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Introduction to robotics

RoBy
Robotics vs
Bullying

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The IDEA...

To prevent bullying, robots and other technological devices can be used as a means through which **improve the relational and emotional dynamics involving the students in prosocial activities**.

... into PRACTICE

2017 "**Robotica contro il bullismo**": **a group of 10 teachers,** trained in the use of educational robotics
Development of the first **educational activities for bullying prevention.**

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Educational Robotics

- Use of robots to stimulate curiosity and logic
- Encourage students' creativity and problem solving skills
- The students get used to **work in group** to:
  - solve problems
  - find solutions
  - verify the results
- Increase **motivation** and **involvement**
- Favours the development of **metacognitive competences and superior functions** (memory, attention, planning, reasoning,ecc.)
- Support a **learner-centered** teaching

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Robots and prosocial values

The robot can be used by the teacher with groups of students to work on the class climate and the pupils' relationships.

- The robot is a **shared educational tool:** each child bring his/her individual contribution making the result bigger than the sum of all the single parts
- The competition turns into **collaboration** and **the succes is shared**
- The robots create a **non-judgmental environment,** in which error as part of the growth and learning path
- the group **learn to give strength and support to all the members**

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Robotics vs Bulling
through the eyes of the pedagogical psychologist

Robots in action - robotics for bulling prevention and education

Contents:

- What is **Robotics** and what is **robotics for prevention and education**
- **What to think better about INTELLIGENCES in school - IQ EQ SQ**
- What are the **important elements to observe and what to leave out of my attention?**
- **How to educate children in counteracting bullying and not accepting bullying behavior**

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Whatever we do the amount of goodness and happiness in the world need to increase!

Childhood is the time of carefree: **the time of games and toys!**

The time in which the SCHEMES ARE ENLARGED - **knowledge is consolidated, merged and differentiated**. At the end of this period, an INDEPENDENT plan of thoughts and ideas appears. The sensorimotor intellect appears, the ideas about the world are formed - J. Piaget

The child is egocentric! It still makes mistakes in establishing causation (Don't be angry game)

Syncretism appears - a generalized likeness! The child begins to use numerical concepts, but is still insensitive to contradictions in their own reasoning .. (5-7 years)

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Moral development according to L. Kohlberg

The child goes through 2 stages :

- **pre-moral and moral** reasoning

1. The child obeys rules to avoid punishment.
   - Good or bad actions are determined depending on the consequences Do not understand the intentions
2. **Orientation to personal rewards and instrumental hedonism**: - early stages
   - The child **bargains, striving for a fair exchange**!
   - Distinguishes his needs from the needs of others and correlates them.

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Stages of psychosocial development according to E. Erickson

Stages	Description
Trust vs distrust	**The child understands the situation as controlled and predictable** or chooses suspicion and fear. At **this stage, a trusting attitude towards the world or distrust is formed.**
Autonomy against doubt	Here **a feeling of autonomy, independence, autonomy is formed**, as opposed to the **feeling of doubt and shame.** At this stage**, the foundations of firmness of behavior are laid:** weak sociability or free expression and cooperation. **Excessive criticism of adults at this stage can create feelings of inferiority.**
An initiative against guilt	At this stage, **initiative is formed**, as opposed to **guilt and passivity**. It is at this age that **conscience** and **moral feelings arise**.
Hard work versus complex for inferiority	The child **enters into new social relationships**. The child **must choose between work and experience or feel inferior.** If it **fails to acquire and / or develop through work and school skills, personal abilities**, it develops low motivation for achievement and low self-esteem.

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The game ... is an adaptation to the conditions of the environment

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Perseverance, consistency!

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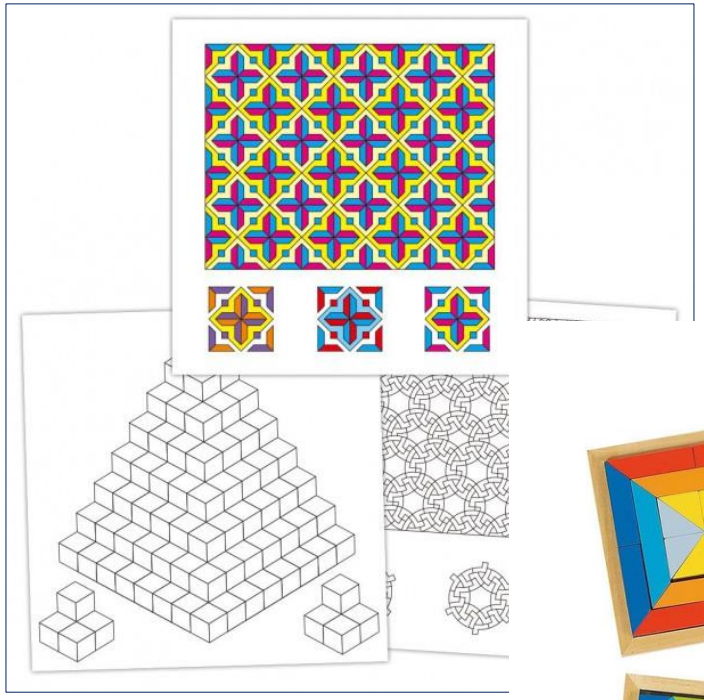
IQ - Cognition

