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FINAL REPORT

ON THE INTERNATIONAL IMPLEMENTATION OF THE "SKILLS FOR THE FUTURE"

PROJECT IN POLAND, ITALY, PORTUGAL AND TURKEY

Collective work edited by: Mieczysław Bąk and Paulina Bednarz

Skills for the Future

FINAL REPORT

ON THE INTERNATIONAL IMPLEMENTATION
OF THE

"SKILLS FOR THE FUTURE"

PROJECT IN
POLAND, ITALY, PORTUGAL AND TURKEY

Education and Culture DG
Lifelong Learning Programme

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I Results of surveys on business expectations

1.1. Research objectives

The objectives of the research were: 1) to identify the key expectations of the business sector regarding the work attitudes and skills required from graduates of higher education institutions; 2) to evaluate the levels of provision of these skills and attitudes by the educational sector; 3) to assess the gaps between the levels of expectation regarding these skills and attitudes, and their provision; and 4) to identify the key recommendations of the business sector for improving the situation. The research team used a pilot survey method in 80 enterprises located in Poland, Italy, Portugal and Turkey (20 each). The enterprises were given a list of potential work attitudes and skills, and were asked to assess their importance for them. Additionally, the enterprises were asked to assess the levels of provision of those attitudes and skills by higher education institutions. A simple rating system was used, presented below:

Symbol	Explanation	Rating
E	- extremely needed/provided	4
H	- highly needed/provided	3
M	- medium needed/provided	2
R	- rarely needed/provided	1
N	- not needed/provided	0

With regard to business sector recommendations for higher education institutions, the research team prepared a set of potential recommendations and asked the pilot survey participants to rank them on a scale from 0 to 10, where 10 indicated the maximum preference.

The report was prepared by the INSTITUTE FOR PRIVATE ENTERPRISE AND DEMOCRACY in Poland, in cooperation with the following project partners: ERIFO in Italy, GESTAO TOTAL in Portugal, and AHI EVRAN UNIVERSITY in Turkey.

1.2. Companies surveyed

A total of 80 enterprises from the four participating countries were surveyed on their expectations of higher education with regard to the business sector. The respondents were mostly small and medium sized enterprises: 14 in Poland, 14 in Italy, 19 in Portugal and 14 in Turkey. There were 6 large enterprises (250 employees or more) in Poland, 6 in Italy and Turkey and 1 in Portugal. The people surveyed were mainly company managers: owners or CEOs, staff managers, human resources specialists and other managerial staff. All the companies interviewed had employed graduates of higher education in the last year, so they had a deep insight into the problem of graduate quality. The companies participating in the research came mostly from the manufacturing, commerce, services and construction sectors. Female respondents were represented in 40% of Polish interviews, 50% of Portugese

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interviews and 10% of Turkish (no record from Italy). All the surveyed companies had employed new graduates: the highest proportion were from a technical background, the second highest were business and economics graduates, and the third were those with degrees in humanities and social sciences. Most of the companies came from regions where project partners were located: Mazovia (Poland), Lisbon (Portugal), Kerhesir (Turkey), and Lacium (Italy).

1.3. Work attitudes

The companies interviewed were asked to indicate which of the listed work attitudes were of significant importance for them and to what extent these attitudes were present in the graduates of higher education institutions in the respective countries.

Polish enterprises indicated that critically important for them were personal honesty, loyalty and willingness to accept tasks. Italian and Portuguese enterprises indicated that the most important for them were honesty – personal ethics, loyalty to the company and respect for others. Respect, honesty, loyalty to the company, willingness to accept tasks, and willingness to share personal knowledge and experience were the most important attitudes for Turkey.

The highest differences between the needs of enterprises and the delivery of higher education institutions observed in Poland were in loyalty for the company, honesty – personal ethics, time-elasticity, and responsibility. This indicates that these attitudes are not developed by higher education institutions in Poland to a satisfactory extent. The highest differences in Italy concerned loyalty to the company, honesty – personal ethics, and respect for others. In Portugal the largest differences concerned taking responsibility, honesty-personal ethics, loyalty to the company, and respect for others. In Turkey the largest differences between needs and provision were in respect for others, honesty-personal ethics, loyalty to the company, and willingness to accept tasks.

To summarize, in all countries personal values had the highest difference between expectations and provision, with some variations concerning direct work attitudes, including time flexibility, responsibility and accepting tasks. This result shows that enterprises in all participating countries expect higher education institutions to foster positive personal values in their students and unfortunately the provision of such values by higher education institutions is relatively low.

Conclusion: The research results from the surveyed countries underlined that the attitudes are similar in the four countries, with some variations for attitudes concerning the taking of responsibility, time flexibility etc. These differences are relatively small and show that businesses in all the surveyed countries have very similar expectations concerning work attitudes, with personal values constituting the most critical aspect.

1.4. Skills most needed by enterprises and gaps in their provision by higher education institutions

During the survey the respondents indicated the skills most needed by enterprises in higher education graduates, specifying the practical utility of each skill and the extent to which it is provided by higher education institutions. The skills were divided into four groups:

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- Interpersonal skills: communication and ability to work in teams,
- Managerial skills: problem solving and initiative and enterprise skills,
- Learning skills: planning and organizing, self-awareness,
- Workplace skills: technology and technical devices.

As with the most needed features, the interviewees could rank the desirability of a given skill from 0 (not needed) to 4 (highly needed) and the average level of provision of this skill by higher education institutions on the same scale. There could be a maximum of 80 points, both for expectations and for higher education provision.

In Poland the most needed skills were listening and understanding, clear explaining and answering, building a climate of confidence, working with customers, creative thinking and adapting to new situations. The biggest differences were indicated within communication skills (on average 27.5 points) and within problem solving skills (27). Almost equally large differences exist in the rankings of teamwork skills (25.6) and initiative and enterprise skills (25.5). Differences, though significantly lower, are also visible regarding learning skills (19.4) and applying technologies (14.6). These achieved results highlight the insufficient adjustment of the education process to the skills needed in enterprises.

