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ClimEd

619285-EPP-1-2020-1-FI-EPPKA2-CBHE-JP

Multilevel Local, Nation- and Regionwide Education and Training in Climate Services, Climate Change Adaptation and Mitigation

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Competence-based learning 2:

Curriculum Design

Marek Frankowicz

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Curriculum design: Two approaches

❖Top-down

- We have an idea of a new program
- We formulate program learning outcomes
- We divide the program into modules
- We develop module/course learnig outcomes
- We check for consistency

❖Bottom-up

- We formulate program learning outcomes (on the basis of existing courses)
- We design a competence matrix
- We iterate/optimize our program

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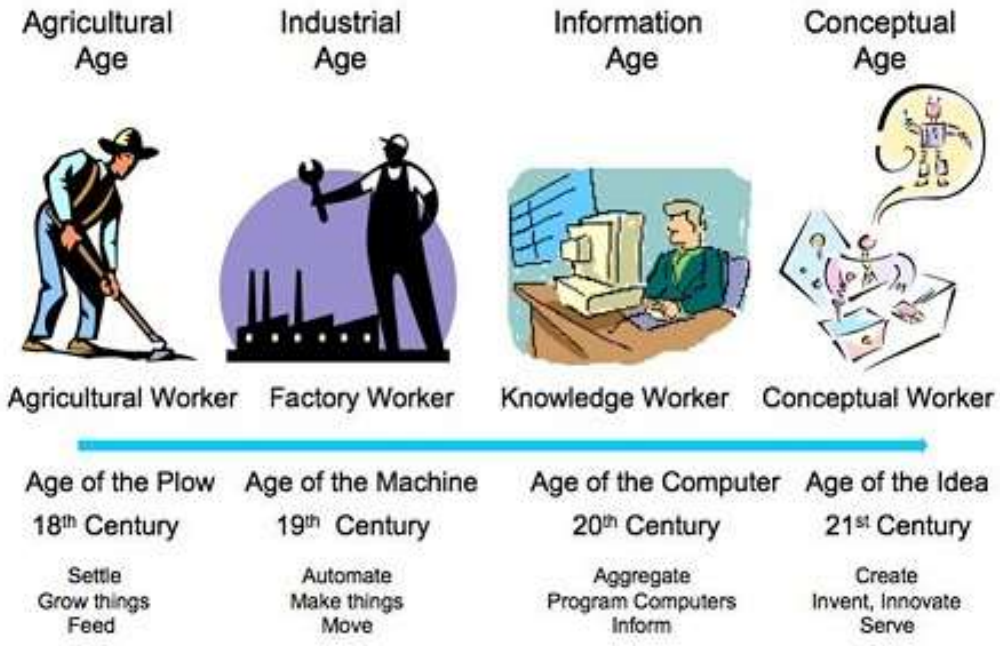
Conceptual Age