The world of shapes, colors and volumes



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Robotic toys-early understanding of algorithms: activity, sequence, repeatability - result

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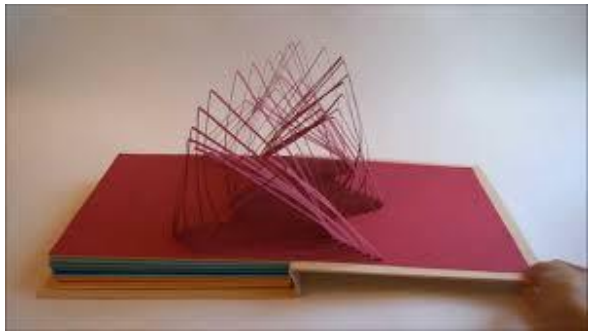
Emotion+Motion-EQ+SQ= Social emotional environment+imagination

Scenarios and pictures- virtual experience of knowledge about the world

8 to 10 years old children!

Wisdom

2+3



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Isn't it the same in the 21st century?

Unsurprisingly - the 20th century is algorithmic, fast-paced, graphical and predictable!

Well- adapted children!

Primary 1B T. Bobby					
TIME	*MONDAY*	*TUESDAY*	*WEDNESDAY*	*THURSDAY*	*FRIDAY*
08:30-09:00	Arrival	Arrival	Arrival	Arrival	Arrival
09:00-09:45	Group Reading	P.E.-Activity	Group Reading	Grammar	Math
09:45-10:30	P.E.-Tech		Math	Thai	
10:30-10:45	Break	Break	Break	Break	Break
10:45-11:50	Grammar	Grammar	ICT	Thai Culture	Writing
11:50-12:35	Lunch	Lunch	Lunch	Lunch	Lunch
12:35-13:15	History	Math	Science	Reading	Art
13:15-14:00	Science			Science	
14:00-14:15	Break	Break	Break	Break	Break
14.15-15.00	Writing	Geography	Geography	Drama	History
15.00-15:30	Reading	Thai	Homework	Music	Free Time
15:35-16:00	Pick Up	Pick Up	Pick Up	Pick Up	Pick Up

1 st GRADE

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Confusions in reflections: adaptation and decision: Who am I?

Fast changed unpredictable life situations!

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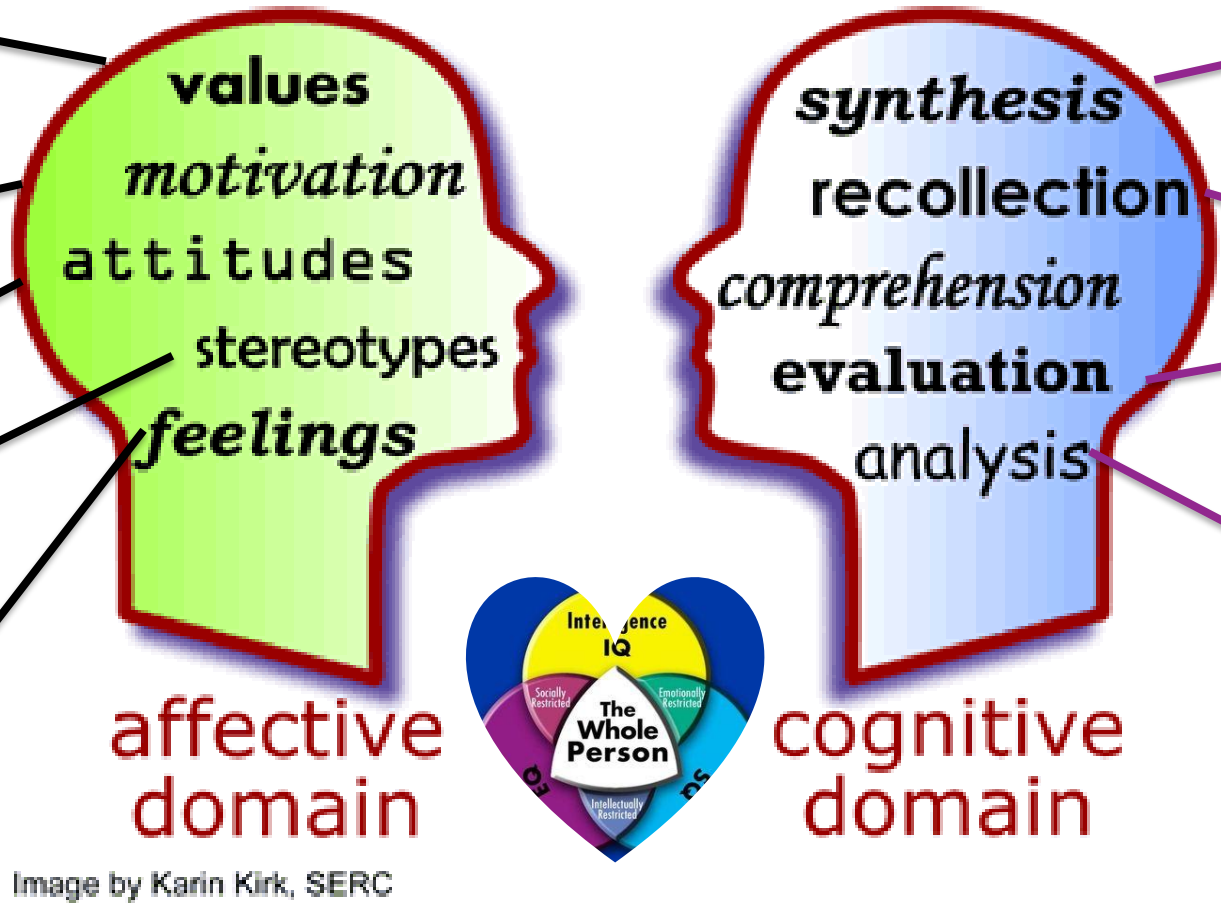
Education, gamification and maturity characteristics

