

GUIDELINES

EXECUTION

COACHING IN CERL

The ultimate goal of CERLs is to prepare learners to address 'ill-structured problems', real-life issues that are often multidimensional and complex, lack definite solutions and can be tackled using various solution paths and strategies. These are also called 'wicked problems' stressing that both the problem and the solution(s) are unclear, having no clearly defined right or wrong answers, being ambiguous, complex and chaotic in nature. They require to be approached from a variety of perspectives and by crossing the boundaries of established disciplines, of existing socio-ecological and socio-cultural domains, by combining different practices, involving a diversity of stakeholders, diverse knowledge and professional domains.

According to Boundary Crossing theories (Gulikers & Oonk, 2019), these processes entail four mechanisms: (i) IDENTIFICATION of one's own expertise and perspectives, and the expertise and perspectives of all stakeholders involved in the research process, (ii) COORDINATING effective collaboration between those different stakeholders, (iii) REFLECTION or perspective-making between different practices, and (iv) TRANSFORMATION of knowledge by combining the different perspectives around the existing boundaries in order to develop more adequate practices, models, frameworks and solutions.

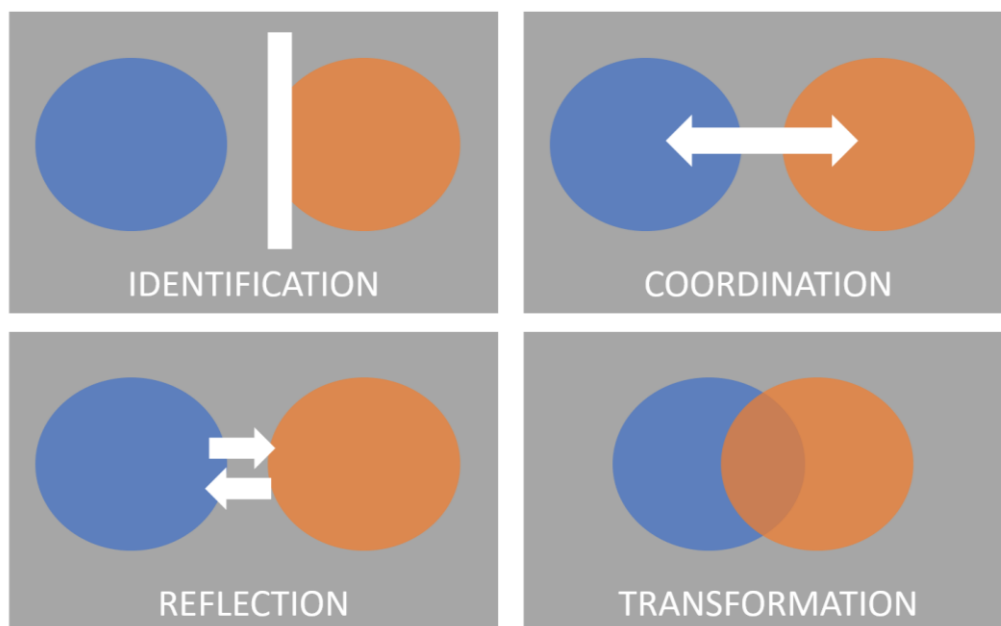


FIG. 23: Key mechanisms in boundary crossing processes, adapted from Gulikers & Oonk (2019).

Collaborative learning in so-called multi-stakeholders or transdisciplinary teams can be fun and existing, but it does not come without any challenge. As various stakeholders represent different practices, different cultures, languages, institutional contexts, etc. CERL dynamics will come with moments of tension, friction, conflict, discomfort or even rebellion. To develop a meaningful learning

trajectory, it is imperative the wright balance between sufficient steering (clear instruction and guidance geared to both the starting capacities as well as the intended outcomes) and autonomy (possibilities for self-direction, ownership and control for all participants involved in the CERL process).

The so-called GROWTH mindset is an interesting framework in this regard. It was put forward by Prof. Carol Dweck as the counterpart to the so-called 'FIXED mindset' for building positive and powerful learning environments. A GROWTH mindset implies that you not only have look at the final outcomes of the learning process, but take the growth throughout and evolution of the learning process in itself into account as well. Mentoring focusses on possibilities and opportunities, rather than problems or shortcomings.