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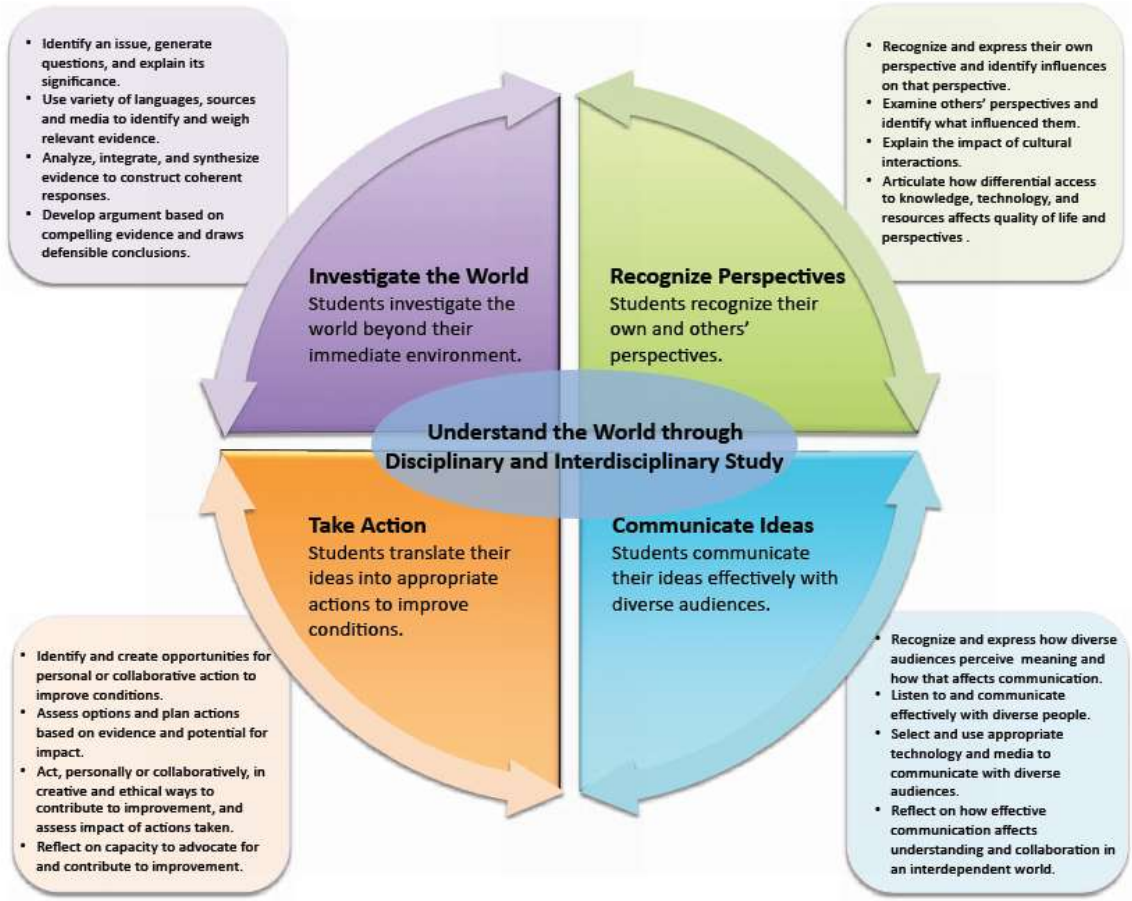
Global Competence Matrix (GCM)



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GCM for Science

Investigate the World

Students use science to investigate the world.

Students:

- ❖Identify issues and frame investigable questions of local, regional, or global significance that call for a scientific approach or emerge from science.
- ❖Use a variety of domestic and international sources to identify and weigh relevant scientific evidence to address globally significant researchable questions.
- ❖Design and conduct a scientific inquiry to collect and analyze data, construct plausible and coherent conclusions, and/or raise questions for further globally significant study.
- ❖Interpret and apply the results of a scientific inquiry to develop and defend an argument that considers multiple perspectives about a globally significant issue.

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GCM for Science

Recognize Perspectives

Students recognize their own and others' perspectives through the study of science.

Students:

- ❖ Recognize and express their own perspective on situations, events, issues, or phenomena, and determine how that perspective along with their entire understanding of the world is influenced by science.
- ❖ Examine scientific ways of knowing and perspectives about science of other people, groups, and schools of thought, and identify the influences on those perspectives.
- ❖ Explain how cultural interactions influence the development of scientific knowledge.
- ❖ Explore and describe the consequences of differential access to scientific knowledge and to the potential benefits of that knowledge.

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GCM for Science

Communicate Ideas

Students communicate about science effectively with diverse audiences around the world.

Students:

- ❖ Recognize and express how diverse audiences may interpret differently and/or make different assumptions about the same scientific information and how that affects communication and collaboration.
- ❖Use varying scientific practices, behaviors, and strategies to verbally and non-verbally communicate scientific information effectively with diverse audiences, including the international scientific community.
- ❖Select and use appropriate technology and media to communicate about science and share data with experts and peers around the world.
- ❖Reflect on how effective communication affects scientific understanding and international collaboration in an interdependent world.