A complex, debatable environment

Relationship management Social awareness

Emotion management

Social and Emotional awareness



natural, multiple, multidirectional, dynamic.

Game, experiences' based-created by all participants, allows multiple models.

Peer players – multiple knowledge;
Group decisions - multiple choices,
Personal performance.

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TABLE OF CONTENTS
support and development areas

1 — 2 — 3

Cognitive

There is no hierarchy between the subjects - TRANS subject's algorithmic searching for information - adequate to the situation

Emotional

How do I feel?
Who am I?
Am I good or bad?
Can I appreciate and respect the feelings of others?

Social

What is the situation? -
What decisions do I make?
How do my behavior affect others?
Do I make friends?

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We take approaches from robotics and use them to form group and personal concepts in learning game based situations.

- **Robotics is a branch of engineering**, mechanical engineering, electrical engineering and informatics, **which includes the design, construction, control and use of robots,** as well as computer **systems** needed **for their control, data acquisition** from sensors (sensors) and **information processing.**

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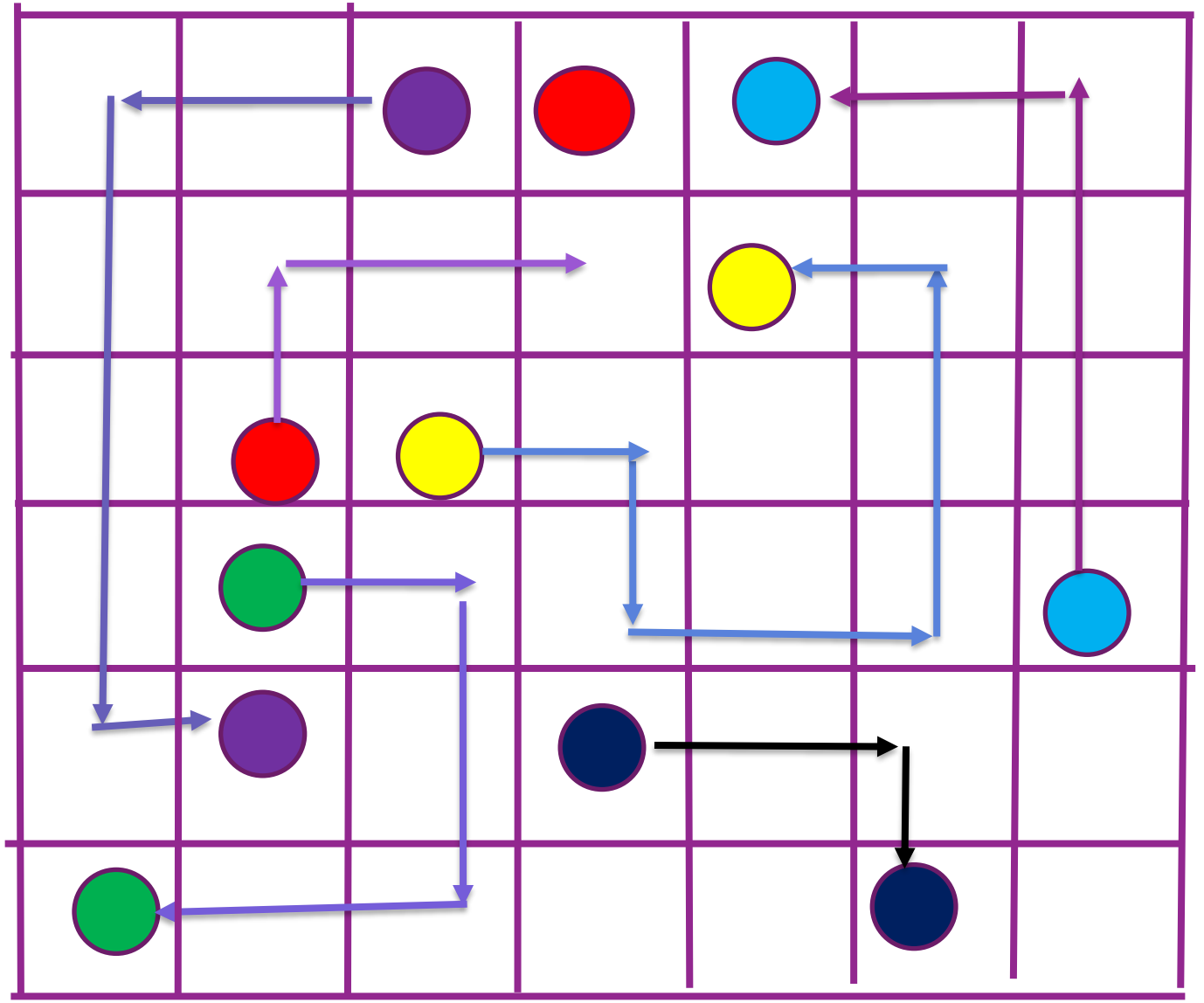
Optimum



