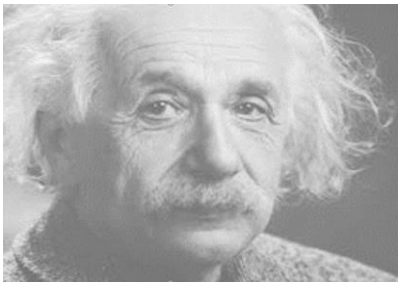
BARCOVE WP 2.1 Catalogue.

Deskresearch: “gained knowledge for wp3”

Introduction

This project “Building an Applied Research facility into COVE” (BARCOVE) aims to develop an innovative and norm-setting model for school-company collaboration around VET.

General speaking helps research if you want to have an answer to something but you don't know the answer yet. Research can be useful because the world is changing rapidly. This world is full of people with a lot of opinions and believes, but if you do research you get facts. You need data and facts if you want to convince clients, then someone can form an opinion. The good news is that everyone is naturally curious, so then you start exploring!



Quote Albert Einstein:
‘I don't have any special talent. I'm just curious.’

BARCOVE¨s definition on applied research:

- Applied research is when research is put to practical use and when practical experience is used for research.
- Applied research is the bridge which is the glue betweenresearchers and performing craftsmen.

This catalogue needed for wp3 contains:

A. Values, Beliefs and attitude of people in relationship to applied research
B. Student skills
C. Teacher skills

A - Values, Beliefs and attitude of people in relationship to applied research

From his study of a Perth-based TAFE institute, Mitchell (2009, p.6) identified internal and external factors for success in innovation. In analyzing a number of case studies, he outlined a range of critical success factors, which included the need for:

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- advanced practice; Mitchell understood that innovation relied on advanced practitioners being able to adapt flexible customized training to suit client expectations
- enduring partnerships, developed over years of interaction
- continuous creativity and the generation of new ideas, in an environment that encourages initiative
- combined knowledge, which can lead to a broader knowledge base for future developments.

In our desk research we found different reasons that on the one hand the industry and on the other hand the educational institutions found it important to participate in applied research.

Investments and participation by industry in applied research is important for these reasons:

- to ensure that the industry have the capacity to translate research findings into productivity gains
- to mobilize that capacity to articulate their research needs and research questions
- to address today's issues with 'short time to impact' studies, fast results is needed for innovation

Investments and participation by education in applied research is important for these reasons:

- Applied research gives room for inquiry-based learning in the curriculum. Students enjoy an inquisitive attitude throughout their lives, with which they can gain knowledge. "Actually, inquiry-based learning and applied research is just being curious about your surroundings," says practor Heidi Kamerling. "As educators we only have to bring the student into that environment. So go out of the classroom!"
- Applied research strengthen the investigative capacity of those directly involved: students, teachers, lecturer-researchers and the business community. By working together in professional learning communities, we learn from and with each other. This contributes to the research and quality culture of the organization.

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This table gives a good overview of all the stakeholders involved in applied research:

