REBUS - REady for BUSiness

Integrating and validating practical entrepreneurship skills in engineering and ICT studies

REBUS Transnational research report

Deliverable 1.3

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1. PRELIMINARY REMARKS

The paper on hand is a synopsis of the master thesis developed in the University of Duisburg Essen. It puts its focus on the first two aspects of the stocktaking work package, the desk research carried out by the partners in the first period and the extensive online survey.

The third part of the stocktaking consisted of the partner interviews that are attached in deliverable 1.2.

The research design including the desk research requirements, the online questionnaire and the interview questions form deliverable 1.1.

The master thesis was written in German language and will be accessible in the restricted partner area after the evaluation in early 2018.

2. PART 1: DESK RESEARCH

1. Formation of criteria

At this point, the 10 most important criteria, summarised for all desk researches and countries, are to be reproduced precisely and shortly:

Criterion 1: Acceptance of Entrepreneurship

Entrepreneurship is accepted, discussed and discussed in every country. Statistical surveys are also available in all countries, mostly through state institutes.

Criterion 2: Interest representative and supporter

The majority of stakeholders are from domestic and international chambers of commerce. Assistance is provided to most countries by national agencies and by the United States Agency for International Development (USAID). Little to no educational demand for entrepreneurship comes from the economic sector

Criterion 3: Competences

Various competences are named which play an important role in the context of entrepreneurship. The most common one is Teamwork.

Criterion 4: Programs for Entrepreneurship Education

There are educational programs in the partner countries for entrepreneurship, but only a few take place outside of higher education. Within the field of higher education, the bachelor's and master's degree programs are very diverse, and are usually conducted in conjunction with management or business administration courses.

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Criterion 5: Partnerships and cooperation for Entrepreneurship Education

There are many cooperation programmes on an international level. Erasmus is most frequently mentioned as an example. Also with the business sector there is a versatile cooperation between universities and enterprises. However, there are very few or no third-party (Entrepreneurship) education courses in higher education.

Criterion 6: Learning Technologies in Higher Education

A Learning Management System (LMS) or Moodle is used in almost all universities. Blended learning is also applied in some universities, if a correct basic understanding of the terminology can be given by the partner countries.

Criterion 7: Demand for learning technologies

There is a high demand for (modern) learning technologies in many countries and universities. These are most frequently required by the students.

Criterion 8: Practice orientation and practice integration at universities

The demand for the integration of practice into theoretical theory is very widespread, both by students and by some representatives of the economy. Practice orientation and practice integration by external, usually experts from the business or entrepreneurs, is widespread. These act as guest lecturers. Completing internships with companies and companies is also a popular and common method for collecting practical experience.

Criterion 9: Recognition and validation of (entrepreneurial) skills and competencies:

The recognition of abilities and competencies in the field of Entrepreneurship generally takes place without exception in universities. There is no information on the validation of entrepreneurial skills. Partner countries consider the validation of entrepreneurial skills and skills as very important for the educational institutions as well as for the labour market. However, precise information can not be given.

Criterion 10: Validation systems

In the partner countries there are different institutes or organizations which deal with the validation of informal and non-formal education. There is no information on IT-based validation systems. In connection with the validation systems, national qualifications frameworks (NQFs) are mentioned in the researched countries.

2. Conclusion

Looking at the desk researches of the individual partner countries, the first thing to notice is that entrepreneurship is a well-known and discussed concept, but is also a concept that seems to pay little attention. The fact that various strategies and systems of the countries are not well implemented to increase the degree of awareness of entrepreneurship entails potential for the REBUS project. This is because, in the case of a successful and successful implementation of the project, such strategies can be supported and the partial negative picture of this implementation can be put into a positive light.

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Another important finding is that domestic and foreign chambers of trade represent the most important representatives of the interests of entrepreneurship, and also, in some cases very different, ministries in the countries show great interest. In this field it is certainly a question of intensifying this cooperation. The Desk Researches also show that efforts by the Chambers of Commerce to develop and establish entrepreneurship programs at universities are often deficient.

It is also striking that most courses offered by the universities are generally offered by economics faculties. The assumption, admittedly, suggests that these programs are increasingly used by students of economics or closely related subjects. Sooner or later, such offers should be open to all disciplines, as entrepreneurship should play an important role in all areas.