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What is "Robotics for Education and Prevention of Bulling training"?

RoBy trained TEACHER involves **the design, construction, control and use** of robots, in game based learning **systems** needed to **control, obtain and process information.**

- Task 1
- Task 2

Designing individual and group goals

- Idea 1 (Plan)
- Idea 2 (optimum?)

Discussing the optimum path

Act and Achieve the goals

- STEP 1 (action)
- STEP 2

Check actions

- STEP 1 (discussion)
- STEP 2 (reflection)

- ✓ **Goal design**
- ✓ **Discussion of the mode of action**
- ✓ **Action check**
- ✓ **Achieving the goals**
- ✓ **Discussion - Success / failure**

RoBy training elements

Skills to be learned: discuss, suggest and reflect, act and take responsibility for your actions

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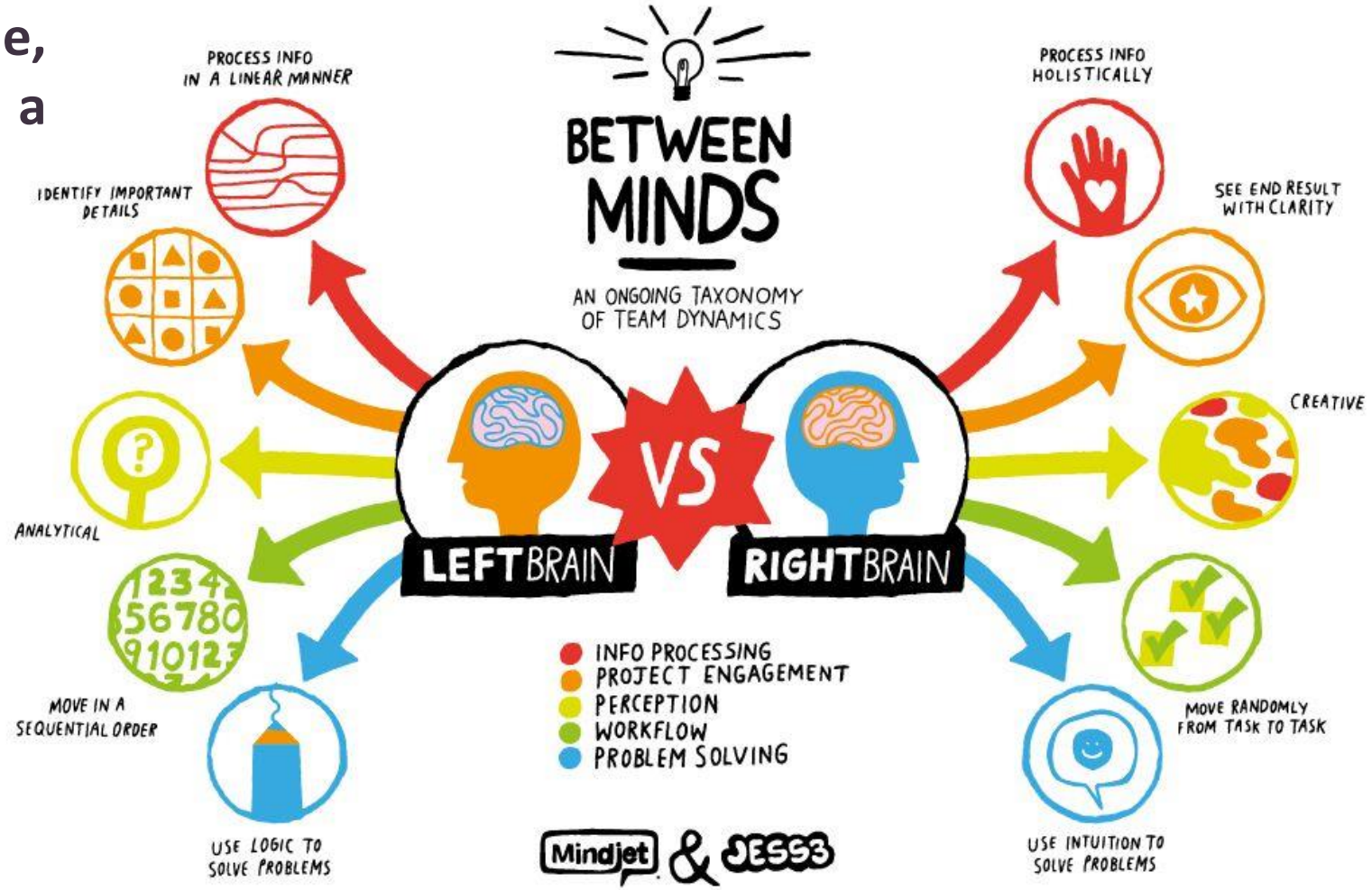
No opposition in the game, but together .... in a collaborative group!