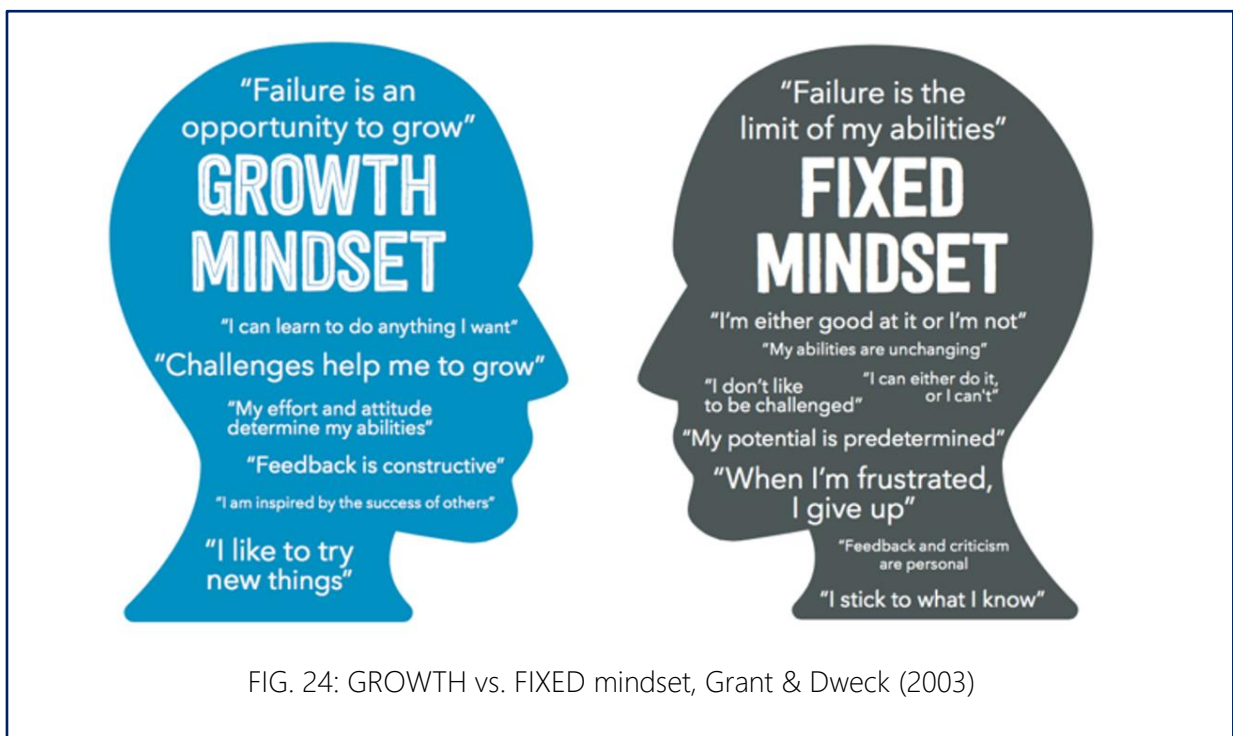


FIG. 24: GROWTH vs. FIXED mindset, Grant & Dweck (2003)

This attitude can also be found in the work of Jef Clement on 'inspirational coaching' (Clement, 2014). Clement sees coaching as a way *to provoke learning*; to break through the obvious; to tap into enthusiasm; to push boundaries; explore new ideas; challenge one self and one another to look at things differently. The belief in the learners' ability to develop him/herself and to resolve difficult situations is central in his work. In the case of setbacks, it should not immediately be assumed that the learner is unable to meet expectations. Coaching and reflection strategies are to be used to examine the learning process, remove obstacles and to maximise growth and learning opportunities.

A GRROW coaching cycle has five steps: Goal (What is your learning question? When would you be satisfied?), Reality (What does the situation look like now? What are you encountering? What are you concerned about?), Resources (Whom can you contact? What talents can you use? Which theoretical frameworks could help?), Options (What options do you have? Which advantages and disadvantages do they have?) and Will (What steps will you take? When will you do what? Who can help you if things get difficult?).

GRROW coaching works towards concrete and realistic goals. It helps people grow in taking constructive and targeted actions, positive attitudes and insight into their personal ambitions and learning. Guidelines are: (1) starting from concrete, personal experiences, (2) focusing on resources available from the coachee and in the environment, (3) adopting a constructive perspective, (4) showing authentic interest in each other, being present during the conversation, making contact, (5) creating a safe environment, by participating in the conversation with an appreciative attitude. The aim is to gain new insights together during the coaching conversation and to achieve sustainable (behavioural) change.

During coaching sessions, it is important to reflect on one's own thinking, acting and learning from different points of view. For example, by letting students take on various roles: a critical friend, researcher, stakeholder(s), professional, timekeeper, ... In this way, you explore experiences and learning questions from different angles: critical, investigative, objective, target group-oriented, appreciative, time-bound, ... They need to practice diverse skills, such as active and exploratory listening, being appreciative and empowering, providing confronting and inspiring feedback.

REFLECTION QUESTIONS

Who will be involved in my CERL strategy?

Do these people know each other?

Who will help them build trustful relationships?

Who will monitor dynamics throughout the CERL process?

