

Euregio Rhein-Waal toolbox

Toolbox for analysing and training entrepreneurship education in Higher Education Institutes



Text

Loredana Orhei (HAN) Lisa Ploum (WUR) Markus Schauberger (UDE)

Editors

Anne-Marie Haanstra

Design

Bureau Ketel

Print

Drukkerij Efficiënt

Higher Education Institutes

Hogeschool van Arnhem en Nijmegen (HAN) Universitat Duisburg-Essen (UDE) Wageningen University and Research centre (WUR)

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Why this toolbox

Entrepreneurship is nowadays seen as one of the vital factors in stimulating economic growth. There is a positive correlation between entrepreneurship and economic growth, but also innovation, technological change and creation of employability correlate positively with entrepreneurship. Furthermore, research supports that experiencebased learning, on which this toolbox is based, has a positive influence on the learning curve (see figure 1). The role of education to foster entrepreneurship is recognized by European policy makers and therefore entrepreneurship education is implemented at Higher Education Institutes (HEIs) throughout the European Union.

Nonetheless, there is no standardized entrepreneurship program which is implemented at all higher education institutes. The several entrepreneurship education programs offered at different HEIs differ in nature and structure. One of the problems that arise is that it is not clear what kind of entrepreneurship education truly fosters entrepreneurship and therefore stimulates the performance of these higher education institutes. Furthermore, it is unclear how entrepreneurial intentions. entrepreneurial self-efficacy and competencies develop over longer periods of time in education-based environments.

Understanding and illustrating how HEIs in the Euregio Rhine-Waal can become more entrepreneurial and measuring the level of the entrepreneurial competence of students, were the main goals of work package 3 of the Interreg IV A program Germany - the Netherlands 2012-2015.

This Entrepreneurship education toolbox is based on the Knowledge Alliance research findings and was further developed by using the feedback of field experts and was tested by 5 HEIs in Germany and the Netherlands (universities of applied sciences as well as universities). All 6 partners have contributed by sharing their field observations, knowledge, experience and advice.

The toolbox first provides a set of tools to analyse the current state of the entrepreneurship education program at a specific HEI. This is called the benchmark tool and supports HEIs in analysing the current state of the entrepreneurship education program, finding out strong and weak points and how to learn from other best practices. This tool can be found under the header 'Benchmark tool'. Next, a set of tools to measure entrepreneurial competence amongst students is provided by the 'Monitoring tool'. These tools can be used to assess the entrepreneurial competence levels of students and provides insights in how to increase these competence levels. If you are interested in learning more about the Euregio Rhine-Waal and a particular tool, you are welcome to contact Euregio via www.knowledgealliance.eu and take a look at the 'About Euregio' section in this brochure.

The research team of the knowledge alliance



Figure 1: learning curve

How to use this toolbox

This toolbox is presented as a recipe book. Although we tried to order the tools in a logic way, it is not necessary to follow the strict order in which the tools are presented. It could be the case that one is only interested in the monitoring of entrepreneurial competence part and not at all in the institutional benchmark part. You are free to use the tools to your own needs.

'Why entrepreneurship education is important' is meant as an appetizer to show you that putting some extra effort in developing an entrepreneurial education program may really pay off.

The Benchmark tool is primarily intended for education program directors at higher education institutes, although they can also be used by the head of the centre for entrepreneurship and by teachers involved in entrepreneurship education. This tool provides a step-by-step support for HEIs in analyzing the current state of their entrepreneurship education program.

The part '6 dimensions of entrepreneurship education' is intended to help you analyse the education program by making use of 6 important dimensions of entrepreneurship education. It provides you with an overview of how well your HEI performs on each dimension.

'Best practice examples' helps you to learn from good practices at other HEIs. Translate your company's ambitions and the challenges your company faces into what it is that you actually need from your network.

The Monitoring tool provides a step-by-step approach for lecturers to assess the current level of entrepreneurial competence of the students.

Analysis of student, learning environment and learning activities can be used to take a critical look at your own situation and find out which elements you need to improve. It provides a set of questions and schemes that can be helpful in this process.

'H.O.S.T. tool' gives you practical insights in how to kick-start the innovation process within your HEI.