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GCM for Science

Take Action

Students use their scientific knowledge and skills to translate their ideas and findings into actions that improve conditions.

Students:

- ❖Identify and create opportunities in which scientific analysis or inquiry can enable personal or collaborative action to improve conditions.
- ❖Assess options, plan actions, and design solutions based on scientific evidence and the potential for impact, taking into account previous approaches, varied perspectives and potential consequences.
- ❖Act, personally or collaboratively, in creative and ethical ways to implement scientifically-based solutions that contribute to sustainable improvements, and assess the impact of the action.
- ❖Reflect on how scientific knowledge and skills contribute to their capacity to advocate for improvement locally, regionally, or globally.

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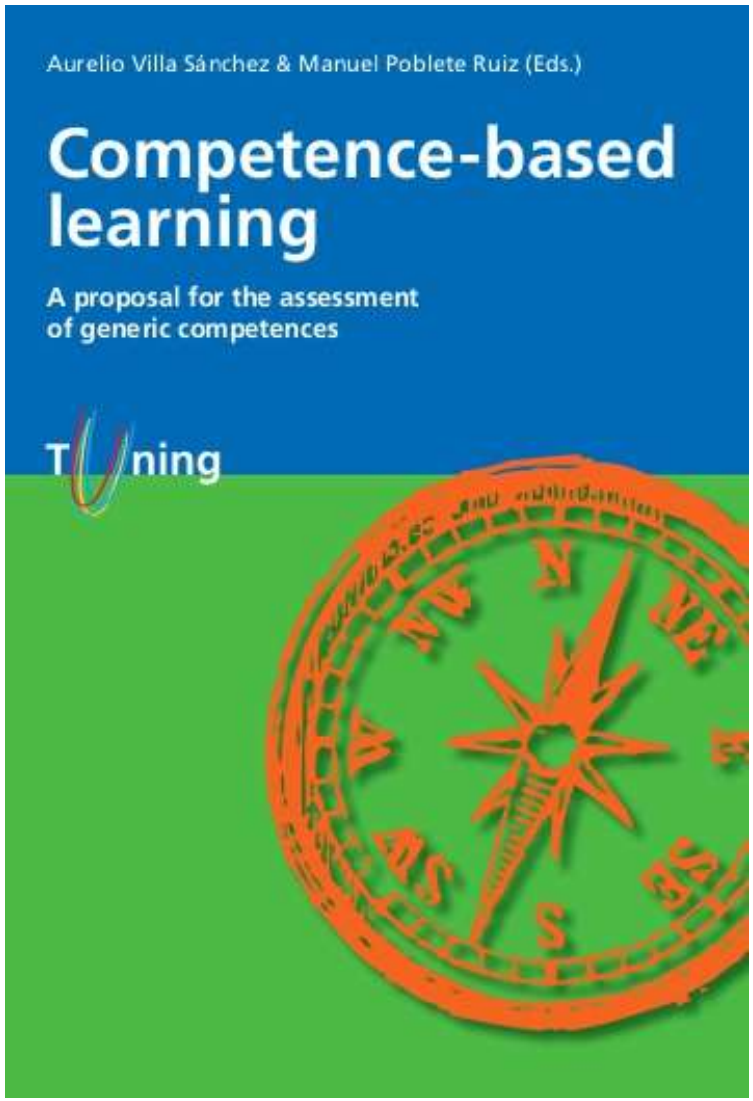

Kompetencja
Określenie kompetencji (definicja)
Związek z innymi kompetencjami
Istotność danej kompetencji w życiu zawodowym i praktyce akademickiej
Możliwości uzyskania danej kompetencji w ramach programu studiów
Poziomy uzyskania danej kompetencji (podstawowy, średni, zaawansowany)
Wskaźniki/mierniki danej kompetencji
Propozycja narzędzi pomiaru danej kompetencji