In Italy the most needed skills were: willingness to learn using any method, computer skills for normal professional matters, and critical thinking. The main learning gaps in higher education provision concerned the following skills (in order of importance): ability to accept and support leadership; adaptation to new situations; ability to transfer effectively between individual and team work; and, ranked together, negotiation skills; ability to work with people of different ages, genders, and cultures; and intermediate computer skills.

In Portugal the most needed skills were: building a climate of confidence (65 points), accepting and supporting leadership (67), understanding and accepting rules of group behavior (66), helping and supporting team members (66), diagnosing and analyzing problems (69), generating alternative solutions (68), and using strategic thinking (67). The largest gaps between the needs of enterprises and provision from higher education institutions concerned such skills as time management (34), finding opportunities (35), using strategic thinking (34), diagnosing and analyzing problems (30), generating alternative solutions (32), and demonstrating a practical approach (37).

In Turkey, most enterprises expressed the view that they needed graduates to have interpersonal skills (75 points), whereas the level of provision was evaluated as low (29 points). As concerns initiative and enterprise skills, again the majority of the institutions expected these skills (75 points), whereas higher education provision of these skills was rated as insufficient (25 points). In addition, the preference for learning skills was very strong (again 75 points), whereas provision was very low (34 points). Workplace skills were also rated as being very necessary (64 points of preference), whereas provision was 44 points. These results show that there are significant differences between the needs of enterprises in the listed skills and the provision of these skills.

Looking at the results from all four countries, it is striking that in none of them was the provision of technological skills evaluated as being a problematic issue. It seems that universities can provide skills in the application of technology at a level that can be developed by enterprises with no significant difficulty.

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However, problems exist in different spheres, with the problematic issues varying from country to country. In Poland the levels of provision of communication, teamwork skills, problem solving and enterprise skills were rated as being at 50-70% of the values required, constituting a very broad spectrum of problems. The two key spheres with the largest gaps were interpersonal skills and enterprise and initiative skills. Learning skills and technology skills were judged to be better provided. These results show that in general, the provision by Polish universities of practical skills that are valuable for companies is at a level from moderate to low.

In Italy, problems exist in different areas. It appears that the main weakness of Italian universities is the low provision of personal behavior skills. Bearing in mind the areas previously listed which showed the largest gaps between needs and provision, it can be concluded that students do not receive any firm guidelines on the rules of personal behaviour. Higher education institutions in Italy, according to the opinions expressed in the survey, do not teach skills concerning living with other people. It should also be mentioned that in Italy there was a serious gap between needs and provision with regard to intermediate computer skills.

The situation in Portugal is more complex: there are almost no problems with technical and learning skills, but significantly more in enterprise and initiative skills, and in personal planning and organizing. The picture of Portuguese universities that emerges from the research is a rather negative one, with the differences between needs and provision in the key skills discussed being higher than in Poland.

In Turkey, the situation seems to be even worse than in Portugal in the provision of enterprise and initiative skills. The level of provision was rated as being at about 30-40% of the required level, which constitutes a serious problem. Interpersonal skills were also an important issue, with very low provision in comparison to the high level of needs.

In all the surveyed countries there was one important sphere where provision was significantly lower than needs: interpersonal skills, connected with human behavior. Most enterprises observed that new employees cannot function easily after graduating, have important adaptation problems and have difficulties in cooperating with other employees. This is an area that could definitely be improved by universities. Another very important sphere where provision is highly unsatisfactory is that of enterprise and initiative skills. While the issue of interpersonal skills can be explained to some extent, there is no easy answer as to why enterprise and initiative skills are not provided to a satisfactory level. Learning skills create significantly fewer problems. Graduates are ready to learn and universities provide this group of skills relatively effectively. Surprisingly, technical workplace skills create the fewest problems. This can be explained by the way that higher education institutions have strongly orientated their efforts towards technologies, and the results of those efforts are positively evaluated by enterprises.

1.5. Recommendations

The recommendations presented here are based on the evaluations of entrepreneurs in the four countries surveyed. Entrepreneurs taking part in the survey were asked either to assess the importance of proposed recommendations to higher education institutions regarding the courses they offer and the level of cooperation with business, or to propose their own ones.

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In the opinion of the participants in the Polish survey, not only theoretical knowledge acquired during studies is of great importance but also practical skills and abilities which may be used at work. This is why the most important recommendation is the certification not only of knowledge gained but also of skills acquired (a list of skills and at which level). Polish entrepreneurs highlighted that there is a great need for closer cooperation between education institutions and entrepreneurs in the development of educational curricula. It is also necessary to react to the educational needs of businesses and negotiate with entrepreneurs the detailed scope of skills and knowledge training in particular areas. Entrepreneurs also consider it valuable to have Business Associations in the Boards of higher education institutions.

Additionally, Polish businesses proposed their own recommendations, assessing them as the most important from their point of view. These were: that advanced practical classes in information technology (IT), lasting at least a few semesters, should be included in every degree course; that educational institutions should organize internships, compliant with the major subject studied and verifiable by specially designed exams, which could enable students to gain necessary practical skills; and that careers advisory services should become more active within higher education institutions. To sum up, it is evident that businesses in Poland want to cooperate with higher education institutions, they intend to have greater influence on educational curricula, and they prefer to have some more organized forms of mutual cooperation.

In Italy, the most popular propositions for improvements were connected with practicalities. Especially important for entrepreneurs was the need for a practical approach that would work for the benefit of companies. Therefore such propositions as 'Higher education institutions should link the skills taught by them to their commercial use' received a very high rank. Moreover, entrepreneurs required better information on what was achieved by graduates during their studies. Therefore the proposition that 'Each higher education institution should list what skills are gained during the realization of its curricula and at what level' was also highly ranked.