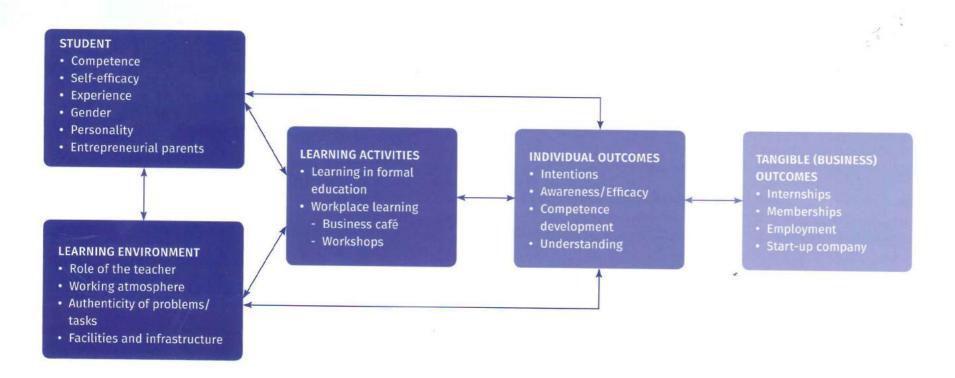
'Training Entrepreneurial Behaviour' gives useful hands-on guidelines for improving the entrepreneurial competence at your HEI.

Furthermore you can find practical links and background information on the Knowledge Alliance Rhine-Waal in this toolbox.

Why entrepreneurship education is important

Entrepreneurship is nowadays seen as one of the vital factors in stimulating economic growth. The role of higher education in entrepreneurship goes far beyond the delivery of knowledge to participating partners and industrial alliances. With high-tech and high growth enterprises increasingly becoming a focus of entrepreneurship-related public policies, HEI are seen as an active component of the innovation policies of the European Union. A central feature of the transition towards an entrepreneurial HEI is the development of an entrepreneurship education program and monitoring of entrepreneurial competencies.

The model below gives an overview of the elements of entrepreneurship education which can support managers and/or teachers in their decision making for designing specific interventions aimed at strengthening the entrepreneurial mindset of students. The model is developed by researchers in the field of competence development at Wageningen UR.







Benchmark tool

The input required for development and maintainance of a wellfunctioning entrepreneurship program is: strategy, resources and institutional infrastructure. The throughput contains the following dimensions: education, outreach and development. When these inputs and processes are functioning well, the outputs (i.e. performance) are expected to be good as well. So, there are six dimensions of entrepreneurship education which affect the performance of an entrepreneurship education program (based on Blok et al., 2014).

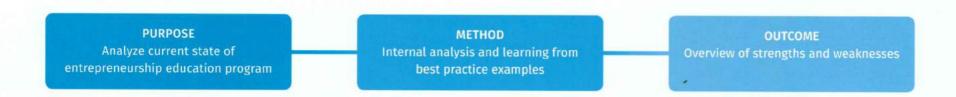
Based in the dimensions, scores from 1 to 5 can be calculated. The entrepreneurship education matrix shows what these scores imply (page 8).

An overview of these calculated scores in the Knowledge Alliance Rhine-Waal can be found under the header 'Results from Euregio' (page 9).

Also best practice examples are given on page 10.

Principle	survey – interview or discussion
Target group	managers – program directors - teachers
Estimated time consumption	60-90 minutes
Materials	online survey or paper survey; survey questions can be found in the benchmark report on www.knowledgealliance.eu . www.wageningenur.nl - management studies group

Benchmarking is, first and foremost, a learning process structured to enable those engaging in the process to compare their services/activities/products in order to identify their comparative strengths and weaknesses as a basis for self-improvement and/or self-regulation'



6 dimensions of entrepreneurship education

STRATEGY

Goals

- mission statement
- strategic plan

Policies

- departments have entrepreneurship plan
- clearly written entrepreneurship education plans
- attract employees from business

