Importance of pedagogical mediation to develop 21st Century skills

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ATC21S is a joint effort to mobilize international, educational, governmental and organizational communities to bring 21st-century skills into the classroom.
ATC21S PROCESS

Phase 1
Conceptualize C21 skills and education output needs

Phase 2
Skill identification and hypotheses

Phase 3
Task development

Phase 4
Pilot studies and trials

Phase 5
Dissemination scale and policy formation
MANERAS DE PENSAR

- Creatividad e innovación.
- Pensamiento crítico, resolución de problemas, toma de decisiones.
- Aprender a aprender / metacognición (conocimiento sobre los procesos cognitivos).

HERRAMIENTAS PARA TRABAJAR

- Alfabetización informacional.
- Alfabetización en tecnologías de la información y comunicación.

MANERAS DE TRABAJAR

- Comunicación.
- Colaboración (trabajo en equipo).

MANERAS DE VIVIR EN EL MUNDO

- Ciudadanía – local y global
- Vida y carrera
- Responsabilidad personal y social incluyendo conciencia y competencia culturales.
SELECTED SKILLS

WAYS OF WORKING AND THINKING

Collaborative problem solving

TOOLS FOR WORKING AND LIVING IN THE WORLD

ICT digital literacy
COLLABORATIVE PROBLEM SOLVING FRAMEWORK

Collaborative problem solving

Social
- Participation
- Perspective taking
- Social regulation

Cognitive
- Task regulation
- Knowledge building
Social skills strands

Participation
- Action
- Interaction
- Task completion

Perspective taking
- Adaptive responsiveness
- Audience awareness

Social regulation
- Negotiation
- Self evaluation
- Transactive memory
- Responsibility initiative
Cognitive skills strands

**Task regulation**
- Resource management
- Information collection
- Systematicity
- Ambiguity tolerance
- Organisation
- Goal setting

**Knowledge building**
- Knowledge acquisition
- Represents relationships
- Identifies consequences
- Hypothesises
There are two major components of the project

1. Assessing the skills (online/offline)
2. Teaching the skills
Benefits of online Assessment

Able to identify 21C skills (awareness)
Automatic scoring of students abilities in 21C skills (time)

Produces instant summative reports of student ability for teachers (immediate qualitative feedback)
Now we know how to assess, how do we teach?

More assessments focused FOR teaching and learning not for policy making or institution analysis

Real time reports based on learning progressions.

They will identify a point of readiness to learn for each student.

This type of report can be linked to teaching interventions.

Zone of proximal development (Vygotsky)
<table>
<thead>
<tr>
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<th>SOCIAL SKILLS</th>
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CHANGING THE ROLES OF TEACHERS

Teachers are not dictators of information but facilitators of knowledge.

Students are not passive learners but active engaged citizens.
Students can get all their information from the internet and books, it's what they do with that information that makes it valuable.
How?

– Earlier the better, working with higher education and teacher training courses
– Practice what we preach
  ▪ Teacher collaboration within and across schools
  ▪ Teacher self evaluation and ongoing development
Teachers should be educated as to what the 21st Century skills are and how to incorporate these into lessons.

Lack of awareness can lead to poor assessment:
- Mismatch between observation and online tests
  - Social = lower (Social definition wrong)
  - Cognitive = higher (Autism)
We don’t want to overwhelm teachers and provide extra work, we want to incorporate these skills into existing and developing curriculum and into existing lessons!

**21ST CENTURY SKILLS**

- Literacy
- Numeracy
- ICT Capability
- Critical and Creative Thinking
- Personal and Social Capability
- Ethical Understanding
- Intercultural Understanding
EMBEDDING SKILLS INTO CURRICULUM: Costa Rica

CONVIVENCIA

INDÍGENAS

PATRIMONIO CULTURAL

INGLÉS

LOGICA EN ESPANOL

PENSAMIENTO CIENTIFICO POR INDAGACION

PIENSA EN ARTE

MATEMATICAS

ESPAÑOL

SEXUALIDAD

ETICA, ESTETICA Y CIUDADANIA PRIMARIA
(MUSICA, ARTES PLASTICAS, EDUCACION FISICA, CIVICA Y ESTUDIOS SOCIALES)

VIDA COTIDIANA Y ARTES INDUSTRIALES

ETICA, ESTETICA Y CIUDADANIA SECUNDARIA
(MUSICA, ARTES PLASTICAS, CIVICA, EDUCACION FISICA)
• Teaching 21st century skills across the curriculum could improve subject specific knowledge

  Eg a student who prefers languages can learn logic in Spanish and may find it easier when it comes to maths
EXERCISE!

