learning?

How Can the Classroom Best Be Managed?

How Can Educators Assess Children's Progress?

- Relevance for early childhood educators
- References for early childhood
- References from original top 20

AMERICAN PSYCHOLOGICAL ASSOCIATION

TOP 20 PRINCIPLES
FROM PSYCHOLOGY FOR EARLY CHILDHOOD TEACHING AND LEARNING

Coalition for Psychology in Schools and Education

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6. Wellbeing of educators, organizational interventions to increase work-related wellbeing

McKinsey report (2007):

Contents

Foreword
Preface
Introduction: Inside the black box

1. "The quality of an education system cannot exceed the quality of its teachers"
2. "The only way to improve outcomes is to improve instruction"
3. "High performance requires every child to succeed"

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Wellbeing of educators

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Early childhood educators' work-related well-being:

A dynamic state, involving the interaction of individual, relational, work–environmental, and sociocultural–political aspects and contexts.

Educators' well-being is the responsibility of the individual *and* the agents of these contexts, requiring ongoing direct and indirect supports.

SAGE journals

Article

Towards a holistic conceptualisation of early childhood educators' work-related well-being

Tamara Cumming [1] and Sandie Wong[2]

Abstract
Both the concept of well-being and the work of early childhood educators are complex. To date, research concerning educators' well-being has lacked a comprehensive conceptualisation that reflects these complexities. With increased research, policy and practice attention, a clearly articulated conceptualisation is now needed to guide empirical research and practical efforts to better support educators' well-being. In this article, the authors draw on multidisciplinary perspectives to propose such a conceptualisation. Philosophical, psychological, physiological, organisational science and sociological sources are explored and critiqued for their relevance to early childhood educators' well-being. Key aspects of these sources, and Bronfenbrenner's ecological systems theory, are brought together to argue for a morally anchored conceptualisation which acknowledges that educators' well-being is indivisible from the contexts in which it is experienced.

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SAGE journals

Article

Early childhood educators' well-being, work environments and 'quality': Possibilities for changing policy and practice

Tamara Cumming [1], Sandie Wong [2], and Helen Logan[3]

Abstract
A child's right to high quality education not only relies on a competent and skilled workforce, but one in which educators are well. Supporting a well workforce requires governments, organisations and educators to attend to work environment quality. This attention needs be based on sound, relevant evidence. In this paper we contribute evidence of educators' well-being from the survey component of an Australian study with 73 participants. We map results against international guidelines, and policy openings in Australia's *National Quality Standard* to understand how educators' work environments are affecting their well-being. We conclude that existing policies on quality in early childhood education in Australia attend to only some features of work environments, with a notable absence of attention to supporting educators in the relational complexities of their work. To enable educators to provide high quality education and care, greater attention is needed by organisations and governments to what quality work environments might look like.

Task:
- Theoretical, research background
- Assessment: methodology and practice
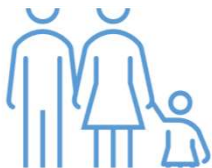- Organizational interventions

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Wellbeing of educators

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Thank you!

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