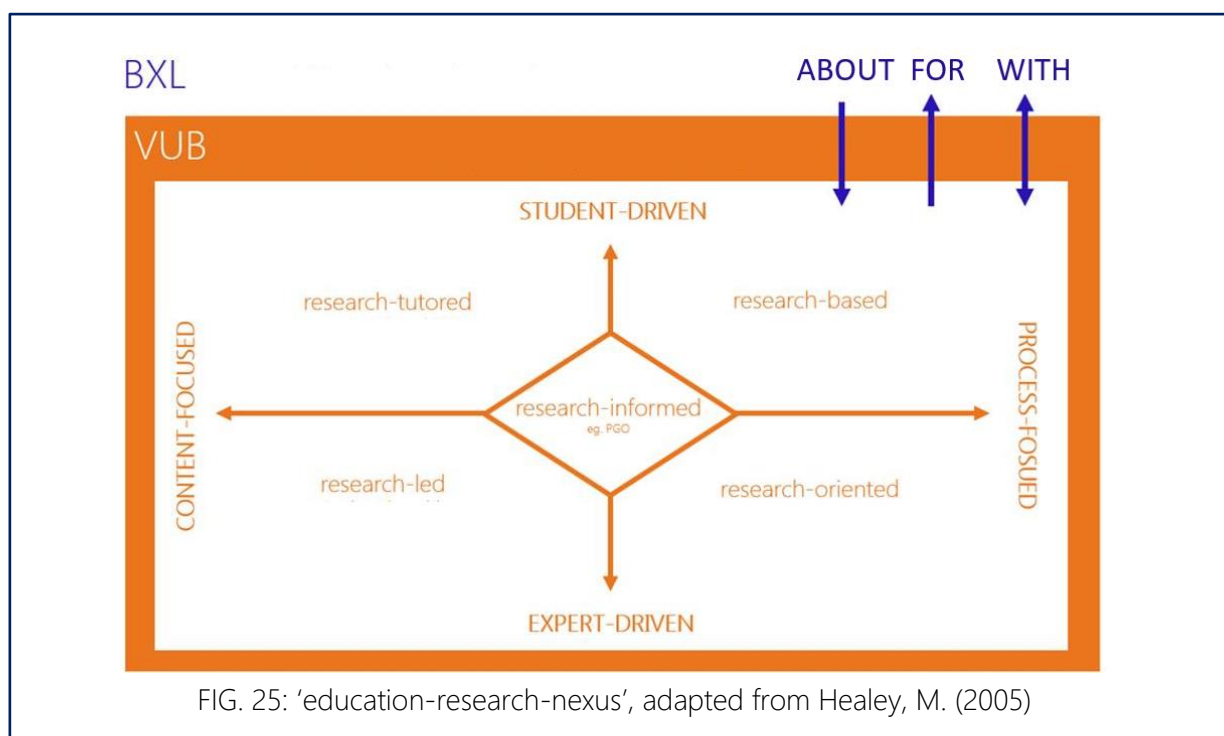
In what way will tasks and roles be divided?

How are participants prepared to meet responsibilities?

How, when and by whom will they be coached?

LINKING TEACHING AND RESEARCH

In the CERL design and teaching principles we put forward, the importance of research-driven and research-promoting approaches is highlighted. How can the link between education and research be put into practice within the CERL context?



Starting from Healey's model (2005), the education-research nexus can be realised in various ways:

RESEARCH-LED = EXPERT-DRIVEN & CONTENT-FOCUSED

Course contents are selected on the basis of the research interests and/or the expertise of the lecturer. The emphasis is on knowledge acquisition, in particular on insight into research results rather than research processes and methods.

RESEARCH-ORIENTED = EXPERT-DRIVEN & PROCESS-FOCUSED

Aside from the course contents, the emphasis is on understanding the processes and methods on the basis of which knowledge is produced within a certain discipline. Education is aimed at acquiring research skills and a 'research ethos'.

RESEARCH-BASED = STUDENT-DRIVEN & PROCESS-FOCUSED

Students are actively involved in the research process, the starting point are authentic research problems, needs and partnerships.

RESEARCH-TUTORED = STUDENT-DRIVEN & CONTENT-FOCUSED

Student-centred education using activating learning methods. The emphasis is on course and research content, rather than on research skills and processes.

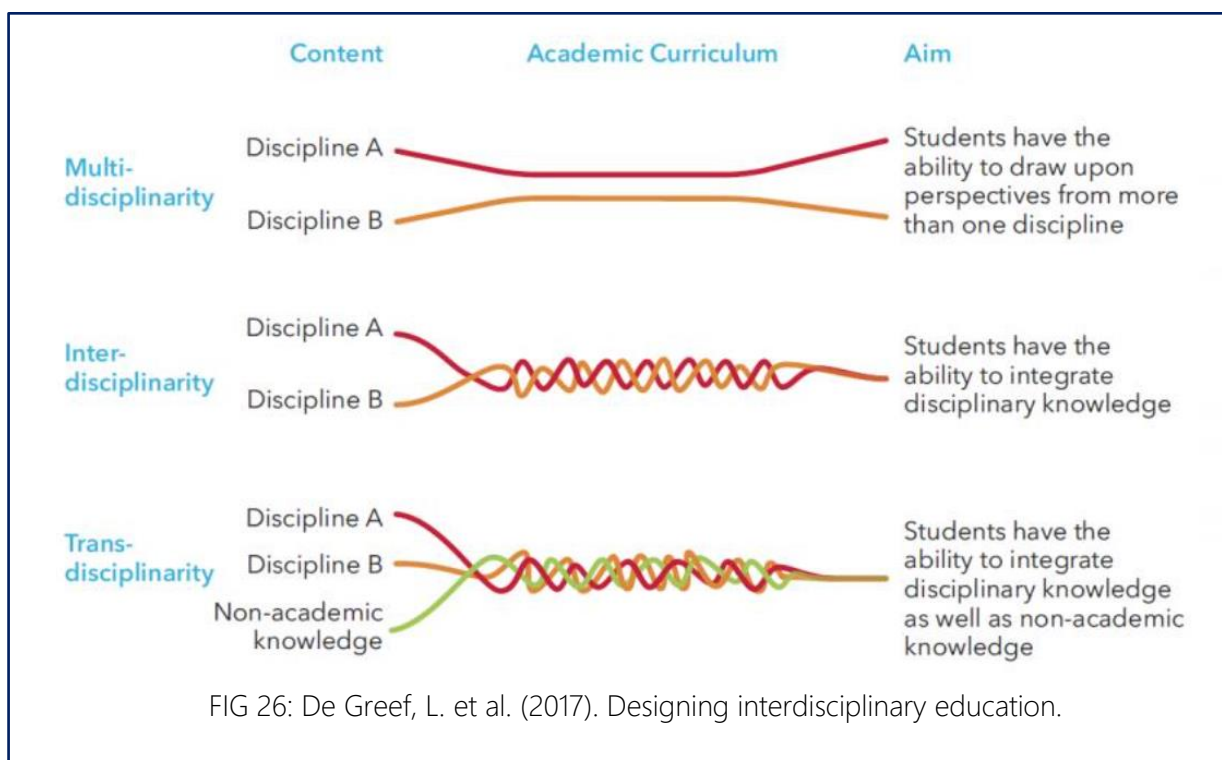
RESEARCH-INFORMED = EXPERT and/or STUDENT-DRIVEN with PEDAGOGICAL FOCUS