Italian entrepreneurs also suggested a more proactive approach from higher education institutions and more transparency in the evaluation of degree courses. They maintained that 'Higher education institutions should have similar (independent) skills achievement tests allowing comparison of their effectiveness in achieving skills competence levels'; 'Higher education institutions should be more proactive and responsive to the needs of enterprises'; and 'Higher education institutions should certify not only the level of knowledge gained but also the level of skills achieved'. All these propositions received the support of at least 80% of the entrepreneurs questioned.

To summarise: Italian entrepreneurs would prefer a more practical approach from universities, more information on the meaning of university qualifications, and a more proactive approach from universities in cooperation with business. There was not such a strong preference for organizational cooperation between universities and business as among Polish entrepreneurs.

In the opinion of the Portuguese participants in the survey, practical skills have a key importance for enterprises. They also emphasized that there was a great need for education institutions to consult business leaders on educational curricula. In addition, they consider it necessary for higher education institutions to be proactive

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in meeting the educational needs of businesses and to negotiate with entrepreneurs the detailed scope of skills and knowledge training in particular areas. They also regard it as important, though less so, that higher education institutions should link the skills taught by them to their commercial use.

The entrepreneurs in the Portuguese survey also proposed their own recommendations: more information for students on the outcomes of professional courses; closer relations between students and teachers; greater weight being given in course curricula to disciplines related to human behavior and relationships; and more networking with business. To a large extent the recommendations of the Portuguese entrepreneurs are similar to those of their Polish counterparts. It should be noted however that the Portuguese entrepreneurs were perhaps personally affected by the excessive distance between students and professors, and place more emphasis on behavioral skills than the Polish entrepreneurs.

The Turkish entrepreneurs indicated that higher education institutions should be more proactive and responsive to the needs of enterprises; negotiate with business the detailed scope of skills and knowledge training in particular areas; certify not only the level of knowledge gained but also the level of skills achieved; list what skills are achieved during the realization of their curricula and at what level. These propositions were very similar to the Italian ones, with the exception that the commercial use of knowledge was strongly supported by the Italian entrepreneurs.

Summing up, it must be emphasized that in all the countries surveyed, entrepreneurs required a more practical approach from higher education institutions, more in-depth knowledge of what entrepreneurs really need, more transparent information on what is really offered within educational curricula, and more impact on the content of training. In all the countries except Italy, entrepreneurs do not require that graduates should have direct commercial knowledge. The Polish entrepreneurs wanted to be more organizationally involved in shaping the curricula, whereas in the other countries such a need was not so strongly expressed. Detailed examination of the entrepreneurs' suggestions will be used to propose suggestions for the given higher education institutions.

1.6. Comparative empirical results

1.6.1. Attitudes

Entrepreneurs' expectations of the work attitudes of graduates of higher education institutions, as revealed by the survey, are summarised in Table 1.

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Table 1. Entrepreneurs' expectations of work attitudes in the 4 countries (max. 80 points for each category), 2010

Expectations of entrepreneurs	Countries			
Work attitudes	Poland	Italy	Portugal	Turkey
(1) Respect for others	67	69	71	61
(2) Honesty – personal ethics	72	75	73	70
(3) Loyalty to the company	72	72	70	71
(4) Willingness to accept tasks	72	64	73	66
(5) Willingness to work overtime if necessary (time flexibility)	62	51	61	58
(6) Personal mobility (willingness to work in different locations)	47	50	55	48
(7) Taking responsibility	68	54	67	59
(8) Willingness to share own knowledge and experience	63	65	63	62
(9) Openness to others' problems	52	50	59	48
(10) Competition with other employees (negative)	25	24	22	30
(11) Socialibility	45	54	61	53
(12) Positive personal presentation	62	60	60	60
(13) Continuation of family tradition	29	20	43	34

The table shows a general similarity between the levels of expectation in the four countries. In all the countries, attitudes connected with personal values played a key role, with no one country significantly differing from the others. Slight differences are seen in such attitudes as willingness to work overtime, which is regarded as highly necessary by enterprises in Poland and Portugal, but less so in Italy; personal mobility, which is needed more in Portugal than in the other countries; taking responsibility, which is very important in Poland and Portugal, but less necessary in Italy; and openness to others' problems, which is most needed in Portugal. There are low expectations of competition with other employees in all countries, and the continuation of family tradition is really important only in Portugal. Overall, the enterprise sector has similar expectations of the services of higher education institutions in all the surveyed countries.

This observation was confirmed by the linear Pearson correlations calculated for each pair of countries, as given below. All the correlations are very high, with those between Poland and Turkey, and between Italy and Turkey, close to the maximum value of 1.00.

PL-IT	PL-PT	PL-TR	IT-PO	IT-TR	PO-TR
0.92	0.92	0.97	0.89	0.96	0.92

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Table 2 presents the survey findings on the levels of provision of work attitudes by the educational services in the four countries.

Table 2. Provision of work attitudes by the educational services in the 4 countries (max. 80 points for each category), 2010

Provision by higher education institutions	Countries			
Work attitudes	**Poland**	**Italy**	**Portugal**	**Turkey**
(1) Respect for others	40	30	43	36
(2) Honesty – personal ethics	36	26	46	37
(3) Loyalty to the company	27	21	41	33
(4) Willingness to take tasks	45	37	42	41
(5) Willingness to work overtime if necessary (time flexibility)	26	29	40	33
(6) Personal mobility (willingness to work in different locations)	34	28	40	30
(7) Taking responsibility	35	39	41	33
(8) Willingness to share own knowledge and experince	31	42	44	36
(9) Openness to others' problems	28	39	41	30
(10) Competition with other employees (negative)	43	38	42	35
(11) Socialibility	45	40	47	40
(12) Positive personal presentation	47	44	47	35
(13) Continuation of family tradition	15	12	30	20

Table 2 shows that, according to the survey findings, Italian graduates are the least well equipped with attitudes connected with personal values, and Portuguese graduates the best equipped. Time flexibility, personal mobility and taking responsibility are also most evident in Portuguese graduates, while Polish graduates are the least time-flexible, Italian graduates the least mobile, and Turkish graduates the least willing to take responsibility. Willingness to share knowledge with others is a serious problem in Poland, as are a low level of openness to others' problems and an excessive level of competition with other employees. Portuguese graduates, on the other hand, are the most willing to share knowledge and the most open to others' problems, while Turkish graduates are the least competitive with other employees. The continuation of family tradition was not considered as important in any of the four countries, only to some extent in Portugal.