Embeddedness

- strategic responsibility
- high level managers

RESOURCES

Allocation

- sufficient budget

Types of sources

- own activities
- institution business
- governmental funds
- benefactors

Self-generated income

- publication revenues
- fees seminars

INFRASTRUCTURE

Approach

- chairgroup
- incubator
- meeting point
- technology transfer office

Research

 peer reviewed studies

Level of cross-disciplines

- teachers
- students
- courses

EDUCATION

Education scope

- types of education
- student volume

Education set-up

- didactic method
- guest lectures
- contact with private companies

OUTREACH

External stakeholders

- governments
- foundations
- entrepreneurs

Community

- open events
- entrepreneurial centre
- activities in schools

Alumni

- keeping contact

University-industry linkages

- joint research
- spin-off

DEVELOPMENT

User-driven improvement

- self-evaluation teacher
- peer feedback
- student evaluation

Evaluation of goals

- student career
- stakeholder needs - goals

Investment in human resources

- encouragement
- training the trainer

PERFORMANCE INDICATORS

ENTREPRENEURIAL STUDENTS
THROUGH EDUCATION

KNOWLEDGE TRANSFER

ENTREPRENEURIAL STUDENTS
THROUGH PRACTICE

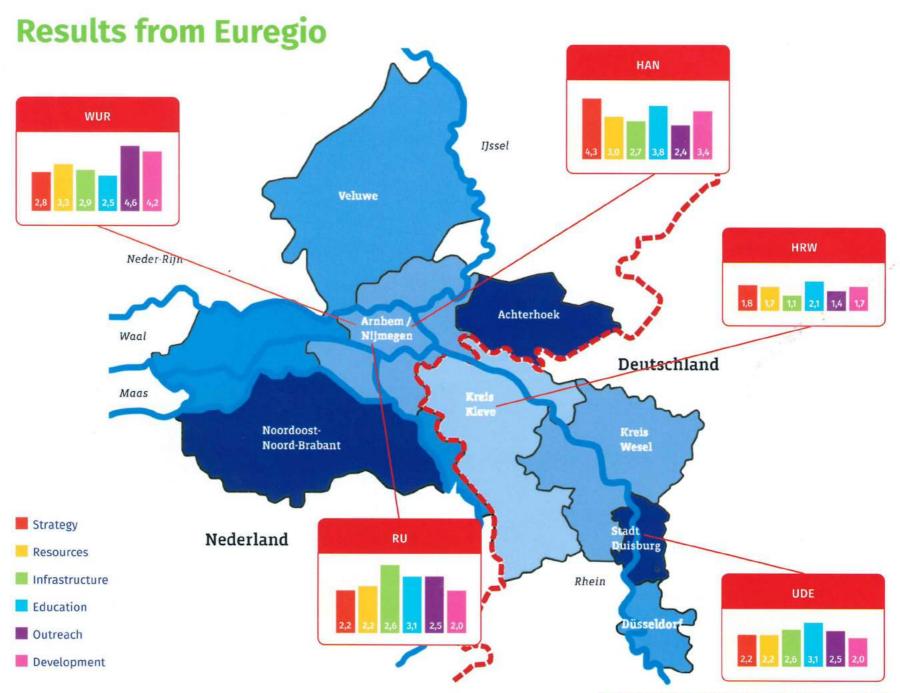
Analyze your strengths and weaknesses

Go to www.knowledgealliance.eu and download the form 'questions benchmark' and fill in the framework accordingly.

STRATEGY	RESOURCES	INFRASTRUCTURE	EDUCATION	OUTREACH	DEVELOPMENT
* Goals	* Allocation	* Approach	* Education scope	* External stakeholders	* User - driven improvement
	* Types of sources	-	-		
* Policies	-	- * Research	* Education set-up -	* Community -	* Evaluation of goals
	* Self-generated income	* Level of cross-disciplines	-	- * Alumni -	* Investment in human resources
* Embeddedness		- -		* University- industry linkages -	