Focuses more on educational research than on disciplinary research. Lecturers and/or students monitor the quality and/or impact of a course or project.

Research shows that linking education and research can be valuable for lecturers, students, institutions and partners. On the other hand, this is not always an easy thing to achieve. It also raises a number of quandaries and challenges for each of the actors involved (Elsen et al., 2009). It is important to carefully consider these in advance and monitor them during the implementation of your CERL project. Expectations, needs, timelines, availability and resources must constantly be monitored, fine-tuned and / or adjusted. A good liaison officer or broker is certainly beneficial in this regard.

Ideally CERLs are both research-driven as well as well as research-promoting. Pedagogy is enhanced as a result of research activities and expertise and – the other way around – is research renewed by engaged teaching activities. CERLs allow to make academic expertise, methods, infrastructure and networks available to foster societal transformations through engaged pedagogies, through which new new research problems can emerge, new research partnerships can be shaped concrete opportunities for exploring novel forms of knowledge production are created.

CERLs are a means to shape multidisciplinary, interdisciplinary and transdisciplinary teaching and research. They stimulate students to look at research problems and societal challenges from a variety of perspectives. Learn them to integrate various forms of knowledge and collaborate across disciplinary, institutional, cultural and socio-ecological boundaries. This requires the ability to reconcile multiple forms of problem representation, forms of inquiry and solution paths through thoughtful integration of theories, methods and results all along the CERL process. A process that relies on active collaboration, reflective dialogue and critical meaning making between diverse stakeholders (see figures below).



Transdisciplinary education, including some forms of CERL, should not only be geared towards (priority) research themes and expertise of one's own department or institution, but also to the societal research and policy agendas. Academic and non-academic actors from various disciplines are brought together in a co-creative process to contribute to local change capacities. In that context, one could speak of a learning ecosystem, in which stakeholders shape sustainable solutions and innovation for complex societal challenges. Given that these 21st-century challenges, these so-called 'wicked problems', are typically multidimensional in nature, they require a collaboration across disciplines fields and co-creation between various stakeholders (the business community, governments, civil society organisations, active citizens, academia). It is important that students are offered learning experiences that allow them to develop relevant competencies throughout their studies. CERL strategies are an ideal vehicle to do so.

REFLECTION QUESTIONS

How do I connect teaching and research in my CERLs?

How will I align to local research and policy agenda's?

In what way are institutional research expertise or priorities guiding my CERL efforts?

What is the goal of this connection?

Where is the added value for the students, the involved partners and for me and my colleagues?

How do I ensure quality monitoring?

CRITICAL REFLECTION IN CERL

In CERLs actors with very different backgrounds are brought together for a shared process of knowledge sharing and creation. This process is influenced by a variety of individual factors. Some that are immediately apparent (differences in language, gender, age, skin colour, physical health, etc.), others that are less pronounced and have a subtler influence on process interactions and outcomes (family background, socio-economic situation, level of education, role patterns, learning style, framework of values, political beliefs, etc.).

As a lecture / instructional designer, you will initially be confronted with visible characteristics and behaviours - the characteristics above the 'waterline' according to the McClelland iceberg model (see figure below). However, if you want to achieve sustainable behavioural change, you also will need to dive 'below the waterline' with your students and other stakeholders in the learning process, searching for views, values, beliefs and expectations that influence thinking and acting, while not being immediately apparent or explicit. By exposing these and making them negotiable, you get a more impactful learning path.