In summary, the survey findings indicate that Portuguese universities have the highest level of provision of work attitudes needed by business, while Italian higher education institutions are assessed the most critically. In Poland, the major problem is that higher education institutions appear to encourage an over-competitive attitude among students, while Turkish universities place less stress on positive personal presentation and taking responsibility.

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There are also substantial correlations between the results on educational provision of work attitudes for the four countries, as shown below. However, the range of the Pearson correlations for the six pairs of countries (0.64-0.86) is lower than that for business expectations of work attitudes in graduates. The lowest correlations concern Italy. It appears that the provision of work attitudes from the educational services is more or less similar in relation to expectations in Poland, Portugal and Turkey, and shows greater variance in Italy.

PL-IT	PL-PT	PL-TR	IT-PO	IT-TR	PO-TR
0,71	0,79	0,82	0,71	0,64	0,86

The gaps between business expectations and provision from educational services in the area of work attitudes are a key result of this part of the research and illustrate where the problems are. The gap for each category was calculated as the difference between the expectations index and the provision index. The results are presented in Table 3.

Table 3. Gaps between business expectations of work attitudes in graduates and their provision by higher education institutions in the four countries (points in the range 0-80, negative = overprovision), 2010

Gap between expectations of enterprises and provision by higher education institutions	Countries			
Work attitudes	**Poland**	**Italy**	**Portugal**	**Turkey**
(1) Respect for others	27	39	28	25
(2) Honesty – personal ethics	36	49	27	33
(3) Loyalty to the company	45	51	29	38
(4) Willingness to take tasks	27	27	31	25
(5) Willingness to work overtime if necessary (time flexibility)	36	22	21	25
(6) Personal mobility (willingness to work in different locations)	13	22	15	18
(7) Taking responsibility	33	15	26	26
(8) Willingness of sharing own knowledge and experince	32	23	19	26
(9) Openness to others' problems	24	11	18	18
(10) Competition with other employees (negative)	-18	-14	-20	-5
(11) Socialibility	0	14	14	13
(12) Positive personal presentation	15	16	13	25
(13) Continuation of family tradition	14	8	13	14

The largest gaps in provision of personal values attitudes are evident in Italy, the lowest in Turkey and Portugal. In Poland, major problems are the low levels of will-

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ingness to work overtime and responsibility taking. Polish graduates are also trained by higher education institutions as too competitive, not open to others' problems, and not willing to share their knowledge with others. On the other hand, their sociability is the highest in relation to the needs of enterprises. Turkish higher education institutions appear to have problems in teaching positive personal presentation. With the exception of that one work attitude, the picture of Turkish higher education in the eyes of business is rather positive. The work attitudes of Portuguese graduates are also viewed reasonably positively by business, but an excessive level of competitiveness constitutes a substantial problem. The gap in willingness to accept tasks is also the highest in Portugal. Overall, it is clear that gaps exist in all the countries and each country has substantial work to do to improve the situation.

The Pearson correlations between the gaps are quite high, ranging from 0.80 to 0.94:

PL-IT	PL-PT	PL-TR	IT-PO	IT-TR	PO-TR
0.80	0.88	0.94	0.82	0.89	0.89

Average results – work attitudes	Countries			
	Poland	Italy	Portugal	Turkey
Average expecatations	56.6	54.5	59.8	55.4
Average provision	34.8	32.7	41.8	33.8
Average gaps	21.8	21.8	18.0	21.6

1.6.2. Skills

Comparative analysis of business expectations of work skills in graduates and their provision by higher education institutions was a much more challenging task, due to the length of the detailed list of skills. Table 4 shows the survey findings on entrepreneurs' expectations of skills possessed by graduates of higher education institutions in the four countries.

Table 4. Entrepreneurs' expectations of graduate skills in the 4 countries (max. 80 points for each category), 2010

Expectations of Entreprenurs			Countries			
Group	Class	Detailed skills	Poland	Italy	Portugal	Turkey
Interpersonal skills	Communication	Listens and understands	71	68	62	57
		Explains and answers clearly and directly	67	68	61	64
		Writes clearly	57	68	61	58

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Expectations of Entreprenurs			Countries			
Group	**Class**	**Detailed skills**	**Poland**	**Italy**	**Portugal**	**Turkey**
Interpersonal skills	Communication	Reads and remembers what was written	62	65	53	53
		Negotiates effectively	60	62	57	52
		Builds climate of confidence	65	57	65	64
	Team work	Accepts and supports leadership	61	62	67	61
		Understands and accepts group behavior rules (roles and relations)	63	59	66	62
		Helps and supports team members	60	62	66	61
		Works with customers, supervisors and controllers	67	61	62	58
		Works across different ages, genders, cultural diversities	63	60	59	51
		Transfers effectively between individual and team work	62	60	57	59
IInitiative and enterprise skills	Problem solving	Diagnoses and analyzes problems	67	66	69	69
		Generates alternative solutions	65	61	68	68
		Demonstrates a practical approach	64	61	70	66
		Is able to estimate and calculate	59	48	64	60
		Understands tables, graphs, schemes and can interpret them	60	50	63	56
		Understands basic budgeting and business planning	52	42	61	48
	Initiative and enterprise	Finds out opportunities and defines them in terms of the action to be undertaken	61	53	66	57
		Uses convincing arguments	58	58	64	57
		Uses strategic thinking	62	59	67	59
		Adapts to new situations	67	68	66	59
		Accepts new challenges	63	65	64	61
		Thinks creatively	68	48	65	60
		Can cope with failure	61	33	64	54
		Takes the lead (in task fulfillment)	51	53	62	56
Learning skills	Planning and organizing	Manages time effectively	60	66	70	61
		Organizes him-/herself at work	64	62	66	57
		Seeks access to resources	57	64	61	58
		Makes decisions	57	57	65	52