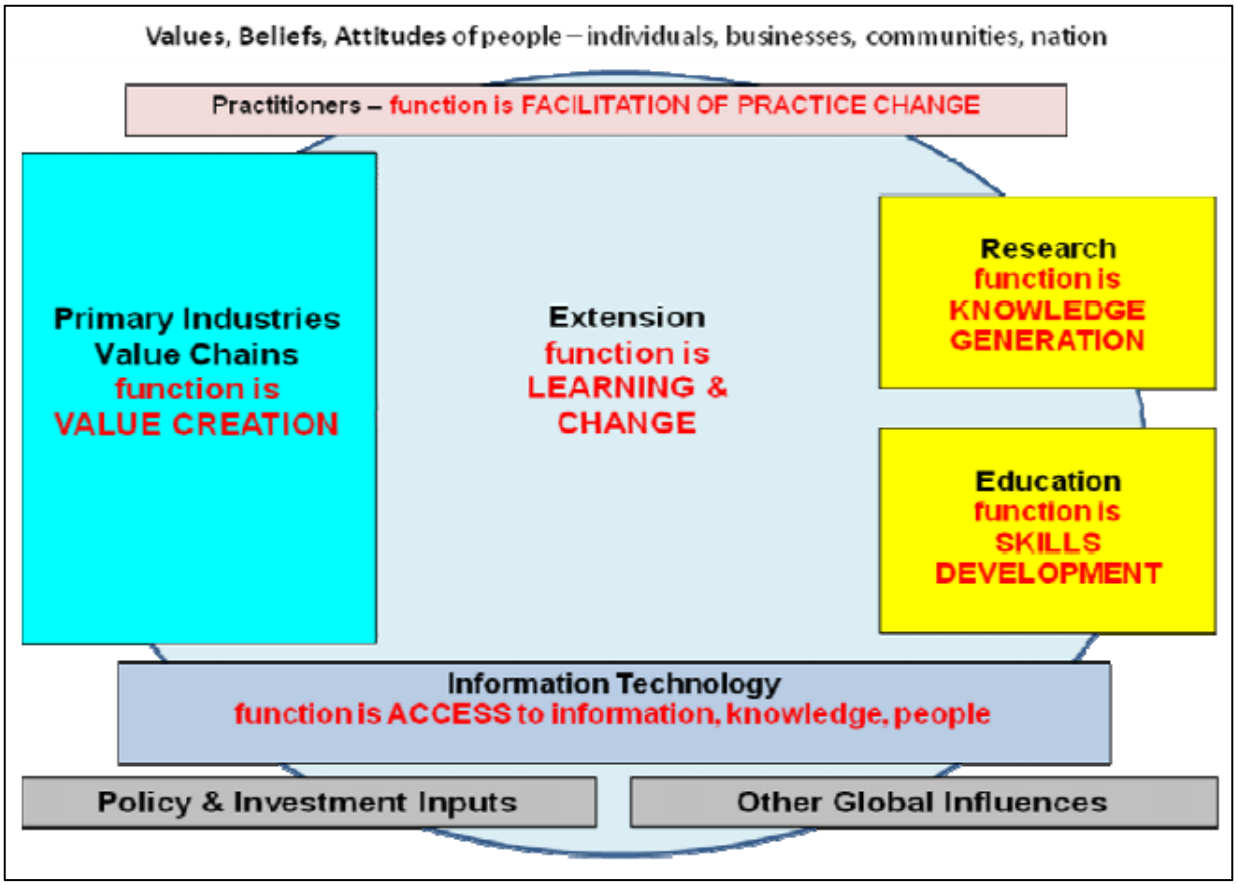

Figure 1: Source: National Primary Industries Research, Development and Extension Framework.

B - Student (and worker) applied research skills

Table 1 gives an overview of the research knowledge and skills with the indicators devided into the affective and psychomotor domain of students.

TABLE 1. Indicators (and associated knowledge and skills) regarding applied research skills for students and workers EQF level 3, 4 and 5.

Indicators **Affective domain**	**Applied research knowledge and skills**
The tendency to want to be critical	Critical attitude towards others. Critical of your own ideas/work. Critical asking questions. Want to critically observe experimental data and plan. Be mindful and remain open. Critical reflection. Check and work neatly. No plagiarism or data twisting.
The tendency to want to understand	Wanting to understand the causes. Gain insight. Understanding matters and understanding connections. Develop broad vision.
The tendency to want to achieve	Having a drive (passion) and being enthusiastic. Driven and have perseverance. Discipline. Purposeful work. Have patience.

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The tendency to want to share	Explaining, convincing and being open to ideas, opinions and findings of others. Interdisciplinary exchange of knowledge and ideas. Strong communication skills and socially skilled. Cooperate. Optimism, calm appearance and strategic insight.
The tendency to want to innovate	Inquisitive attitude. Originality, creativity, determining one's own direction and unconventional behavior. Developing new things and new things articulate ideas. Associative thinking and thinking outside the box. Far-sighted and innovative look.
The tendency to want to know	Curiosity and eagerness to learn. Intrinsic motivation. New things and hear ideas. Broad interest.
Indicators Psychomotor domain	**Research knowledge and skills**
Research methods	1. being able to write a research question, 2. carrying out research methods, 3. describing the pros and cons of the study, 4. discussing the reason for the investigation, 5. being able to understand and weigh dilemmas.
Collecting information	Being able to identify, use and acknowledge the different Resources.
Students can critical analysis and information revised	Being able to look critically at your own research results and also the critically review research reports from others. All in all, we've got it Here about the possibility of critical thinking.
Data processing	Using the appropriate analysis tools, performing an analysis and present (statistical) finds