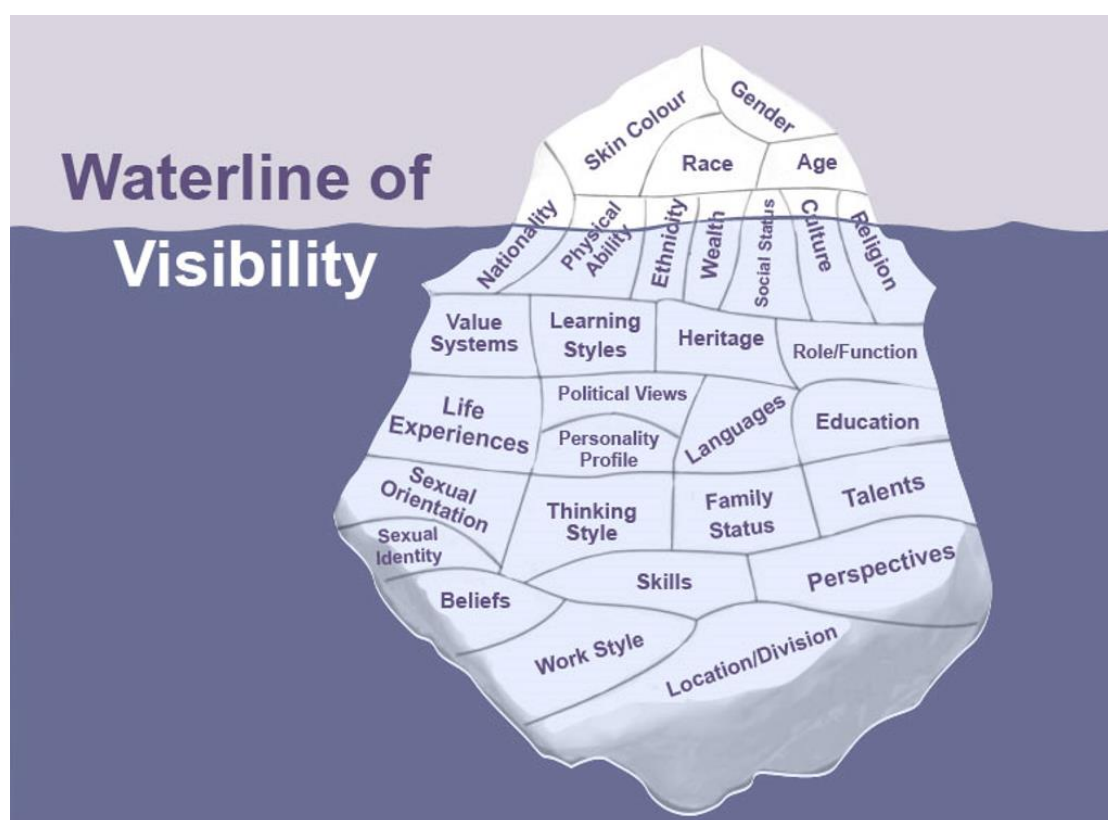


FIG. 27: Iceberg model, after McClelland (1973)

By diving 'below the waterline', you create space for Triple-loop learning, also called *transformational* learning (Lingsma & Scholten, 2007). With single-loop learning, you only pay attention to the visible and concrete behavioural level (What do you do?). Double loop learning examines the patterns

associated with behaviour (How do you do it?). Triple-loop learning goes one layer deeper (Why do you want/do this?). It assesses what is important to the person, the motives that underlie a certain view, attitude or behaviour, thereby exposing factors that influence identity construction and provide leverage by means of which learners can take ownership of their own thinking, acting and learning process.

John Dewey called this process 'critical reflection': 'Critical reflection is the active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends.' Barbara Jacoby stated: 'Critical reflection is the process of analyzing, reconsidering, and questioning one's experiences within a broad context of issues and content knowledge. Guiding students through the process of considering and reconsidering their values, beliefs, and acquired knowledge that enables them to question and challenge their stereotypes and other a priori assumptions. Critical reflection adds depth and breadth to meaning by challenging simplistic conclusions, comparing varying perspectives, examining causality, and raising more challenging questions. Critical reflection raises critical questions, which challenge us to consider multiple perspectives and to recognize complexity in a situation or issue that may initially seem straightforward.'

Critical reflection can take a variety of forms. Ideally it helps students to explore different domains of learning: (i) the personal domain: self-awareness/reflexivity – goal is to address concerns about the influence of subjectivity; surface personal thoughts and actions, (ii) the interpersonal domain: paying attention to the relationships that are central to the history and undertaking of a particular activity – goal is to address concerns about the influence of group interaction; acknowledge disciplinary traditions and ways of working, (iii) the contextual domain: examining how established concepts, theories and methods inform and influence (practice/activity) – goal is to address concerns about the influence of established concepts and ideas; acknowledge/surface their limitations, and (iv) the critical domain: brings issues of political, ethical, and social power into focus – goals is to address concerns about the influence of powerful groups; acknowledge/surface different interests and agendas.

Research shows that it promotes higher-order thinking and cognitive development; stimulates the development of judgment, evaluation, and problem-solving abilities; helps to make connections across disciplines; facilitates students becoming more independent, self-directed learners; develops the ability to separate facts from opinions, being able to examine an issue from multiple perspectives, the ability to make rational inferences, and the ability to withhold personal judgment; helps to develop self-awareness so as to know the difference between a rational thought based on careful consideration, and an emotional response based on personal bias (Islam, 2015; Johnson 2010).