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Expectations of Entreprenurs			Countries			
Group	Class	Detailed skills	Poland	Italy	Portugal	Turkey
Learning skills	Planning and organizing	Understands processes and systems	60	60	63	63
		Builds clear project objectives and deliverables	58	62	58	56
		Allocates people and other resources to tasks	56	52	60	47
	Self awareness	Has a personal vision and goals	54	68	57	59
		Evaluates and monitors own performance	56	68	54	61
	Learning	Is able to think critically	58	69	57	54
		Is open to new ideas and techniques	67	62	62	64
		Is willing to expend time and effort on gaining knowledge	63	65	62	59
		Is willing to learn in any method	56	70	59	61
		Is willing to interact with others in the learning process	54	64	59	59
Workplace skills	Technology	Applies technology to work	61	49	59	60
		Has sufficient computer skills to allow him/her to carry out normal professional tasks	66	70	58	63
		Is willing to upgrade computer skills to carry out advanced professional tasks	64	59	60	55
		Is willing to upgrade technology skills	63	58	61	59
		Is willing to use different technologies	65	59	58	64
		Uses technology to seek, process and present information	66	56	62	57
		Uses physical abilities to apply technology	49	62	56	53
		Confirms physical abilities to apply technology by certification, professional exams and other forms	56	55	55	43

It can be seen that Portuguese enterprises had the highest expectations of the problem solving, initiative and enterprise, and planning and organizing skills of graduates, while Italian firms had the highest expectations of graduates' communication, self-awareness and learning skills. Technology skills were most required in Poland, and team work skills were most in demand in Poland and Portugal. On the other hand, Polish companies had the lowest expectations of graduates' self-awareness

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and planning and organizing skills, while Turkish firms had the lowest expectations of the team work and communication skills of graduates. Problem-solving skills were least in demand in Italy, learning skills in Poland and Turkey, and initiative and enterprise in Italy and Turkey.

The levels of provision of these skills by higher education institutions are presented in the table below.

Table 5. Provision by educational services of required work skills in the 4 countries (max. 80 points for each category), 2010

Provision by Higher Education Institutions			Countries			
Group	Class	Detailed skills	Poland	Italy	Portugal	Turkey
Interpersonal skills	Communication	Listens and understands	34	43	41	47
		Explains and answers clearly and directly	38	48	38	44
		Writes clearly	34	55	40	46
		Reads and remembers what was written	42	49	47	50
		Negotiates effectively	38	32	35	41
		Builds climate of confidence	31	30	42	38
	Team work	Accepts and supports leadership	32	26	44	38
		Understands and accepts group behavior rules (roles and relations)	37	40	43	35
		Helps and supports team members	36	34	41	34
		Works with customers, supervisors and controllers	38	35	39	35
		Works across different ages, genders, cultural diversities	44	30	43	38
		Transfers effectively between individual and team work	35	29	41	35
Initiative and enterprise skills	Problem solving	Diagnoses and analyzes problems	39	55	39	41
		Generates alternative solutions	37	53	36	38
		Demonstrates a practical approach	32	45	33	39
		Is able to estimate and calculate	40	47	40	34
		Understands tables, graphs, schemes and can interpret them	37	49	43	51
		Understands basic budgeting and business planning	28	47	39	39

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Provision by Higher Education Institutions			Countries			
Group	Class	Detailed skills	Poland	Italy	Portugal	Turkey
Initiative and enterprise skills	Initiative and enterprise	Finds out opportunities and defines them in terms of the action to be undertaken	31	30	31	35
		Uses convincing arguments	35	34	37	43
		Uses strategic thinking	31	35	33	37
		Adapts to new situations	43	36	39	39
		Accepts new challenges	43	36	40	35
		Thinks creatively	34	33	42	41
		Can cope with failure	36	31	35	32
		Takes the lead (in task fulfillment)	34	37	32	34
Learning skills	Planning and organizing	Manages time effectively	35	46	36	44
		Organizes him-/herself for work	38	43	40	42
		Seeks access to resources	34	44	48	47
		Makes decisions	36	30	39	35
		Understands processes and systems	33	42	48	45
		Builds clear project objectives and deliverables	33	32	39	44
		Allocates people and other resources to tasks	34	40	37	37
	Self awareness	Has a personal vision and goals	46	48	36	41
		Evaluates and monitors own performance	44	50	36	40
	Learning	Is able to think critically	32	45	35	42
		Is open to new ideas and techniques	49	57	46	45
		Is willing to expend time and effort on gaining knowledge	38	56	41	44
		Is willing to learn in any method	49	56	38	43
		Is willing to interact with others in learning process	47	41	44	42
Workplace skills	Technology	Applies technology to work	43	45	47	48
		Has sufficient computer skills to allow him/her to carry out normal professional tasks	50	41	48	51
		Is willing to upgrade computer skills to carry out advanced professional tasks	49	44	47	46

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Provision by Higher Education Institutions			Countries			
Group	Class	Detailed skills	Poland	Italy	Portugal	Turkey
Workplace skills	Technology	Is willing to upgrade technology skills	48	46	48	48
		Is willing to use different technologies	51	42	47	45
		Uses technology to seek, process and present information	47	42	49	49
		Uses physical abilities to apply technologies	45	46	44	43
		Confirms physical abilities to apply technologies by certification, professional exams and other forms	40	40	45	44

The table shows that Italian graduates were the most positively assessed in terms of their problem solving, self-awareness and learning skills, while Portuguese graduates were the most highly rated in team work, and planning and organizing. The initiative and enterprise skills of graduates were most satisfactory in Turkey and Poland, and Turkey also had the highest level of provision of communication skills in graduates. On the other hand, Polish graduates scored worst in the areas of communication, problem solving, and planning and organizing, while Italian graduates were the most negatively assessed in terms of team work, initiative and enterprise, and technology skills. The lowest levels of provision of learning skills were in Portugal and Poland, and Portuguese graduates were also the most lacking in self-awareness skills.