Entrepreneurship education matrix

Average	Score 1	2 3	4 5
STRATEGY	Entrepreneurship is not embedded in the mission statement and vision of the HEI. There are no entrepreneurial policies. Managers do not act as champions of entrepreneurship.	Entrepreneurship is to some extent embedded in the mission statement and vision of the HEI. There are some entrepreneurial policies. Managers do not act as champions of entrepreneurship.	Entrepreneurship is fully embedded in the mission and vision of the HEI. All departments have policies related to entrepreneurship and managers act as champions of entrepreneurship.
RESOURCES	Funding for the entrepreneurship program is not sufficient. There is only one source for funding. The HEI is not involved in self-generating income.	Funding for the entrepreneurship education program is sufficient, but does not leave room for new developments. There are at least two sources of income.	There is more than enough funding, also for developing new ideas and initiatives. The HEI has different sources of income and is involved in self-generating income.
INFRA- STRUCTURE	There is no chairgroup for entrepreneurship, no technology transfer office or centre for entrepreneurship. There are no cross-disciplinary structures and no peer reviewed articles on entrepreneurship.	There is a technology transfer office, but no chairgroup or centre for entrepreneurship. There are some cross-disciplinary structures, but not at all levels. Between 1 and 6 peer reviewed articles have been published in the last academic year.	There is a chairgroup, technology transfer office and centre for entrepreneurship. Cross-disciplinary structures cover all levels. More than 7 peer reviewed papers have been published in the last academic year.
EDUCATION	There is no entrepreneurship education program. Students are not able to attend any lectures in entrepreneurship.	There are some lectures about entrepreneurship. Few students attend these classes and the teaching method is merely theoretical.	There are multiple forms of entrepreneurship education. The number of attends per lecture is > 25. Teaching is experimental and real-life entrepreneurial problems are the core of education.
OUTREACH	There is some connection with stakeholders, however, there is no structural co-operation with the professional field. The HEI has no intellectual property and the involvement of the community is limited. The potential input of alumni is unacknowledged.	Stakeholders are involved, but students do not participate in extracurricular entrepreneurial activities. There is some general involvement of the community, however, this is not specifically aimed at entrepreneurs.	Stakeholders take actively part in various ways in the program. Alumni are used as a source of input for the program. Students take part in extracurricular entrepreneurial activities. The community is involved in the organization of training and events.
DEVELOPMENT	There is no kind of evaluation method for entrepreneurship education. Students' careers are not monitored as well as an evaluation of stakeholders' needs. Teachers are not trained or encouraged to teach more entrepreneurially.	Only student-evaluation reports are used to improve entrepreneurship education. The needs of stakeholders are monitored but there is no follow-up on entrepreneurship goals and strategies. Teachers are encouraged to some extent to improve their entrepreneurial skills, but there is no training offered.	More than one evaluation method is used to evaluate entrepreneurship education. The effect of education on the student's career is monitored. Goals and strategies are frequently assessed and stakeholders' needs are monitored as well. Teachers are encouraged and trained to perform better. Recognition of achievements takes place.



Best practice examples 'Quotes'

"This minor takes up approximately half the time available in a regular two-year science master. Students study concepts and theories from organization studies, business administration and entrepreneurship. Students learn to understand and analyze problems of organizations in an environment affected by science and technology. Finally, students learn how to communicate with people with different backgrounds and interests. This critically complements the science master and will make students especially attractive for jobs on the crossroads between science and business, either in research, business or government settings."

For more best practice examples: "Enhancing entrepreneurship education programs in Germany and the Netherlands." A benchmark study in the Euregio Rhein-Waal. Available at www.knowledgealliance.eu.

"In our course, students have to deal with all the problems which could also appear in a real life setting. They have to come up with their own innovative idea and write a business plan and learn how to raise funds. Failure or setbacks similar to real problems are obstacles they have to overcome in the course."

"Stimulating entrepreneurship has been an aspect for a long time now, to which we give a lot of attention and in which we have established a good reputation in the region. It is therefore one of our eight main focus points" [...] "Besides the Centre for Entrepreneurship we have a project called Student Companies. Within various educational programs it is a mandatory part and is based on the principles of stimulating, challenging and encouraging an entrepreneurial mindset and as a minimum outcome entrepreneurial behaviour is demanded. It is a form of action-oriented (challenging) entrepreneurship education based by the principle of 'learning by doing'."



Monitoring tool

The primary goal of this monitoring tool is to support teachers/managers in their decision making for designing specific interventions aimed at strengthening entrepreneurship education programs.

Monitoring on an individual student level enables higher education institutes to see how entrepreneurial competencies develop over time. The development of the student and the input of the student can be used to improve and strengthen the position of entrepreneurship in the education program and within the institution. The monitoring tool is also used as an input for the Training Entrepreneurial Behaviour (TEB) on page 17. The student's input, the learning activities, the learning environment and student intentions are measured within this tool (based on previous research by WUR).

Principle	survey – competence profiles
Target group	students
Useful for	managers – program directors - teachers
Estimated time consumption	60-90 minutes
Materials	online survey; survey questions can be found in the monitoring report on www.knowledgealliance.eu.