Reflective writing	<ul style="list-style-type: none"> ● Learning journals/diaries (Wall et al. 2004) ● Memos (Dowling 2006) ● Reflective notes (Smith 2008) ● Critical Incident Technique (Flanagan 1954) ● Critical Portfolio (Brockbank and McGill 1998)
Reflective summaries	<ul style="list-style-type: none"> ● Tabulation or lists of reflective themes (Alvesson and Sköldberg 2000) ● Feedback/self-evaluation forms (Boud, Keogh, and Walker 1985)
Diagrammatic representation	<ul style="list-style-type: none"> ● Concept maps, mind maps and conceptual diagrams (Eppler 2006)
Creative representation	<ul style="list-style-type: none"> ● Pictures/images (Stronach et al. 2007) ● Story writing (Plummer 2001) and polyvocality (Riley, Schouten, and Cahill 2003) ● Videoing/film-making (Pauwels 2006)
Perspective taking	<ul style="list-style-type: none"> ● Stakeholder/service user views (Roth and Tobin 2002) ● Reflective interview (Bolam, Gleeson, and Murphy 2003)
Interaction	<ul style="list-style-type: none"> ● Peer- or group-discussion (Brookfield 1987) ● Problem-based Learning (Fyrenius, Wirell, and Silén 2007) ● Service user involvement in teaching (Felton and Stickley 2004)

FIG 28: Reflective techniques, Morrow (2010)

Critical Reflection can take a variety of forms (see table above) and should be carefully and intentionally designed to generate learning by applying theory to practice, seeking to understand causality, and appreciating the complexity of social issues and potential solutions. It deepens learning by encouraging students to examine their assumptions, avoid facile conclusions, and ask more complex questions

Ash and Clayton (2009) highlighted 4 characteristics of meaningful reflection:

CONTINUOUS means reflection occurs before, during and after the engagement activities. Pre-reflection prepares students by introducing them to the issues, the community, the organization, the research problem and population that their engagement activities will address. Reflection activities during the engagement, enables them to record observations, examine theory while practicing, process dissonances they may experience between initial expectations and the reality of their experience. Post-reflections help students to formulate what was learned, relate this to prior thinking and experiences, and make projections for future learning experiences and aspirations.

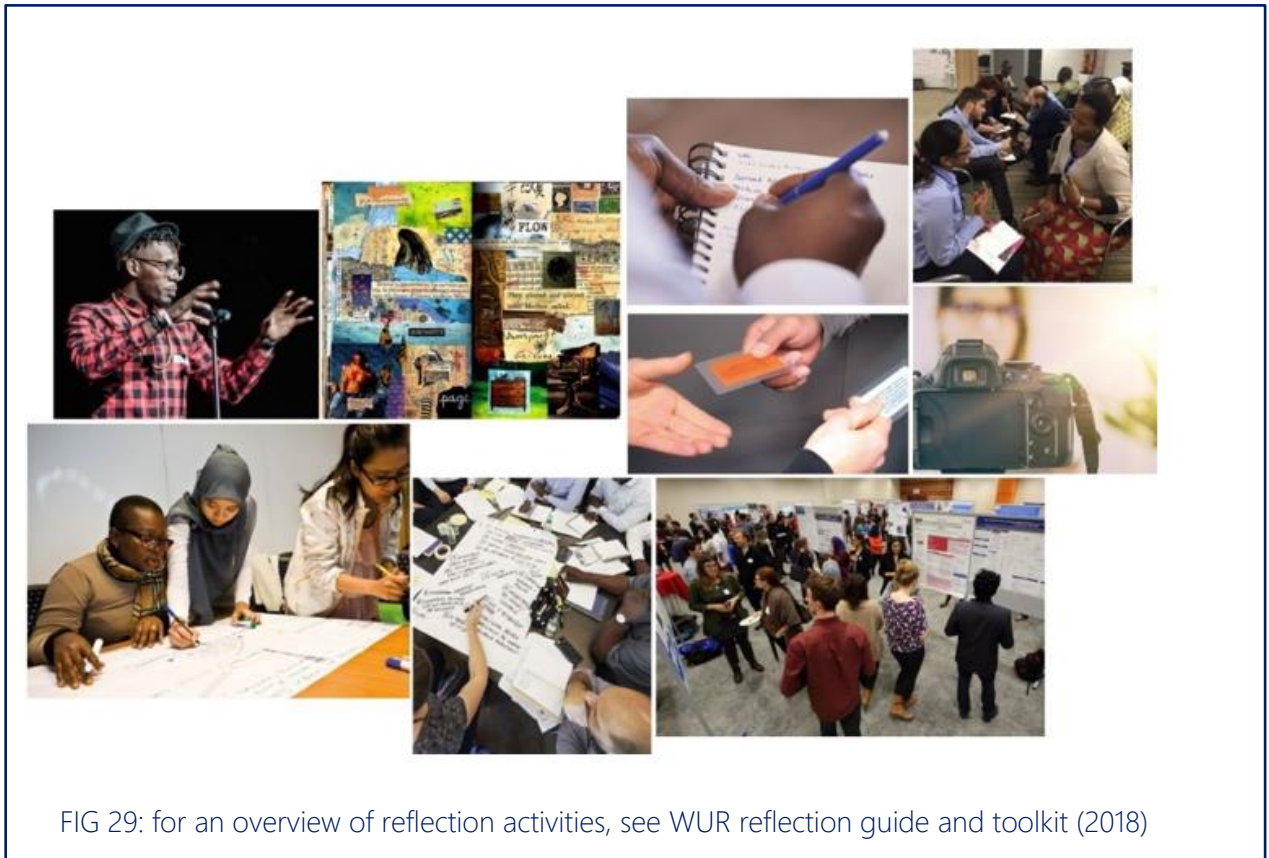
CONNECTED reflection builds bridges between theory, personal reflections, and first-hand experiences.

