

EDN108

Creative and Critical Thinking

in Schools

Assignment 1

Ho Mei Hei 2454854
Chan Cheuk Yi 2454694

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What is critical thinking?



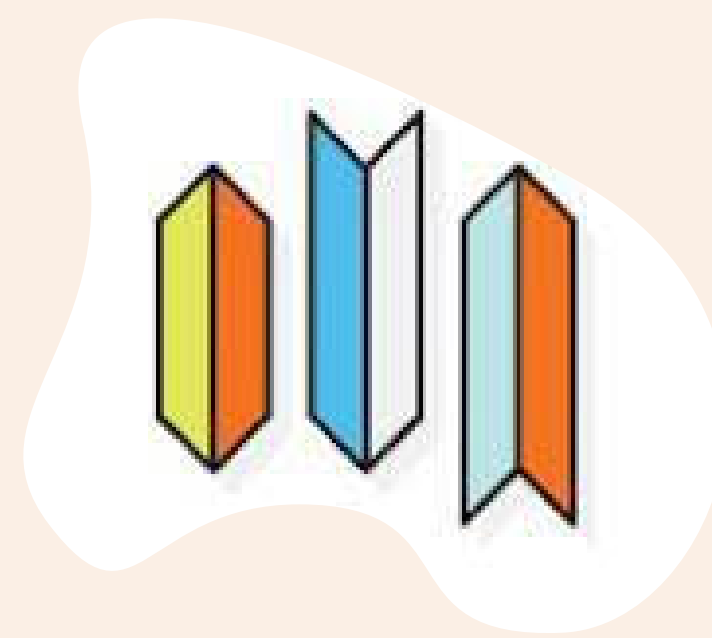
Rationality

The ability to reason logically, form rational beliefs, and make wise decisions



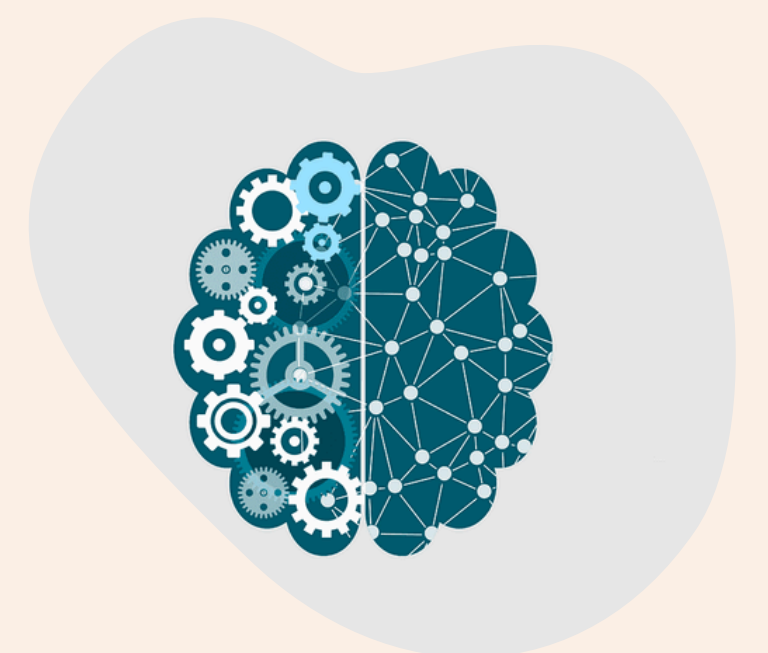
Intelligence

The ability to learn, reason, and solve problems effectively



Intellectual virtues

Character traits include curiosity, open-mindedness, and a commitment to truth



Cognitive science

Explores how the mind learns, reasons, and processes information

The structure of intellectual virtues (Baehr, 2013)

1. Epistemic orientation

The desire / love of pursuing epistemic goods (knowledge, truth)

2. Each intellectual virtue is different

e.g. curiosity, open-mindedness, intellectual courageness

They have one thing in common: they are all rooted in a love for epistemic goods

An intellectual virtuous person: ✓ The desire of pursuing knowledge

✓ The way they act or think resonates to that specific virtue

Intellectual virtues as a way of understanding critical thinking

Argument

Nurturing intellectual virtues are essential for students to develop critical thinking and motivation in learning.