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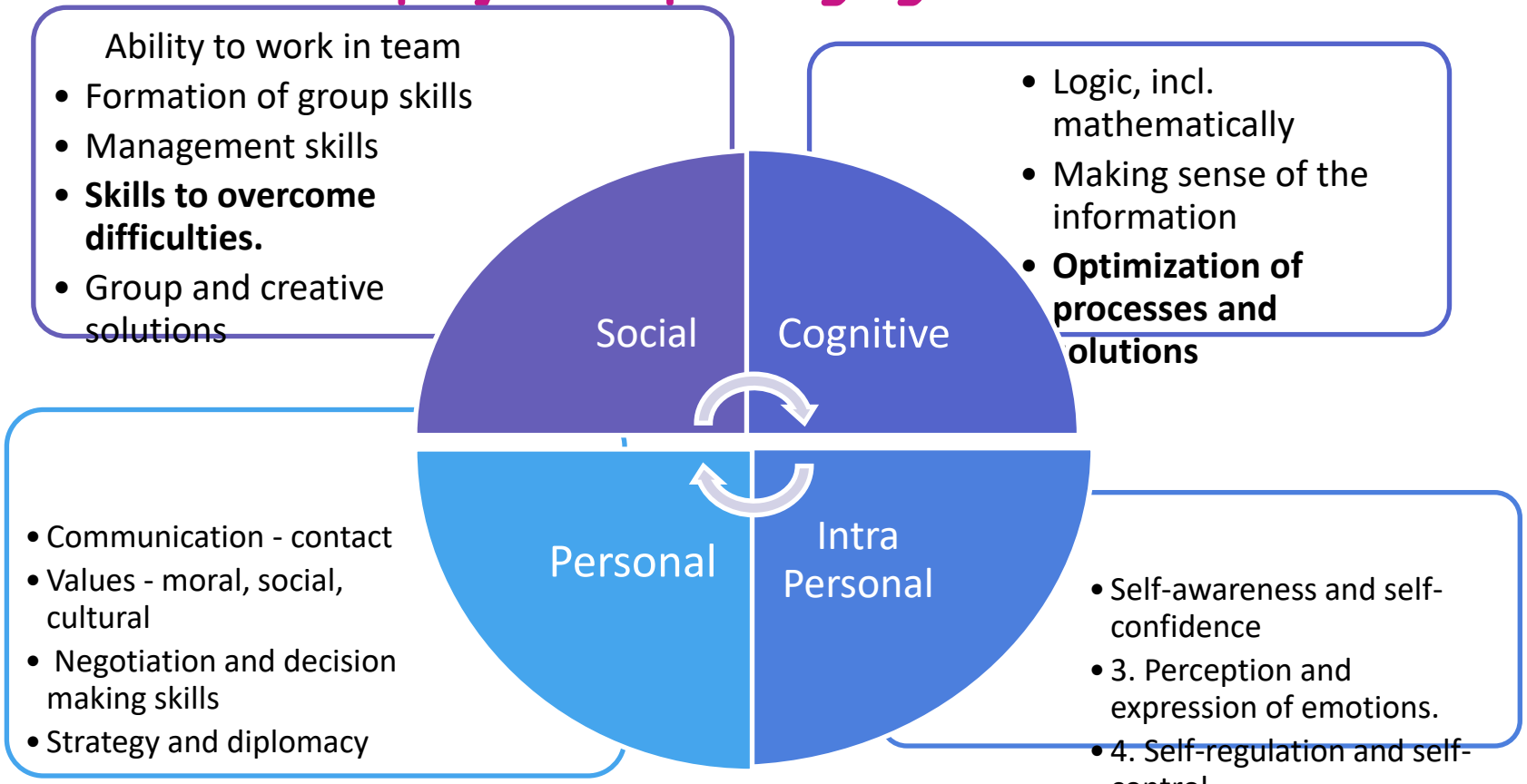
Theoretical and psycho-pedagogical references



What topics are suitable for study? What areas are observed?

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Robots in action

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What do we teach children?

Concepts Skills & Knowledge & attitudes What? Why? For what reason?	Methods inquiry, interactive, communicative How? When? How much?	Contents Subjects, topics **Generalization**
Cultural and historical	We develop informed and thoughtful behavior through algorithmic thinking and reflection	Topics: me and the World around me
Personality-oriented	Emotionality, self-control and control over the situation	Me and the people around me
Activity / active	Control and self-control skills	Me and my understanding of the cosmos of things

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Bullying - it is ***the consistent, purposeful, deliberate, hostile, repetitive behavior*** of one or more people who want to harm others. It has many dimensions - verbal, physical, social isolation or isolation and cyberbullying.