Without structured, connected reflection, students may fail to bridge the gap between the concrete experience and the abstract issues discussed in class, they may feel frustrated and wonder why they are involved in the community as part of their course work.

CHALLENGING reflection helps posing new questions, is designed to reveal new perspectives, new take aways. Facilitators engage students in challenging conversations and activities in which they consider unfamiliar and often uncomfortable ideas, balancing challenge and support. If reflection is too challenging and adequate support is lacking, students might turn away from what could be

learned or avoid trying new ideas or exploring new perspectives. However, if the reflection is not challenging enough or if the environment is too supportive, students are less likely to leave their comfort zones as well, and, as a result, will not learn and grow.

CONTEXTUALIZED reflection engages learners in activities and with topics that can be related to the experiences they gained and match with their developmental levels and personal contexts. The desired outcomes of the engagement experiences should guide facilitator's choices about the methods used. Should reflection activities take place on campus or at the community site? Should community members participate in the reflection activities or not? Will I rely on written, oral or more creative reflection activities, such as role plays, speech battles, collages or vlogs? Will I organize individual or collective activities?



Ideas for Reflection Practices

Reflection can happen in the classroom, at the community organization, or individually through course assignments. There are a wide range of meaningful reflective practices and strategies that

can be incorporated into CERL, including the frequently used approaches listed below (Regina, & Ferrara, 2017; Farber, 2011).

- **Journals:** Writing in journals is widely used by service-learning programs to promote reflection. They're most meaningful when instructors pose key questions for analysis.
- **Ethnographies:** Students capture their community experience through field notes.
- **Case Studies Papers:** Students analyze an organizational issue and write a case study that identifies a decision that needs to be made.
- **Multimedia Class Presentations:** Students create a video or photo documentary on the community experience.
- **Theory Application Papers:** Students select a major theory covered in the course and analyze its application to the experience in the community.
- **Agency Analysis Papers:** Students identify organizational structure, culture and mission.
- **Presentations to Community Organizations:** Students present work to community organization staff, board members, and participants.
- **Posters** with relevant content.
- **Workshops** with participants from various entities involved in the CERL activities.
- **Speakers:** Invite community members or organization staff to present in class on their issue area.
- **Group Discussion:** Through guided discussion questions, have students critically think about their experiences.
- **Community Events:** Identify community events that students can attend to learn more about issues.
- **Mapping:** Create a visual map that shows how the CERL experience connects to larger issues at the state/national/global level.
- **Videos:** View a video or documentary to elicit discussion about critical issues that relate to their experiences.
- **Letters-to-the Editor:** Students write a letter-to-the-editor or to government officials that address issues important to the community organizations where they are working
- **Creative Projects:** Students make a collage or write a poem or song to express an experience.
- **Blog:** Create a course blog where students can post comments on their experiences.
- **Reflective Reading:** Find articles, poems, stories or songs that relate to the service students are doing and that create discussion questions.

REFLECTION QUESTIONS

How will I integrate reflection activities?

When and how often will reflection take place?

Who will take part?

Who will facilitate the reflection moments?

What reflection model will I rely on?

How will I make sure that reflections are meaningful?

Will I work with written, oral, creative artefacts?

FURTHER READINGS

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EXECUTION

EXECUTING A CERL PROJECT

This **third (re)design module** explores the importance of purposefully designed reflection and coaching strategies and puts forward some considerations for interconnecting teaching and research activities in CERL.

LEARNING GOALS – after this module you will be able to:

- Define characteristics and obstacles for quality CERL processes
- Define the relevance and application possibilities of the GRROW coaching model for CERL
- Integrate elements from the GRROW coaching model into your CERL course
- Make thoughtful choices about instruments and methods for critical reflection
- Make thoughtful choices for interconnecting teaching and research activities in CERL

DELIVERABLES – through the activities of this module you will be able to formulate or design:

- Outline of your CERL coaching and reflection activities.

On the next pages you will find some background information and exercises.

PART ONE – CONNECTING TEACHING AND RESEARCH IN CERL

In this first part we will explore how teaching and research activities can be interconnected. Have a look at the introduction clip on [teaching and research in CERL](#) and read through the [GUIDELINES FOR EXECUTING CERLs](#) before starting with the assignments.