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Graduate Attributes

Engaged	Enterprising	Enquiry-Based	Effective	Expert
• Socially responsible • Civically responsible • Curious • Motivated self-starters • Active team players • Reflective practitioners • Global citizens	• Independent thinkers • Creative • Career-educated • Self-starters • Innovators • Entrepreneurs • Well organised	• Critical thinkers • Digitally literate • Inquisitive • Problem solvers • Creators of new knowledge • Analytical	• Excellent communicators • Information literate • Self managers • Decision makers • Resilient • Reflective practitioners	• Experiential learners • Discipline knowledge • Practice-based learners • Work-based learners • Ethical • Leaders • Project managers

ENHANCING EMPLOYABILITY

from SUSDEV presentation in Krakow authored by colleagues from DUT, Ireland

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How to group LO? My personal concept (M.F.)

- Knowledge & Skills
  - Basic K&S (for wider subject area)
  - Specific K&S (for given study area)
  - Specialized K&S (depending on individual study path)
  - Supplementary K&S (e.g. enterpreneurship, ICT etc.)
  - Synergic K&S
- Personal & social competences/attitudes
  - ‘Technical’ competences
  - Attitudes

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Design of study program – Tuning approach

1. Determine need and potential
2. Define the profile and the key competences
3. **Formulate programme LO**
4. Decide whether modularise or not
5. Identify competences **and LO** for each module/course unit
6. Determine the approaches to teaching, learning and assessment
7. Check whether the key generic and subject specific competences are covered
8. Describe the programme and the course units
9. Check balance and feasibility
10. Implement, monitor and improve

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The format of program description

- Example: TUNING Guide to Formulating Degree Profiles
- The template: General information on the programme and 6 sections
  1. Purpose
  2. Characteristics
  3. Employability & Further Education
  4. Education Style
  5. Program Competences
  6. Complete list of program learning outcomes

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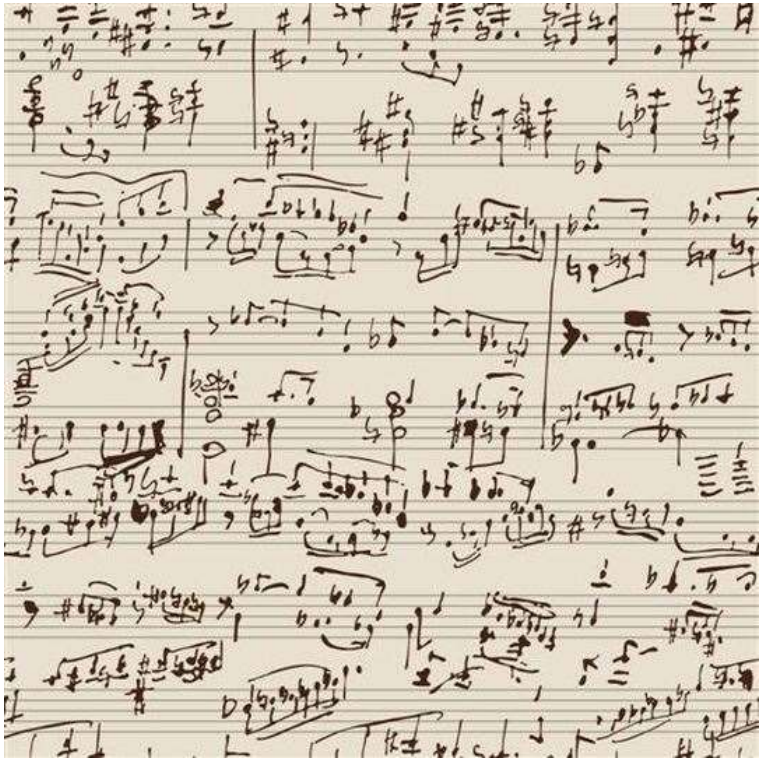
Orchestrated programme