Lifelong learners: intellectual virtuous

(Baehr, 2013) they have a competence and a rationality component

they are skilled and intelligent in learning

Therefore, nurturing intellectual virtues can develop rationality and skills that help people to learn and develop critical thinking.

Intellectual virtues as a way of understanding critical thinking

Argument

Nurturing intellectual virtues are essential for students to develop critical thinking and motivation in learning.

Yes, you can still be intelligent or rational without having the desire of pursuing knowledge

BUT... without the love of pursuing truth and knowledge, you won't have motivation to learn

E.g. Students are forced to memorize facts if they don't have curiosity or interest in learning

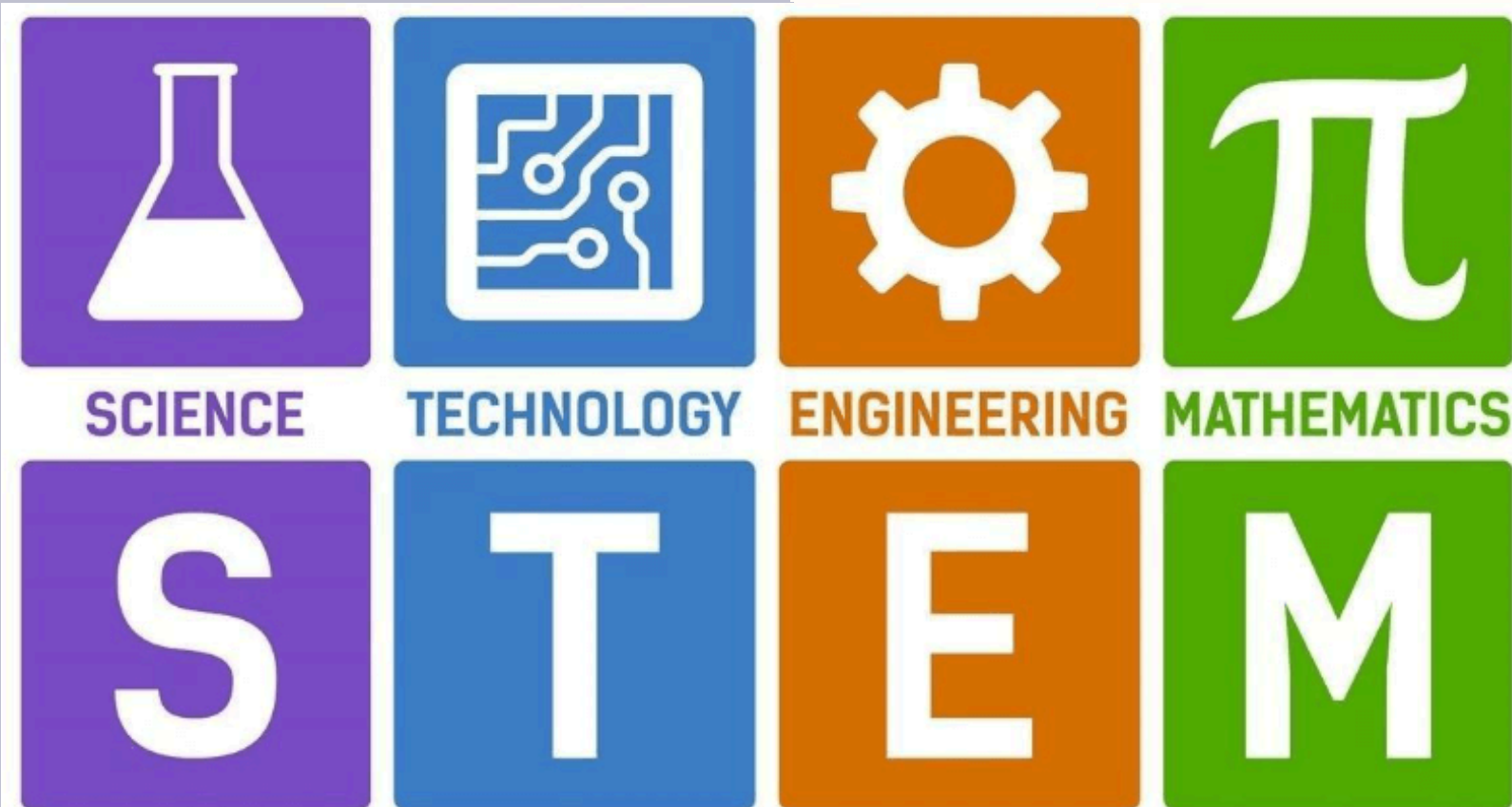
Students may easily give up when dealing with complex knowledge if they don't have intellectual courage

- Therefore, Having intellectual virtues is fundamental for nurturing learning motivation
- It is more important than other aspect (rationality or intelligence) because:

Nurturing intellectual virtues can not only help students to develop rationality and skills in critical thinking but also is essential for motivating students to learn.