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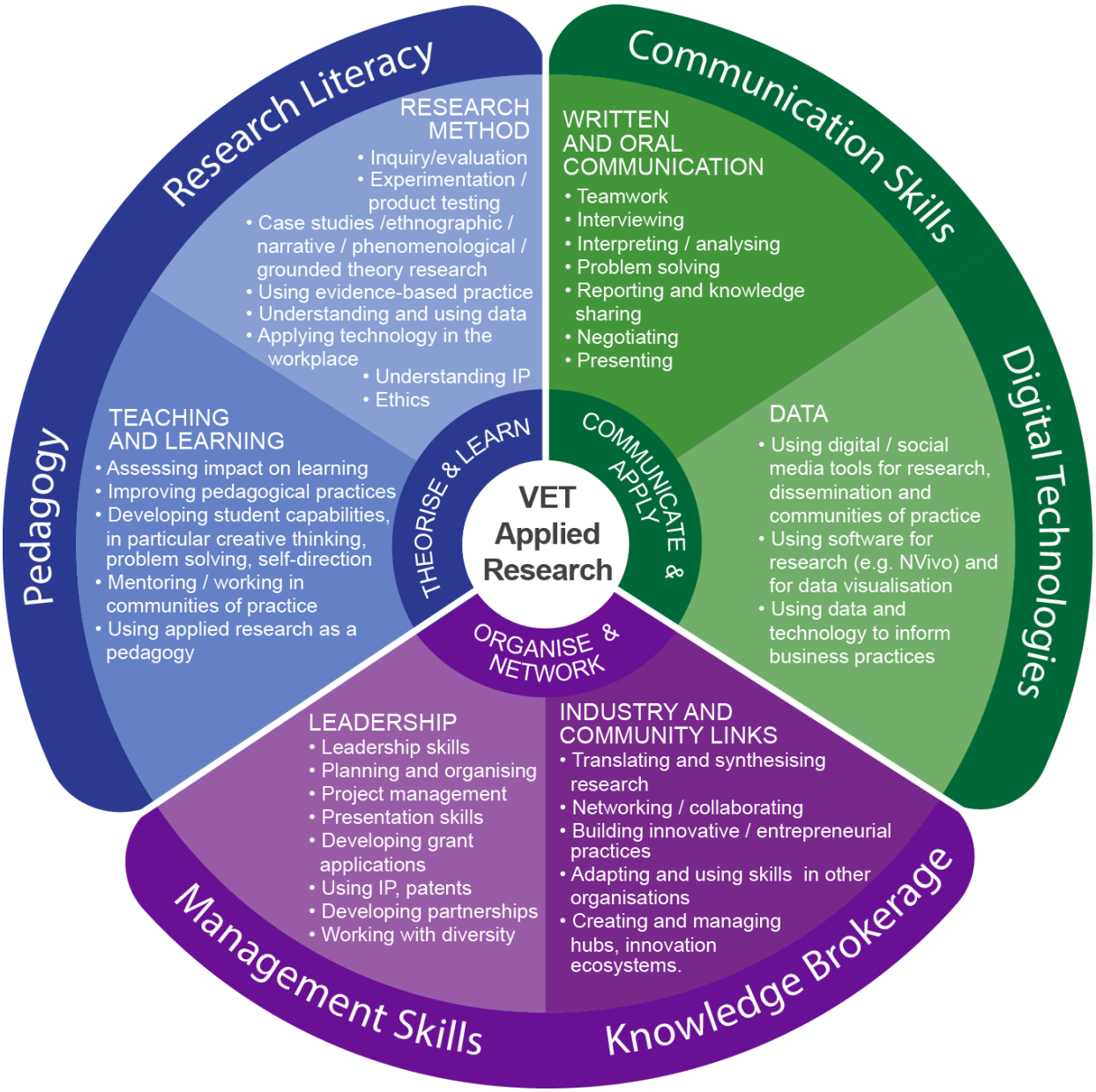
C – Teacher and supervisor skills for applied research

Figure 2 illustrates the developmental framework that is being created as a tool for VET educators and other professionals. This tool has been used in the VET applied research group of the National Centre for Vocational Education Research in Australia. The tool helped them to decide whether, or the extent to which teachers or supervisors are 'applied research literate', and whether they or their team members might need additional skills. The skills were identified from the literature on innovation and research skills, from other applied research frameworks, and by mapping these against the competencies listed in the Training and Assessment Package and other training packages. The framework offers ideas for further professional development opportunities for the VET workforce based on current standards, as well as capabilities for the future.

Figure 2: VET applied research – a developmental framework



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Sources:

- *Interviews with teachers, students and companies throughout Spain, the Netherlands, Denmark and Australia.*
- *Documents from the institutes involved in BARCOVE*
- *Several articles on applied research such as:*

  VET applied research: driving VET's role in the innovation system (ncver.edu.au)

  ROCMN_Ondeerzoeksvaardigheden_Rapport(digitaal).pdf (page 4)

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