Cyber

Cyber Bullying

Social

Social Bullying

Verbal

Verbal Bullying

Physical

Physical Bullying

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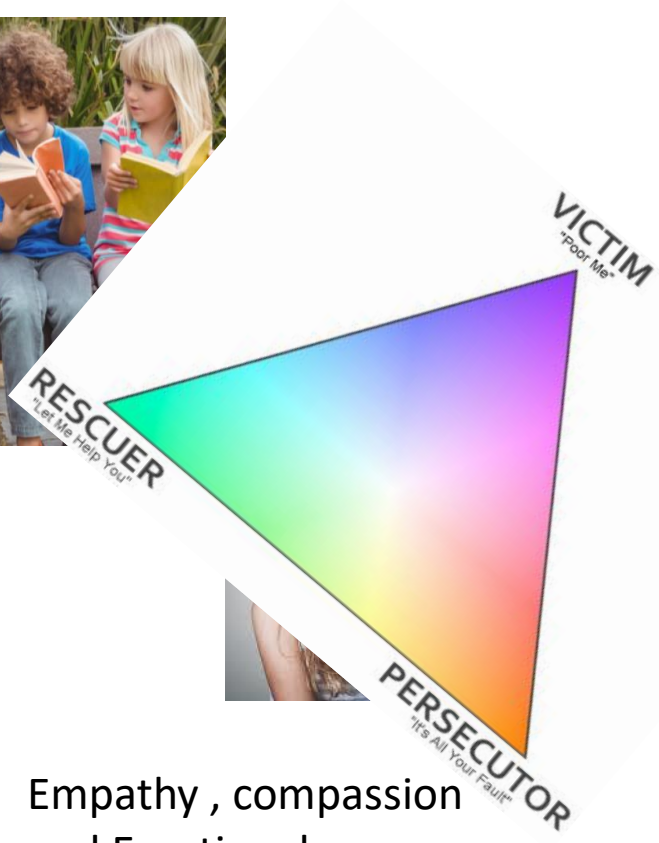
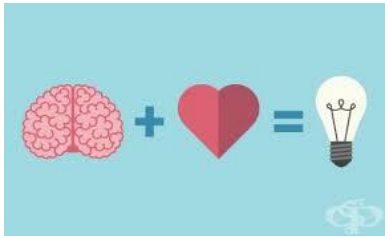
Social and Emotional Intelligence - group

Relationship management

Emotion management



Empathy , compassion and Emotional awareness



Social awareness

http://atlasofemotions.org/#introduction

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What is the difference in group behavior in Robotics and in practices RoBy ?

Contribution	Supremacy
They **share as much information as possible** with everyone they have!	They share a minimum of information, **only that which they cannot use for themselves.**
They use **their authority consciously and vigilantly.**	They **use their authority capriciously and recklessly**
They **are obsessed with the process and the results** (success)	They are **shortsightedly oriented towards results.** (Good luck)
They **create conditions** for motivation and development **of the whole team**	They **use fear, pressure and hierarchy** to motivate participation
They view **victories and defeats** with **equal enthusiasm and discipline**.	They **do not discuss success** and **investigate failures**
They talk endlessly about **debt and obligations**	They talk endlessly about **responsibilities**
They understand **policies (strategies)**	They **politicize (anti-strategy)**

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SOCIAL DEVELOPMENT:

Cooperation, communication, respect for differences, group rules and goals, ensuring the safety and success of each participant.

AGE	Who are we?	Where are we in time and space?	How do we express ourselves?	How does the world work?	How do we organize ourselves?	How do we share the planet?
5-8	The choices we make	Historical look	Images convey ideas	We use our energy to build and create		
6-11	Reason - cause / effect	Changes /development / connections	Creativity perspective	Form / function		
7-12	How do our choices reflect on us and others?	What changes affect us	Statics / movement			
13			How do images affect?			