Inputs for monitoring students' entrepreneurial behavior

STUDENT

Competence

- level
- assessment

Personal characteristics

- gender
- entrepreneurial parents

Experience

- own company
- entrepreneurial self-efficacy

LEARNING ACTIVITIES

Types

- role plays
- student companies
- debates
- etc.

Learning by doing

- workplaces learning
- peer teaching
- guest lectures
- networking
- etc.

LEARNING ENVIROMENT

Teacher

- supportive
- encouragement
- make mistakes
- atmosphere

Student

- creativity
- emotional well-being

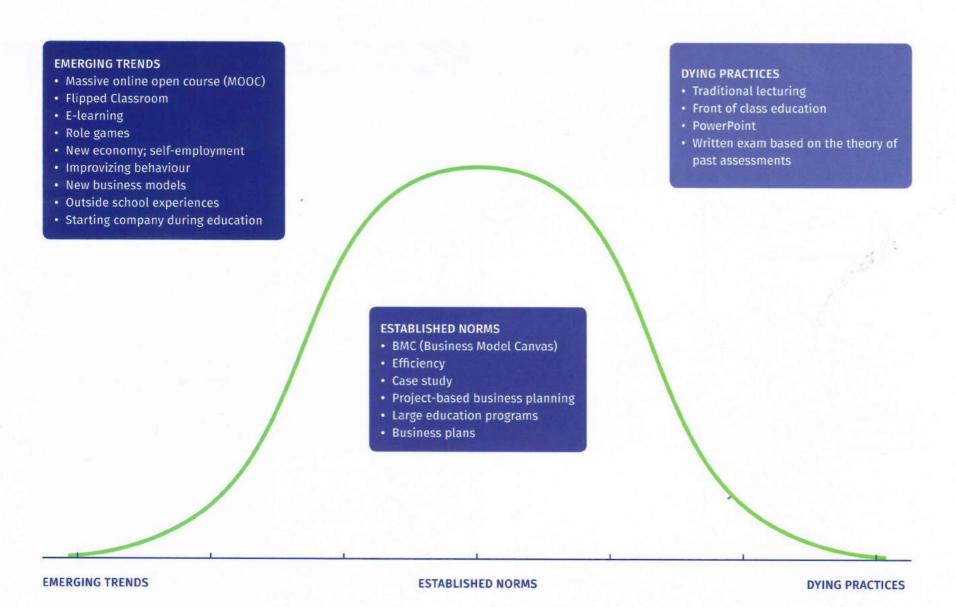
INTENTION TO BECOME AN ENTREPRENEUR

Analyse students' entrepreneurial behaviour

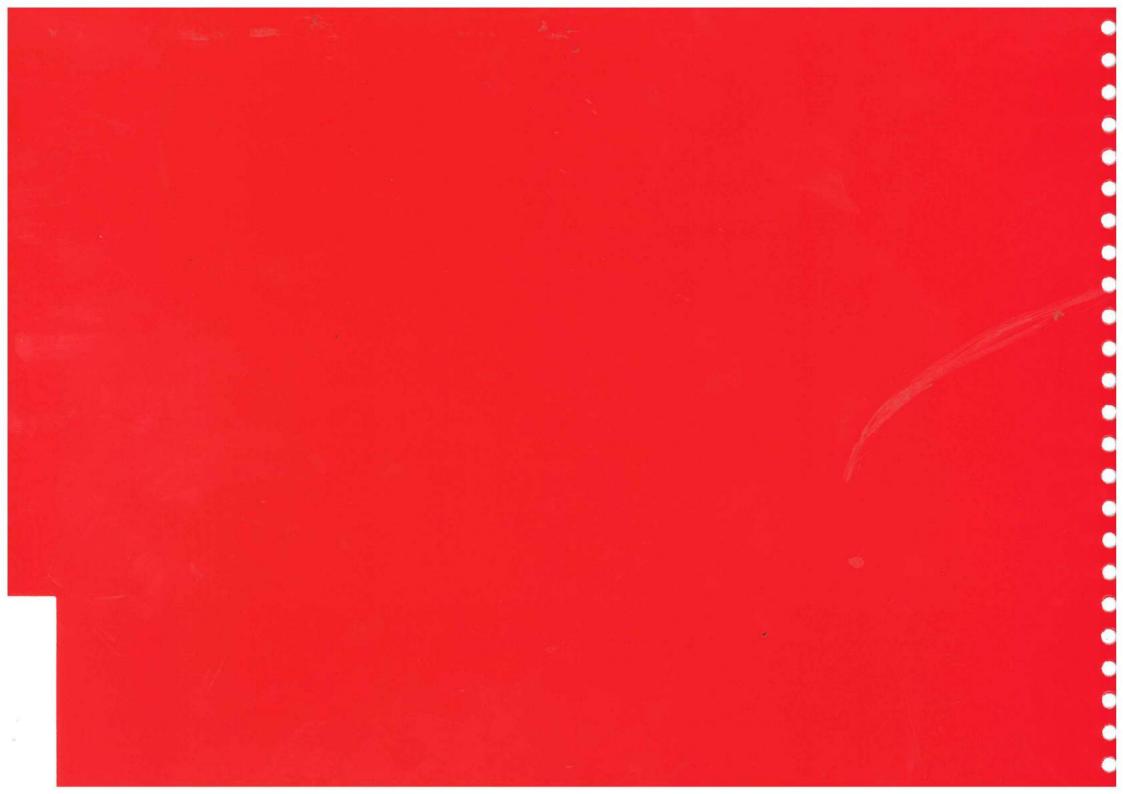
Go to www.knowledgealliance.eu and download the form 'questions benchmark' and fill in the framework accordingly.