The gaps between expectations and delivery of graduate skills are shown in the following table.

Table 6. Gaps between levels of work skills expected by enterprises and levels of their provision by higher education institutions in the 4 countries (max. 80 points for each category, negative = overprovision), 2010

Gaps between Expectations of Entrepreneurs and Provision by Higher Education Institutions			Countries			
Group	Class	Detailed skills	Poland	Italy	Portugal	Turkey
Inter personal skills	Communication	Listens and understands	37	25	21	10
		Explains and answers clearly and directly	29	20	23	20
		Writes clearly	23	13	21	12
		Reads and remembers what was written	20	16	6	3

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Gaps between Expectations of Entrepreneurs and Provision by Higher Education Institutions			Countries			
Group	**Class**	**Detailed skills**	**Poland**	**Italy**	**Portugal**	**Turkey**
Inter personal skills	Communication	Negotiates effectively	22	30	22	11
		Builds climate of confidence	34	27	23	26
	Team work	Accepts and supports leadership	29	36	23	23
		Understands and accepts group behavior rules (roles and relations)	26	19	23	27
		Helps and supports team members	24	28	25	27
		Works with customers, supervisors and controllers	29	26	23	23
		Works across different ages, genders, cultural diversities	19	30	16	13
		Transfers effectively between individual and team work	27	31	16	24
Initiative and enterprise skills	Problem solving	Diagnoses and analyzes problems	28	11	30	28
		Generates alternative solutions	28	8	32	30
		Demonstrates a practical approach	32	16	37	27
		Is able to estimate and calculate	19	1	24	26
		Understands tables, graphs, schemes and can interpret them	23	1	20	5
		Understands basic budgeting and business planning	24	-5	22	9
	Initiative and enterprise	Finds out opportunities and defines them in terms of the action to be undertaken	30	23	35	22
		Uses convincing arguments	23	24	27	14
		Uses strategic thinking	31	24	34	22
		Adapts to new situations	24	32	27	20
		Accepts new challenges	20	29	24	26
		Thinks creatively	34	15	23	19
		Can cope with failure	25	2	29	22
		Takes the lead (in task fulfillment)	17	16	30	22
Learning skills	Planning and organizing	Manages time effectively	25	20	34	17
		Organizes him-/herself for work	26	19	26	15
		Seeks access to resources	23	20	13	11
		Makes decisions	21	27	26	17
		Understands processes and systems	27	18	15	18

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Gaps between Expectations of Entrepreneurs and Provision by Higher Education Institutions			Countries			
Group	**Class**	**Detailed skills**	**Poland**	**Italy**	**Portugal**	**Turkey**
Learning skills	Planning and organizing	Builds clear project objectives and deliverables	25	30	19	12
		Allocates people and other resources to tasks	22	12	23	10
	Self awareness	Has a personal vision and goals	8	20	21	18
		Evaluates and monitors own performance	12	18	18	21
	Learning	Is able to think critically	26	24	22	12
		Is open to new ideas and techniques	18	5	16	19
		Is willing to expend time and effort on gaining knowledge	25	9	21	15
		Is willing to learn in any method	7	14	21	18
		Is willing to interact with others in the learning process	7	23	15	17
Workplace skills	Technology	Applies technology to work	18	4	12	12
		Has sufficient computer skills to allow him/her to carry out normal professional tasks	16	29	10	12
		Is willing to upgrade computer skills to carry out advanced professional tasks	15	15	13	9
		Is willing to upgrade technology skills	15	12	13	11
		Is willing to use different technologies	14	17	11	19
		Uses technology to seek, process and present information	19	14	13	8
		Uses physical abilities to apply technologies	4	16	12	10
		Confirms physical abilities to apply technologies by certification, professional exams and other forms	16	15	10	-1

The table shows that the highest gaps between expectations and delivery of communication skills are observed in Poland, and the lowest in Turkey. In Italy, teamwork skills provision appears to constitute a serious problem, but the problem solving skills of graduates are much more acceptable to entrepreneurs than is the case in the remaining countries. Shortfalls in the provision of enterprise and initiative skills are the highest in Portugal and the lowest in Turkey, while planning and organizing skills

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gaps are the highest in Poland and, again, the lowest in Turkey. In the area of self-awareness, the gaps between expectations and provision are much lower in Poland than in the other countries, whereas with regard to learning, the gaps do not create a uniform picture showing the strong and weak sides of each surveyed country. The technology skills gaps are the highest in Poland and in Italy, but in Poland this is mostly due to the high level of expectations while in Italy it is mostly due to the low level of provision.

It is clear that the areas for improvement are different in each of the four countries. In Poland it is mostly the interpersonal and learning skills of graduates that should be improved, in Italy teamwork and technology skills, and in Portugal problem-solving and enterprise and initiative skills. In Turkey problems exist in particular detailed areas, and the situation of Turkey is rather more complex because of the relatively low level of business expectations of graduate skills.