3

https://fakti.bg/life/228394-um-ili-kasmet-e-nujen-za-uspeh-v-jivota-video

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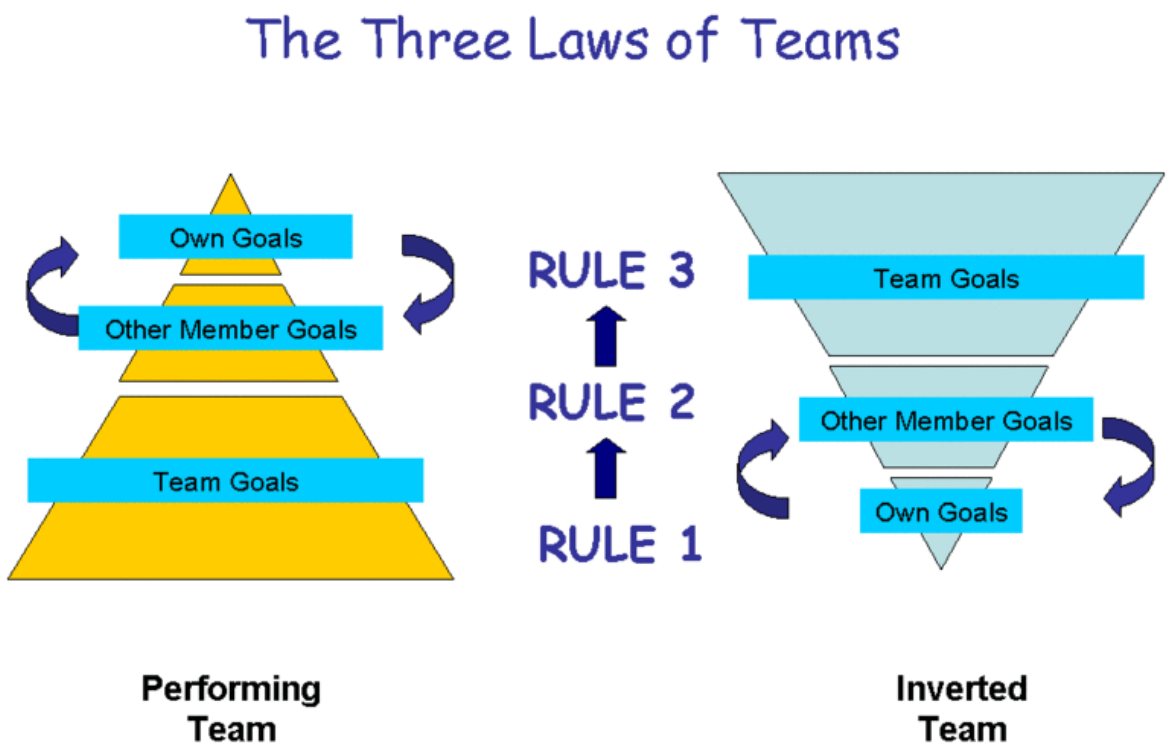
Satisfaction - *success-team Goals*



Boost work performance

Explore individual talents and strengthen relationships

Team goals

Own goals

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Readiness to enter the world of adults

	Maturity	Infantilism
	Activity	Passivity
	Independence	Addiction
	High level of random regulation of behavior (no fear of improvisation - trial and error)	Low new to arbitrary behavior regulation
	High level of sustainability and depth of interests	**Low level of sustainability and interests** (shallowness)
	Long-term perspective for life	Short-term life perspective
	Partnership relationships with others	Relationships **of subordination or superiority** with others
	High level of development of reflection	Low level of development of reflection

Romanova, E.S., Reshetina, S.Yu., Moscow State Pedagogical University, Moscow, Russia

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Supporting behaviors in joint work- DESIGN thinking paths

Discussion - the ability to define a problem, to offer ideas, to argue, to prove, to reason. Speech - constructiveness, in formativeness, restraint, clarity of speech. Character - patience, respect, acceptance of another's opinion.

The proposal for a **decision is based on a choice of several proposals**. **Thinking** - Understanding the importance of consistency in decision making - **a process of "decision", not a goal** to solve. **Character** - perseverance, receptivity, openness to new things, **flexibility.**

Testing - Thinking - Ability to act, predict the result, optimize a decision in a group, perform a task. **Character -** calm, **risk management - do not worry, comment,** act together, in a team.

Achieving goals - success or failure - **Skills to accept and discuss the results of work.**