THINK OF A LESSON YOU HAVE WITH YOUR STUDENTS

PICK A 21st CENTURY SKILL

THINK OF HOW YOU COULD INCORPORATE TEACHING THAT SKILL IN THE EXISTING LESSON

WORK INDIVIDUALLY OR IN GROUPS
21st Century Skills

Interaction

Managing resources

Perspective Taking

Adapting communication to partner

Setting appropriate goals

Negotiation

Responding appropriately to others

Testing hypothesis about a problem

Self evaluation

Systematically solving a problem

Forming relationships between information

Collecting information

Perspective Taking

Negotiation

Self evaluation

Forming relationships between information

Collecting information

Managing resources

Adapting communication to partner

Responding appropriately to others

Setting appropriate goals

Testing hypothesis about a problem

Systematically solving a problem
History or Languages lesson

Previous Lesson Plan – students read about different poets and pick their favourite and write an essay about the time they were alive

New Lesson Plan – Each student in the class is given a different poet that they have to research and pretend to be. Students have to communicate to each other in character, the student then have to go away and write about the different poets they met within same time period in history.
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<tr>
<td>Interaction</td>
<td>Asking other students questions</td>
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<td>Collecting relevant information</td>
<td>Only talking with students who were acting as poets from the time period they were researching</td>
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<tr>
<td>Responsiveness</td>
<td>Responding to questions from other students appropriately</td>
</tr>
<tr>
<td>Perspective Taking</td>
<td>Writing about poets from their perceived perspective in that era</td>
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<tr>
<td>Connecting pieces of information together</td>
<td>Linking the different poets together in relation to time period</td>
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Subject knowledge also gained
Food Technology or Life Lesson

Each student is given one ingredient. They have to form their own groups considering the ingredients they have, and make a healthy meal together. Students will then judge other groups meals based on their nutritional value.
## Food technology Lesson – CPS

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<tr>
<td>Resource Management</td>
<td>Making good use of own resources</td>
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<tr>
<td>Connecting pieces of information together</td>
<td>Linking together knowledge about combinations of ingredients to make a healthy meal</td>
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<tr>
<td>Negotiation</td>
<td>Negotiating with team mates as to which meal to make and which will be the most nutritional</td>
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<tr>
<td>Peer Assessment</td>
<td>Judging other groups work fairly to determine their performance on the task</td>
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<td>Connecting pieces of information together</td>
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Subject knowledge also gained
Science or Art Lesson

Previous Lesson Plan – Students have to write an essay about a species of animal

New Lesson Plan – Each student chooses an animal to research and draw. They have to share with one another the animals they have chosen, then get themselves into groups with other students of the same species of animal and create a larger picture incorporating all of the species and general knowledge about the species as a whole. Students must present species as a group and self assess their performance afterwards.
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<td>Interaction</td>
<td>Asking other students questions about their animals to determine if it’s the same species</td>
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<td>Collecting relevant information</td>
<td>Accurate information about their animal and which species it belongs to</td>
</tr>
<tr>
<td>Self Assessment</td>
<td>Reflecting on their own performance and participation during group work in an informal way</td>
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<tr>
<td>Knowledge acquisition</td>
<td>Learning lots of information from other people</td>
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<tr>
<td>Adapting communication</td>
<td>Adapting their picture into a presentation for their peers that is easily communicated</td>
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Subject knowledge also gained
What now?

- Possible teacher professional development
- Teacher collaboration especially within subject areas
- Improve access to resources and materials (online database, access for all)
- Set up classrooms in the right environment
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