AVERAGE RESULTS – SKILLS – points	Poland	Italy	Portugal	Turkey
Average expectations	61.0	59.9	61.9	58.2
Average provision	38.8	41.6	40.6	41.3
Average gaps	22.2	18.3	21.3	16.9

1.6.3. Recommendations

The comparative empirical results show that entrepreneurs from different countries differ in their views on the best ways to improve cooperation between business and universities. Despite the differences, it must be emphasized that common to all the countries is the desire to have an objective testing system that would reveal the levels of skills achieved by graduates. Secondly, businesspeople from all the countries except Italy want to have an influence on educational curricula. And thirdly, entrepreneurs from all the countries strongly support the postulate that higher education institutions should be more proactive in cooperation with business. The results are presented in Table 7.

Table 7. Evaluation of submitted recommendations by entrepreneurs – – averages on a scale 0-10 (max. 10 points) in the 4 countries, 2010

PROPOSITION FOR IMPROVEMENT	Countries – Average scores (0 min, 10 max)			
	Poland	Italy	Portugal	Turkey
Higher education institutions should negotiate with business the detailed scope of skills and knowledge training in particular areas	7.60	4.50	7.80	7.90
Higher Education institutions should consult business associations about their curricula	8.05	3.90	7.95	6.40
Businesses should have the right to influence educational curricula	5.30	3.25	4.65	5.90

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PROPOSITION FOR IMPROVEMENT	Countries – Average scores (0 min, 10 max)			
	Poland	Italy	Portugal	Turkey
Higher education institutions should prove the level not only of knowledge acquired level but also of skills gained	8.40	6.40	7.30	7.70
Each higher education institution should list what skills are achieved during the realization of its curricula and at what level	8.15	5.65	6.20	7.00
Higher education institutions should have similar (independent) skills achievement tests allowing comparison of their effectiveness in reaching skills competence levels	7.90	7.50	6.10	7.30
Recognition of necessary skills achievement levels should be the statutory tasks of higher education institutions	6.55	4.80	5.80	6.35
Higher education institutions should link the skills taught by them to their commercial use	6.35	6.55	4.05	7.00
Higher education institutions should be more proactive and responsive to the needs of enterprises	8.00	7.05	6.35	8.65
Higher Education Institutions should include Business Associations in their Boards	5.95	4.35	6.00	5.95
Higher education institutions should continue training in literacy and numeracy to achieve higher levels	6.05	5.50	4.85	6.05
AVERAGE	7.12	5.40	6.10	6,93

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II Analysis of strategies supporting cooperation

2.1. Analysis of strategies supporting cooperation between business and higher education institutions

During the Skills for the Future project activities the partners' research team recognized four main groups of strategies supporting cooperation between business and higher education institutions, based on the level and type of involvement of companies and educational institutions in the cooperation process. These are:

- Strategy of cooperation in enriching the existing educational process
- Strategy of joint building of graduate profiles and design of the educational process
- Strategy of cooperation in the process of employing graduates and students
- Strategy of direct support to higher education units

2.2. Strategy of cooperation in enriching the existing educational process

This strategy is based on the assumption that at the present moment it is difficult to change the whole educational process and the best solution is to improve the existing one. The improvements are mostly based on adding practical elements to the educational process, such as student internships, free lectures by business representatives at universities, employment of business professionals by universities, and workshops and training in enterprises. Sometimes businesses are ready to open training centers at universities where some skills training is also provided for students. This strategy is highly appropriate as a first stage of cooperation between businesses and higher education entities.

2.3. Strategy of joint building of graduate profiles and design of the educational process

In contrast to the strategy of enrichment, this strategy is based on the assumption that business entities must play a fundamental role in shaping the educational agenda of universities, and results from the understanding of universities that the role of enterprises in shaping the educational process is crucial to the success of graduates in their professional careers. In other words, if higher education is to produce graduates who will be successful in and beneficial to the business world, an examination of business needs must be carried out and business representatives must actively take part in building educational curricula.

2.4. Strategy of cooperation in the process of employing graduates and students

When a company actively cooperates with a university in the recruitment of graduates and students, university management in turn gains a greater insight into the most important factors in employment by the private sector, and can better

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shape skills training and re-direct numerous activities towards better fulfillment of employers' needs. Similarly, examination requirements can be molded more towards exactly what is required by business.

2.5. Strategy of direct support to higher education units

Direct support to higher education units usually means that enterprises share their experience and/or resources with higher education institutions. It seems that sharing experience is much more important because universities can constantly re-shape their educational activities in line with to changing skills needs. To facilitate the process of experience sharing, many universities create bodies (such as enterprise councils or business advisory councils) that provide advice to management and educational orientation of the university. These bodies may only meet once or twice a year, but within them there are often some more active individuals and groups who can significantly influence the shape of the educational program.

Financial aid to universities and/or students also plays an important role. For example, providing equipment for a laboratory can facilitate the process of skills acquisition by students. Alternatively, stipends for the best students and stipends with job guarantees can constitute a very good basis for the preparation of young people for jobs in a given company. All such solutions build solid ties and long-lasting mutual understanding. Direct support for universities, especially in the area of experience sharing, is the most advanced strategy of cooperation.

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III Analysis of competition to provide education framework

3.1. Analysis of competition to provide education fitted to employers needs

Higher education in most European Union countries is facing the challenge of demographic decline, with the number of young people eligible to enter higher education falling every year. This challenge is being addressed by higher education institutions in different ways. First of all, they have to increase their competitiveness by diversifying their activities. In most cases the initial competitiveness position of the educational institution determines the future activities undertaken by this school. In general, the educational institutions which compete on the educational market can be divided into two groups: elite high grade schools or "first league" universities, which compete for the best students, who may later turn out to be leaders of society, and where demand for places is higher than their availability; and "common" universities, which have to compete for a sufficient number of students to use their capacities.

It should be noted that the distinction between "first league" and "common" universities is not necessarily along public-private lines. In certain countries public universities are better than private (e.g. in Germany, Poland); in some there are equally good public and private schools (eg. the UK); while in others private are better (e.g. USA). The main distinction between very good (first league) and good (common) universities is the average amount of expenditure per student, which in the top universities is substantially higher. However, money is not always the main issue in this distinction.