STUDENT	LEARNING ACTIVITIES	LEARNING ENVIROMENT	INTENTION
* Competence	* Types	* Teacher	* Attitude
-	-		•
			•
	~		* Social
* Personal characteristics			-
-			- /
	* Learning by doing	- 15-5	Care And Care
111111111111111111111111111111111111111	•		
	-	* Student	* Perceived behavioral control
* Experience			
-	-		
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Trends in Entrepreneurship education







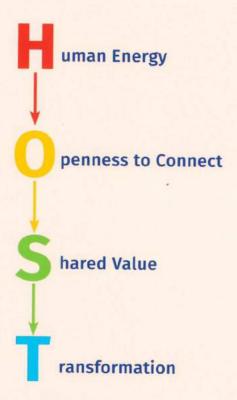
H.O.S.T. tool

Learning by doing – embracing the process – is a must have mindset in the exponentially changing society we live in. Educational institutes need to keep up with this change. With the H.O.S.T tool educators and educational managers can kick start their entrepreneurial mindset. H.O.S.T is an innovation method that contains holistic facilitation and training techniques – incl. applied improvisation – to unlock Human energy, Openness to connect and Shared value, in order to Transform us as a person, our teams, our business or organisational culture and even societies. It transforms us to connect beyond our boundaries, which consist of 'internal blocks' (fear, scepticism and judgement) and more explicit 'external blocks' (organisation walls, national borders, lacking knowledge/skills/networks).

Principle	professional training - exercises
Target group	teachers
Useful for	teachers
Estimated time consumption	2 hours
Materials	H.O.S.T. training www.knowledgealliance.eu for brochure

PURPOSE of the module is to develop kick start innovative thinking to enhance the entrepreneurial mindset. METHOD of the training varies between: improvisation techniques, role plays, games, reflecting, skill training and coaching. OUTCOME of the training is a more entrepreneurial (i.e. open, creative, innovative) mindset in which internal blockages are no longer boundaries which cannot be overcome.