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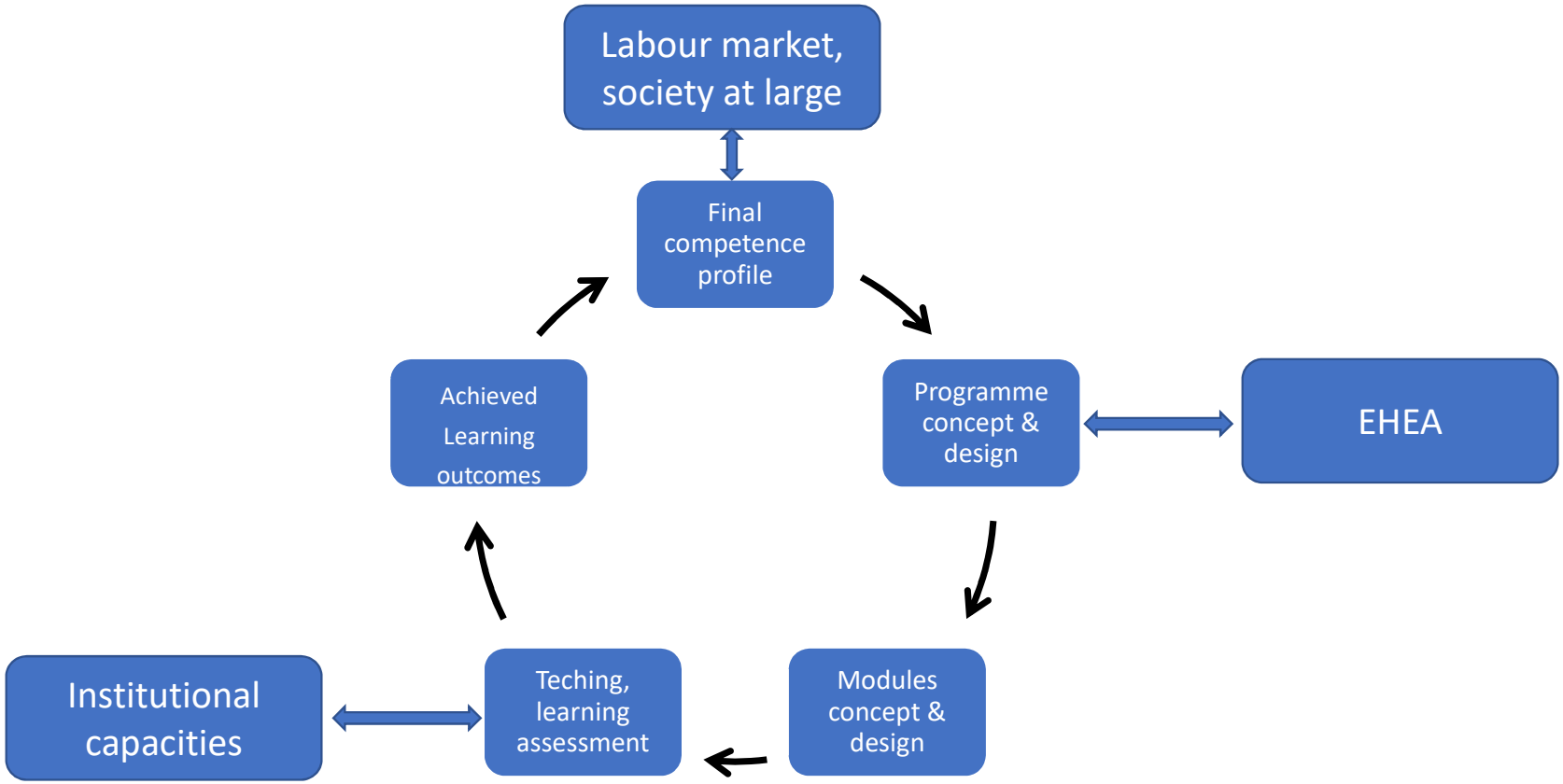
LO for different groups of learners