Undoubtedly positive is the realization that the academic landscape of all partner countries is trying to work closely with the economic sector. Since, according to the countries, this partnership can be improved in parts, the cooperation should be further strengthened. On the one hand, the partner countries have a strong bond with business enterprises, but on the other hand, they complain about the fact that various offers are rarely used or of flawless quality. This applies in particular to the inclusion of experts from industry in the teaching of higher education institutions. The demand for improvement in this respect comes primarily from the students themselves.

In the universities, an LMS and moodle are generally used, although the use of these tools is not considered mandatory in most countries. In most universities, blended learning and e-learning are also used. It must be stated at this point that the partial impression is that the difference between these two terms is unclear. These terms are used synonymously in the explanations, although there are fundamental differences. This might also indicate that these two methods are still very new or very rarely used. This could also prove the need for the integration of these learning technologies in all countries. At this point, too, the students themselves are usually the most demanding and less the teachers. Teachers, however, should also implement these and other learning technologies in knowledge transfer, as teachers are very important and irreplaceable factors in the teaching-learning context.
Finally, this qualitative survey also reveals that the topic or the process of validation seems quite unknown. There is virtually no clear understanding of what validation means and the number of existing validation systems, if known, is very low. The importance of validating competences in general for enterprises and enterprises can not be elaborated in the context of secondary research. Bosnia and Herzegovina is also responsible for the state and its lack of support. The national qualification frameworks (NQF) or the ECTS are mainly given as measuring systems, although IT-based validation tools can not be determined either.

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3. PART 2: RESULTS FROM THE ONLINE QUESTIONNIARE

The evaluation of nearly 800 questionnaires from the five partner countries in Eastern Europe provides many important and informative information.

For example, at the beginning of the questionnaire it is noticeable that more men completed questionnaires than women. However, later on, it becomes clear that gender responses are not excessive. Also, the number of people in the individual countries has been filled in by the questionnaire. There are no exact reasons for this, but the view on the population density and the academic landscape of the respective countries could, for example, explain this distribution.

According to the answers of the questionnaires, people in the respective countries have on average a mediocre knowledge with the tendency to have rather little knowledge about the subject of entrepreneurship. It is striking that relatively few students are familiar with this subject. Regarding the REBUS project, this is, of course, important to consider, as the students should be addressed. This fact also shows that the project is at the right place and should try to sensitize so many students in the respective countries for entrepreneurship. In this context, respondents consider the competence "entrepreneurship and the sense of initiative" to be particularly important in the case of "continuing professional devolopment" (67.2%) and "further career development" (68.4%). This could also be an important finding for the project.

In the assessment of the various competences, the competences "vision", "motivation and perseverance" and "creativity" are selected in the top 3 of the selection. The competences "ethical and sustainable thinking", "mobilizing resources" and "mobilizing other" are the most important. The fact that an ethical and sustainable way of thinking about entrepreneurship is so low is certainly questionable and this result was not to be expected in the form.

The recognition that students consider 93% of university education to be a very important or medically important factor in the acquisition of competences with regard to entrepreneurship is also an advantage for the REBUS project as the programs are designed for university students, It can therefore be assumed that on the basis of these figures, many students are likely to be interested. At the same time, the subjects state that they believe that entrepreneurial competences in the informal context are best suited to the workplace or in internships or traineeships. Consequently, internships and practical projects, which are planned for the REBUS project, are a very good basis for the mediation of entrepreneurial thinking. The connection with theoretical knowledge transfer at the university and practical experience in internships could thus prove to be the right choice.