H.O.S.T. method



Human Energy: failing forward - making mistakes is okay

→ Metro game; improvization technique in which mistakes are celebrated

Openness to Connect: connect beyond your internal barriers

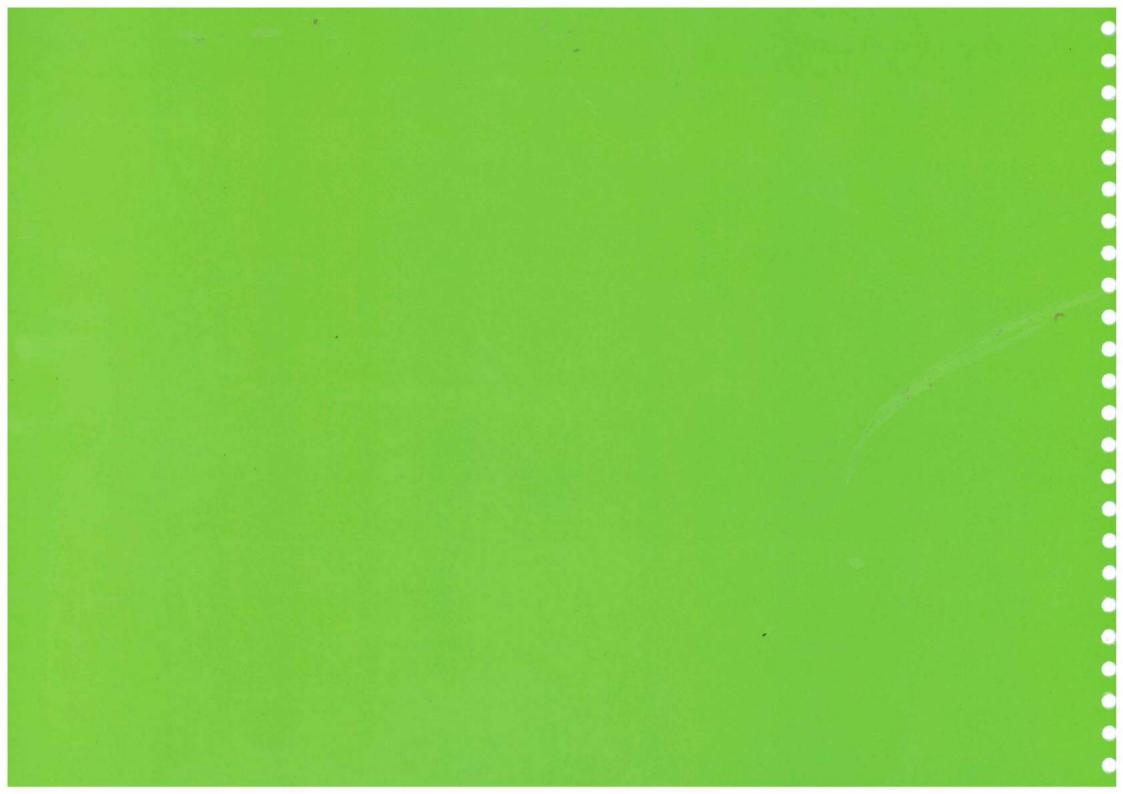
→ Name game; improvization technique to introduce yourself with an alliteration of your name

Shared Value: build your network - dare to ask

→ Network game 'how can I help you'; ask others how you can help them with their problems

Transformation: output of the exercises – personal development and development of attitudes, new skills and knowledge (ASK)





Training Entrepreneurial Behaviour (TEB) tool

By following the idea of entrepreneurial behaviour as a competence, the TEB training is developed to support the attitude/behaviour aspect of the Entrepreneurial Behaviour Competence and the creation of the professional product (investment ready business plan). The training helps the students, from a mindset perspective, to become more entrepreneurial and to discover their own capabilities to become an entrepreneur. The training is also unique from two other stand points: it measures development, rather than results (reflecting log book) and requires a different behaviour and role from the educators. This role is a coaching and guiding role, rather than an educating one. The model is developed by researchers in the field of entrepreneurship development at HAN University of Applied Sciences.

Principle	educational training- exercises
Target group	students
Useful for	students - teachers
Estimated time consumption	70 contact hours
Materials	TEB training www.knowledgealliance.eu for brochure

PURPOSE

of the module is to develop enterprizing behaviour of young professionals as a competence, by focusing on individual's attitude and mindset.

METHOD

of the training varies between: gyroscopic management, improvization techniques, role plays, games, reflecting, skill training and coaching.

OUTCOME

or end product of the module is a portfolio containing a reflection tog-book and the competence profile.

The training follows five themes: listening, awareness, accepting, advancing and adapting, each containing different topics and types of activities, focusing on attitude, behaviour and to a lesser extent skills. The five themes are also the five stages that students experience in their development of entrepreneurial behaviour. The training will support the introduction of the students to the program, the development of the business model and the business plan during the 12 weeks.

The Entrepreneurial Behaviour Competence (E.B.C.) consists of five different and interconnected competences: functional, social, cognitive, psychological and generic. The possession of this competence can result (or show) in pro-actively finding ideas, generating resources; designing and implementing a strategic renewal or innovation within an existing organization, or a new venture creation with the aim to create value. Every time an individual uses or obtains new knowledge, he or she is using their cognitive competence (knowledge and know-how). If he/she implements a project plan, he or she is making use of their functional competence (skills and abilities). When he/she starts something new, he/she will make use of their social competence (attitude). If the individual is driven to finish a task that he or she has begun, he or she is using their psychological competence (motivation). Every time he/ she will take decisions, the individual will make use of their generic competence. Although all these parts of the Entrepreneurial Behaviour Competence are competences themselves, each of them requires different attention when developing them.