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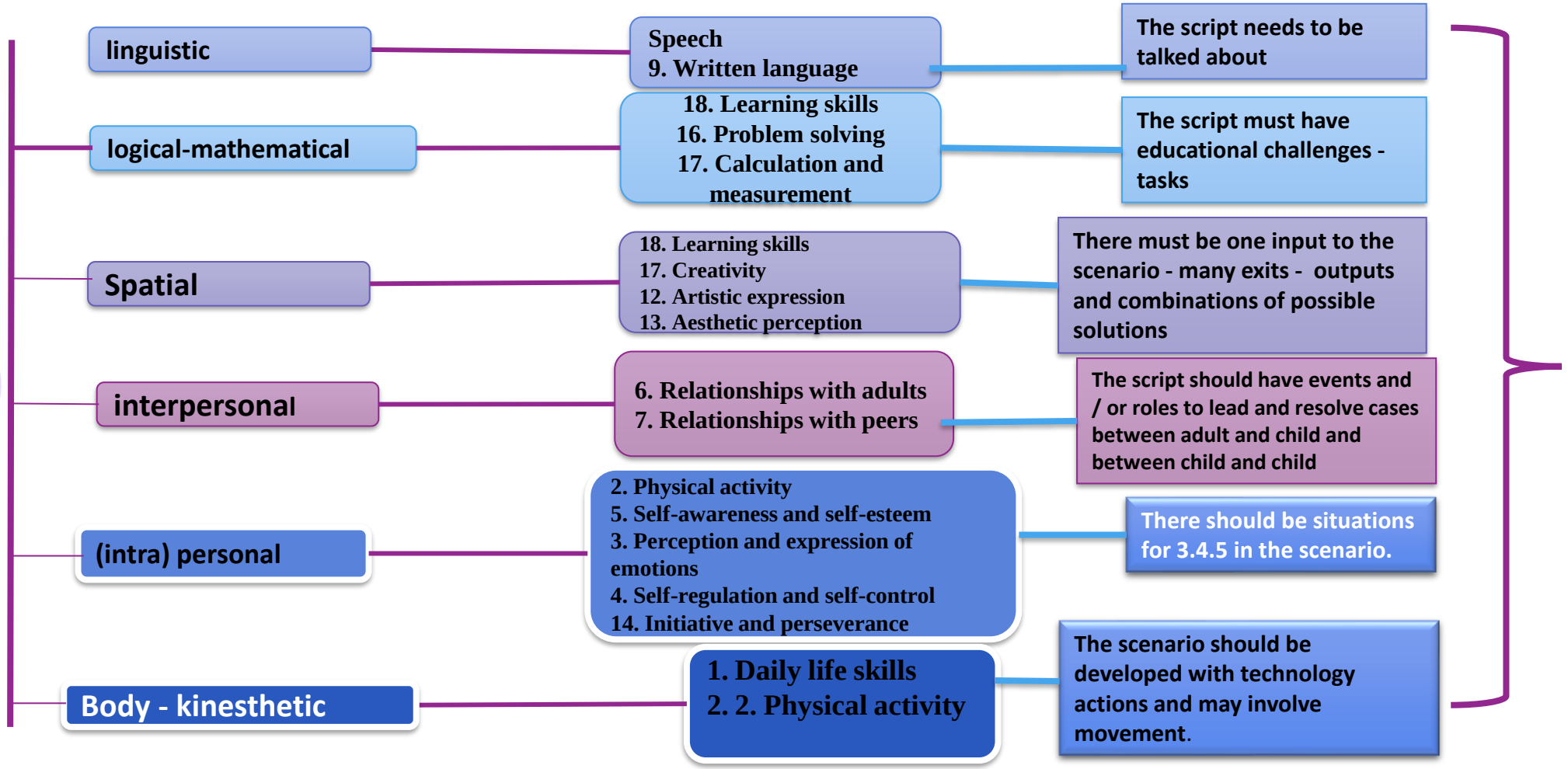
H. Gardner's theory Multiple intelligence

Theoretical and psycho-pedagogical references

What do we know?

RoBy's The best practices Innovation



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Best practices Characteristics

Dynamic Playful Unpredictable Game based learning with Multiple Intelligent solutions

35%	25%	25%	15%
Cognitive	Emotional	Social	Group – team
Algorithmic tasks, informative, Multiple solutions	Wise, Involving, tolerant, reflective	Open-minded, collaborative, Group goals oriented	Discussion, rules, roles, optimization of results

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Let’s play

With robots …..☺

Using teaching principles of Robotics v/s bullying

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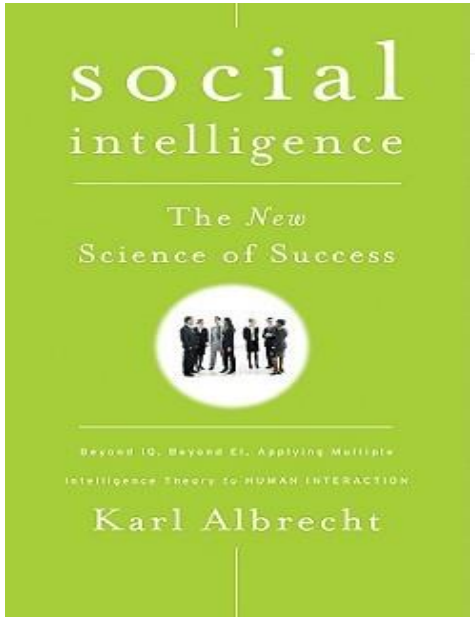
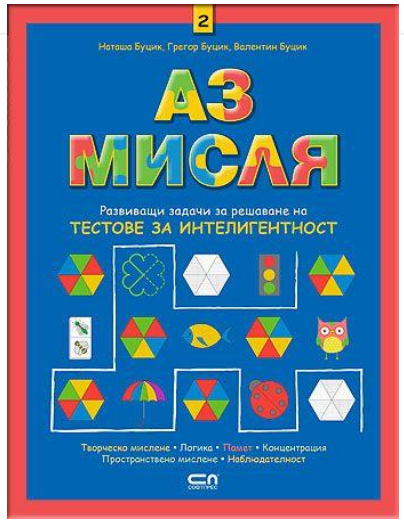
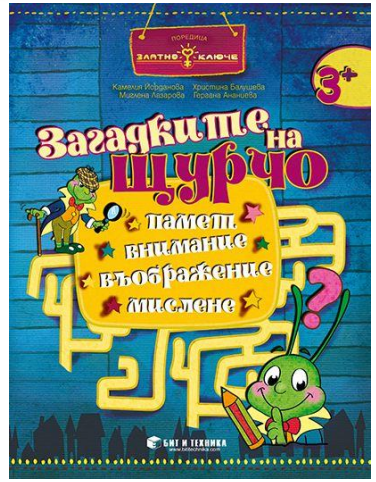
TITLES OF MULTIMEDIA RESOURCES







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Videos

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Thanks...

for your active listening
Always open to questions!

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European online training course