Strengths of teaching intellectual virtues in schools

- STEM Education
- Educational subjects focus on science, technology, engineering, and mathematics
- Including doing experiments and simulation projects



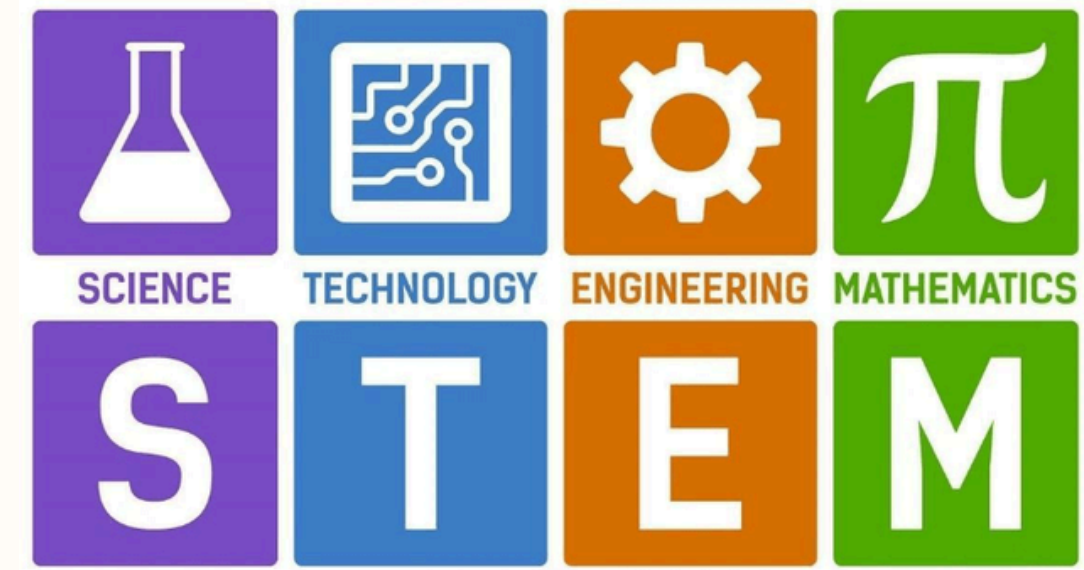
Source:
<https://codakid.com/blog/what-does-stem-stand/>

STEM Education focuses skills on:

- Critical thinking
- Creativity
- Problem solving
- Teamwork and communication

Source:
<https://www.bigbangacademyhk.com/blog-en/stem-education>

Strengths of teaching intellectual virtues in schools



No spoon-feeding materials or standardized methods

Teaching method : high degree of autonomy for students using their creativeness

- Arouses students' curiosity
 - Allows students to generate their own innovative ideas by doing experiments and projects
- Nurturing intellectual perseverance and critical thinking skills
 - Problem solving enhances students' logical thinking and reasoning
 - The problem solving process motivate students to overcome difficulties
- Students can develop specific type of virtues according to their qualities
 - They can develop their own character, motivated to learn by their own virtue rather than external pressure (tests, academic pressure)

Weakness

However...



Critical thinking and motivation can develop through external influences rather than internal character traits.

- Students can learn effectively without intellectual virtues because external rewards (grades, degrees)
- Critical thinking can be taught through formal education without needing curiosity or a commitment to truth (logic, argumentation, and evidence analysis)

Weakness

Yet...



External motivation is short-term!

- Without curiosity or a love for learning, students may struggle to apply critical thinking in real-world situations beyond exams and structured environments.

Intellectual virtues ensure deep, lifelong learning!

- A student who values truth and curiosity will continue learning and thinking critically even when no external rewards exist.

Conclusion

- Intellectual virtues ensure deep critical thinking and lifelong learning.
- External rewards drive short-term motivation, but curiosity and truth-seeking sustain it.
- To develop true critical thinkers, we must nurture both reasoning skills and the desire to learn.