LISTEN

Listening with your eyes and seeing with your ears!

ADVANCE
Practise as the worst
and act like the
best!

WARE

If you do what you always did, you will get what you always got!

ACCEPT
Feeling for dealing
starts with dealing
with own feelings!

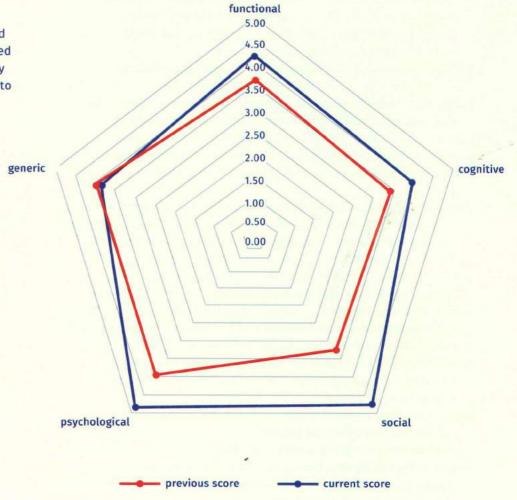
ADAPT

Don't try to motivate people, just try to reward their motives!

Output of the TEB-training: an individual Entrepreneurial Behaviour Competence (EBC) profile

After the TEB-training is completed, students receive their own EBC profiles in which they can see how their competencies have developed over time. A score between 1 and 2 means they are novice. An advanced beginner scores between 2 and 3. A score between 3 and 4 means they are competent. The competence levels of the student are considered to be proficient between a score from 4 to 5.

Aspects of the competence	Previous score	Current score	Group score	Your level current score
Functional competence	3.73	4.2	4.35	Proficient
Cognitive competence	3.45	4.0	4.2	Competent
Social competence	3.31	4.8	4.21	Proficient
Psychological competence	3.94	4.82	4.19	Proficient
Generic competence	4.0	3.73	4.16	Competent



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Practical links

Euregio Rhein Waal - www.euregio.org

HAN University of Applied Sciences - www.han.nl

Interreg Deutschland-Nederland - www.deutschland-nederland.eu

Knowledge Activator - www.knowledgeactivator.com

Knowledge Alliance Rhein-Waal - www.knowledgealliance.eu

Radboud University - www.ru.nl

Rhein-Waal University of Applied Sciences - www.hochschule-rhein-waal.de

Technical University Eindhoven - www.tue.nl

University of Duisburg-Essen - www.uni-due.de

Wageningen University and Research centre - www.wageningenur.nl

About Euregio Rhein-Waal

The Euregio Rhine-Waal sees itself as representing the interests of the entire border region. They therefore present the interests of the border region to Dutch, German and European institutions and bodies, in order to permanently improve accessibility to services. Interests are represented in all socially relevant areas, from commerce to infrastructure, as well as education and cultural affairs.

The Euregio Rhine-Waal has the role of a regional management for the INTERREG IV A-Program Germany-Netherlands. She is responsible for advising applicants and assessing projects. In addition, the joint INTERREG secretariat is seated in the Euregio Rhine-Waal. The secretariat conducts the implementation of the INTERREG program from the coast of the North sea to the Lower Rhine. It supports the Ministry of Commerce of the federal state of North Rhine-Westphalia with governing the assistance program.

Knowledge Alliance Rhine-Waal

The purpose of the Knowledge Alliance Rhine-Waal is the economic stimulus and growth in the Euregio Rhine-Waal. Sharing knowledge and cross-border cooperation between companies, scientific, research institutions and governments contribute to the strategic development. The area around the Rhine and Waal is a powerful economic region. On both sides of the German-Dutch border entrepreneurs, universities, colleges and research institutes are working together on numerous innovations. Young talent is trained to shape the society and economy of the future. However, the potential is not yet fully exploited. At the border of two strong European economies, the conditions for innovative growth and promising new business exist. Therefore, a number of parties are working together by using cross-border chances and opportunities for growing business.