60% of those who claim to have a great knowledge of entrepreneurship answer the question whether they have learning programs or learning activities for acquiring entrepreneurship Knowledge, with "no". This underlines the increasing need to increase awareness of relevant programs among stakeholders. Obviously even those who are very well acquainted with this topic can here in part not name concrete programs for expanding their competence. In addition, only 6.5% of those who claim to have a low level of knowledge of entrepreneurship know programs for the

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acquisition of entrepreneurial skills. But it is precisely these people who should also be addressed in particular in order to arouse the (entrepreneurial) potentials of the people. The fact that these people do not have much knowledge about the entrepreneurship does not necessarily mean a lack of interest in these topics. As a result, the awareness of the programs and activities should in principle be increased. In order to illustrate this and to show the necessity, we will look at the cross-tab between the knowledge of entrepreneurship and the awareness of programs (Fig. 1).

			awarenessprogr		
			Yes	No	Gesamtsumme
knowledgeentre	High	Anzahl	39	60	99
		Erwartete Anzahl	14,8	84,2	99,0
		% in knowledgeentre	39,4%	60,6%	100,0%
		% in awarenessprogr	32,5%	8,8%	12,4%
		% des Gesamtergebnisses	4,9%	7,5%	12,4%
	Medium	Anzahl	67	419	486
		Erwartete Anzahl	72,8	413,2	486,0
		% in knowledgeentre	13,8%	86,2%	100,0%
		% in awarenessprogr	55,8%	61,5%	60,7%
		% des Gesamtergebnisses	8,4%	52,3%	60,7%
	Low	Anzahl	14	202	216
		Erwartete Anzahl	32,4	183,6	216,0
		% in knowledgeentre	6,5%	93,5%	100,0%
		% in awarenessprogr	11,7%	29,7%	27,0%
		% des Gesamtergebnisses	1,7%	25,2%	27,0%
Gesamtsumme		Anzahl	120	681	801
		Erwartete Anzahl	120,0	681,0	801,0
		% in knowledgeentre	15,0%	85,0%	100,0%
		% in awarenessprogr	100,0%	100,0%	100,0%
		% des Gesamtergebnisses	15,0%	85,0%	100,0%

Fig. 1: Cross-table between the knowledge of entrepreneurship (knowledgeentre) and the awareness of programs (awarenessprogr)

In the course of the evaluation, it can also be stated that relatively few students have knowledge about the validation of competencies. This figure is also relatively low for the employees of higher education. The area of validation seems to be unknown to many, although such aspects sometimes play an important role in higher education.

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It is interesting in the following for the evaluation of the familiarity of different instruments. Almost half of all students interviewed and one third of the university staff are not familiar with ECTS. This is certainly very surprising, as the European Credit Transfer System allows students to complete a bachelor's or master's degree with full credit. Even less well-known are the ECVET and the EQF. Again, the awareness of these instruments should be increased urgently. Another indication is that the respondents clearly restrain themselves from the question whether they consider such a tool to be valid for the validation of competences, and at this point they state "do not know". This could lead to a certain uncertainty.

Appropriate tools to certify or enumerate entrepreneurial competences can be seen in the CV (CV). The use of the EUROPASS or Youthpass is also indicated by some as important, but many do not seem to know these two instruments, since the number of those who do not know is relatively high. The social professional network "LinkedIn" is asked for further instruments. This does not seem to be a bad idea at first sight, as these and similar platforms (such as Xing) become more popular and become more popular in the professional world. They go with the trend of digitization and have the potential to have an enormous range. Needless to say, there are still many questions to be answered regarding an implementation, but this idea could have potential.

According to the analysis of the questionnaires, only three people have denied the importance of the validation of competences as a whole, and in addition deny the usefulness of (web-supported) learning systems that include validation. This can certainly be regarded as positive, since by far the majority of the respondents regard these two components as important. This is, in principle, an important statement, particularly with regard to the REBUS project.

Finally, the hypotheses suggest that, ultimately, the analyzes show that the countries differ in their data in the questionnaires. In particular, they differed widely in the areas of knowledge about entrepreneurship in general, knowledge of validation, in the application of digital learning, and finally, they are also slightly different from the top 3 and the last mentioned priorities related to entrepreneurship. A connection can be recognized in the knowledge about entrepreneurship and the age of the interviewees, but no connection with the knowledge about

Entrepreneurship and the respectively indicated top 3 competencies. It should also be mentioned here, however, that the hypotheses, in the sense of critical realism, can never be 100% confirmed or, on the contrary, refuted. Only more or less clear tendencies can be expressed in the one direction or in the other direction, and this should also be taken into account at this point.

4. ANNEXES

Power Point Presentation of the results attached as seperate prints.

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