ASSIGNMENT 1 - your CERL feedback loops

CERL is advanced as a meaningful vehicle to enhance cross-interactions between academic cores activities: research and education, outreach activities, local anchoring and valorization strategies. Pedagogy is enhanced as a result of research activities and expertise and – the other way around – is research renewed by engaged teaching activities. Ideally CERLs are both research-driven as well as well as research-promoting: making academic expertise, methods, infrastructure and networks available for tackling societal challenges or research problems through engaged pedagogies that might revealing new research problems, fostering new research partnerships and offering concrete opportunities to explore novel forms of knowledge production.



Could you describe your CERL feedback loops? How are teaching and learning activities making use or reinforcing research outcomes and interactions? In what way are the engagement activities guiding new research and/or a specific educational design and vice versa?

FURTHER READINGS & USEFUL TOOLS:

- [Engaged Departments and Universities](#)
- [Quintuple Helix](#)
- [Healy's quadrant for enhancing teaching-research nexus](#)

PART TWO – COACHING IN CERL



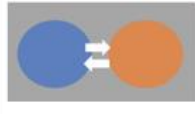

In this second part, let's visualize the CERL process and think of obstacles that might hinder fruitful collaboration and learning and how to anticipate or mitigate them. Before you start with the assignments it might be useful to have a look at the clips on [designing CERL learning paths and CERL dynamics & ethics](#).

ASSIGNMENT 2 – stimulating boundary crossing in CERL

CERLs are a means to shape multidisciplinary, interdisciplinary, and transdisciplinary teaching and research. They stimulate students to look at research problems and societal challenges from a variety of perspectives, learn them to integrate various forms of knowledge and collaborate across disciplinary, institutional, cultural and socio-ecological boundaries. This requires the ability to reconcile multiple forms of problem representation, forms of inquiry, and solution paths through thoughtful integration of theories, methods and results all along the CERL process. This process of boundary crossing entails four mechanisms: (i) IDENTIFICATION of one's own expertise and perspectives, and the expertise and perspectives of other stakeholders involved, (ii) COORDINATING effective collaboration between those different stakeholders, (iii) REFLECTION or learning from each other's perspective, and (iv) TRANSFORMATION or co-creation of new knowledge by combining the different perspectives.

How will Boundary Crossing be integrated and stimulated in your CERL practice?

	BEFORE	DURING	AFTER
STUDENTS			
PARTNERS			
COLLEAGUES			

Visualisation of the learning mechanism	Aim of the learning mechanism	What questions to ask yourself to stimulate the learning mechanism
	<p style="text-align: center;">Identification</p> <p>Gaining insight into complementarity and added value of the different practices around the boundary</p>	<ul style="list-style-type: none"> • What expertise do I have? • What expertise do I lack in the context of the sustainability problem at hand? • Who are the stakeholders? • What is their expertise, stake and perspective? • How do they relate to each other?
	<p style="text-align: center;">Coordination</p> <p>Collaboration to deal with the problem, but geared towards efficiency and working along each other (e.g. task division)</p>	<ul style="list-style-type: none"> • How can I involve the different stakeholders? • How do I approach the different stakeholders? • How can we communicate and collaborate effectively? • What agreements do we make with each other? • What object can I use or develop to facilitate mutual communication
	<p style="text-align: center;">Reflection</p> <p>Learning to see the problem through the eyes of another. Both defining and exchanging perspectives focused on mutual meaning making and connecting different perspectives and expertise.</p>	<ul style="list-style-type: none"> • How do I help other stakeholders understand my perspective? • What can I learn from the perspectives of the other stakeholders involved? • What can we learn from each other?
	<p style="text-align: center;">Transformation</p> <p>Development of new knowledge/practices; an end result that could not have been developed without actual collaboration and integration of perspectives.</p>	<ul style="list-style-type: none"> • What is my vision on the new practice? • How can we combine our knowledge and perspectives into a (innovative, but realistic) solution? • How can I get others enthusiastic for this new practice? • How can I stimulate follow-up to build on the new practice (towards a sustainable new practice)?

FURTHER READINGS & USEFUL TOOLS:

- [Handbook on multi, inter and transdisciplinary teaching](#)
- [Boundary Crossing](#)
- [Belbin Team roles](#)
- [GRROW-coaching](#)
- [Dialogic Leadership](#)

PART THREE – CRITICAL REFLECTION IN CERL

In this third part we will design an appropriate reflection strategy for your CERL project. Watch the introduction clip on [critical reflection in CERL](#) before starting with the assignments.

ASSIGNMENT 3 – your CERL reflection strategy

What strategies and tool are you using for stimulating critical reflection throughout the CERL project? How will you make sure that reflections are meaningful at the personal, academic, civic and professional level? Will you work with written, oral or more creative artefacts? What are the core principles your reflections activities rely on?

	BEFORE	DURING	AFTER
PERSONAL			
ACADEMIC			
PROFESSIONAL			
CIVIC			

FURTHER READINGS & USEFUL TOOLS:

- [KOLB's learning cycle](#)
- [Assignment & activities template](#)
- [WUR reflection activities and tools](#)
- [Reflection models & prompts template](#)

We hope these preparatory assignments have been helpful to articulate opportunities and points of attention to (re)design your CERL strategy. We look forward to share aspirations and reflections in our live session / webinar.

See you then!