- „Traditional” students
- Adult learners
- International students



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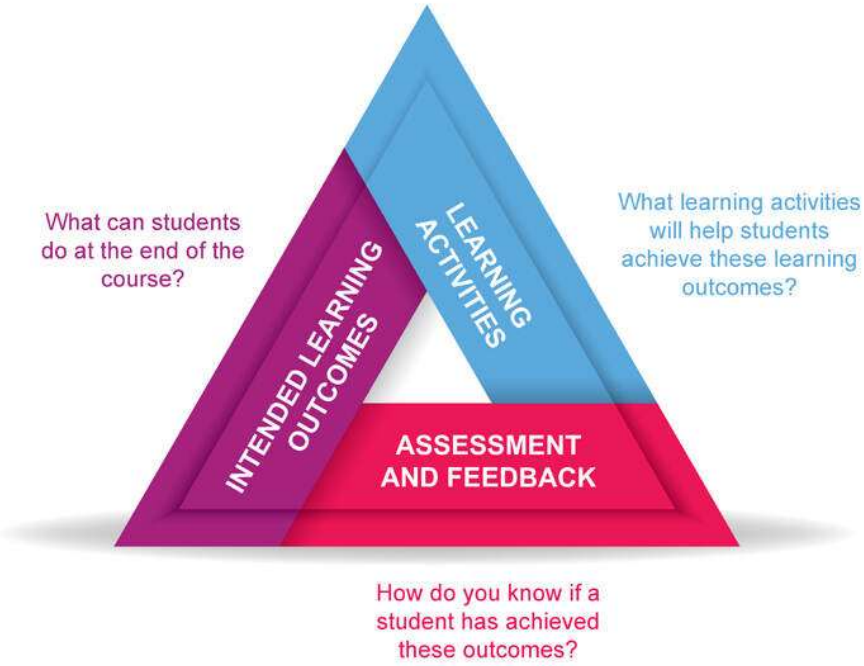
Constructive Alignment



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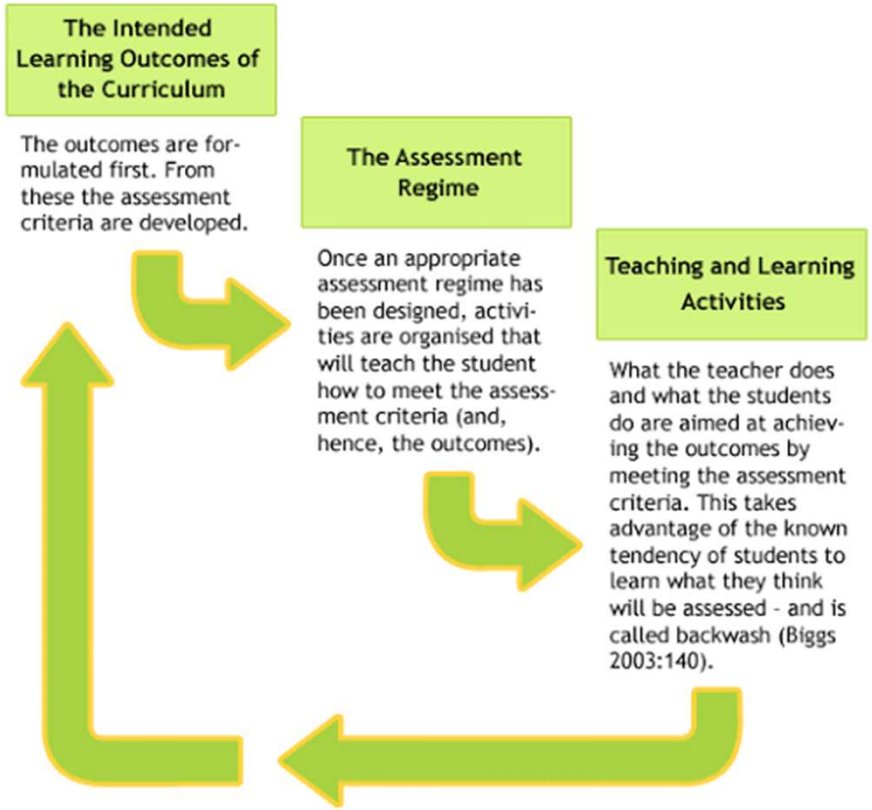

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Thank you!