3.2. First league universities

Typically the "first league" universities have high tuition fees, but many of them provide student subsidies, allowing for significant assistance for those who cannot afford to pay the full amount, and observations show that the top universities tend not to increase their tuition fees substantially. The main ways they compete for the best candidates are:

- Employment of well known scientists and professors (Stars strategy)
- Collection of substantial financial resources from alumni and business (Capacity building strategy)
- High levels of interactive programs for students (Creative climate strategy)
- Publicizing the career successes of their graduates (Effectiveness presentation strategy)
- Dissemination of academic achievements (Noble awards strategy)
- Tradition preservation (High values strategy)
- Spin-off promotion (Spin-off companies strategy)

The mission of the first league universities forces them to compete for the best candidates, and the role of the practical approach is not so important as in common universities, since graduates are usually employed on the basis of the prestige and high reputation of their university. As a result, graduates from such universities are offered more jobs connected with decision making than in the case of common universities. Practical experience in this type of university is mostly on the basis of

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companies created by graduates of the university, and the business opportunities facilitated by the creative climate of the university.

3.3. Competition between "common" universities

Common universities are understood as universities which must compete for students, otherwise some existing teaching capacity will not be used. Common universities are those which typically educate many thousands of students and have huge human and infrastructure capacities. They mostly belong to the group of large state universities, sometimes are underfinanced and cannot provide such sophisticated educational services as fisrt league universities. Common universities have a much more difficult task than first league ones because they need to be highly cost efficient, which usually means less expenditure per student than the best universities. While in high grade universities prestige plays an important role in attracting students, in common universities the key role is played be the usefulness of the skills and knowledge provided by them. Usefulness is usually understood as the ability to use skills and knowledge acquired at the higher education institution in the workplace. Therefore, common universities must carefully listen to the opinions of entrepreneurs and graduates who assess the utility of the education they provide. The methods of competition most often used by common universities are the following:

- Innovative new fields of higher education (Innovation strategy)
- Interdisciplinary education (Multi-education strategy)
- Education with high practical content (Practical approach strategy)
- Educational curricula prepared together with business (Business Participation Strategy)
- Joint educational activities with enterprises (Experience gaining strategy)
- Practical orientation of education in cooperation with business (Research with utility strategy)
- Interactive approach to teaching and role playing by students (Student interaction strategy)

Common universities clearly have a much greater challenge in attracting students than the first league. They serve a broad segment of the educational market and provide services to a mass market of customers. However, customer satisfaction can only usually be measured after the education process, rather than during it. High employability of graduates is the first indicator of educational success, and the level of first salaries is also important. But many graduates also prefer to have jobs with a large element of decision-making, not just task execution. Meeting this last preference strongly depends on the way universities prepare students to perform roles that require more responsibility. This cannot be achieved without in-depth cooperation with business. Therefore, the extent to which business is engaged in shaping the educational process greatly influences the success of common universities. There is also a strong difference between the required graduate profiles of first league and common universities. While the top universities prefer educating "stars" (leaders), common universities must concentrate on educating social people, who are equally good as team members and team leaders. Thus common universities must concentrate more on the social side of human nature. This is an important part of maximizing their competitiveness.

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IV Guidelines for using Strategic Cooperation Framework and Strategic Cooperation Software

4.1. Guidelines for using Strategic Cooperation Framework[1]

The framework contains a model action plan for the university level educational institutions and businesses. It is based on the findings of the survey on business expectations of graduates' work attitudes and personal values, the results of a focus group meeting with university managers, and on identified best practices. It allows the drafting of an action plan for adjusting the educational process to fit business needs, with the use of the software package developed during the project. The package facilitates identification of a business's expectations of graduate profiles as well as identification of the business's preferences for forms of cooperation with the university and evaluation of the curricula. This part of the framework also allows the planning of student internships in line with business needs.

One of the important elements in preparing students to work in business is giving them access to current business solutions and business practices. This knowledge might be provided during designated lectures given by businesspeople. Part of the framework is devoted to the method of organizing such lectures, attracting business representatives to university courses, and finally selecting the lectures. Practical knowledge might also be provided through specialized training centers and in-company workshops and training. Additionally, the framework contains information on how to seek opportunities for training within companies and recruit students. It also explores the possibility of researching practical topics which are important for companies as subjects of student theses . Another identified area of cooperation might be purchasing the equipment necessary for practical training of students. The framework also contains suggestions of other possible areas of cooperation between academia and enterprises and thus facilitates the involvement of the business community in the education process.

The model plan also contains information on how to construct graduate profiles and university courses according to the needs of business, as well as suggestions for cooperation in tracing students' and graduates' careers. It suggests the steps to be taken during these processes and identifies the responsibilities of university staff members during this process. Finally, it includes a proposal for organization of a Business Advisory Council, which could facilitate contact with enterprises. All these activities are finally presented in the form of a master action plan with a list of persons responsible and deadlines for action. The presented material would allow universities to prepare an action plan for cooperation with business in adjusting their course to suit business needs.

[1] Annex 1.

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4.2. Guidelines for using Strategic Cooperation Software

The software package is for the use of universities in order to support cooperation with business on educational issues, and has the specific aim of facilitating the planning and management of the cooperation process by checking employers' needs, enabling the collection of business expectations, and providing targeting tools to satisfy employers' needs. It also facilitates communication with employers.

The software consists of the following 6 elements (3 market research questionnaires and 3 descriptions):

A. three tools which have the form of questionnaires to be used for assessing the most important aspects of cooperation between business and universities in preparing an action plan:

- **Business Needs Survey** – an internet questionnaire that assesses what is needed by business from the point of view of skills, knowledge and work attitudes
- **Course Curriculum Business Evaluation Form** – an internet questionnaire that allows the evaluation of existing educational courses or programs from the point of view of business needs. This tool gives a transparent evaluation of what is currently delivered by higher educational institutions and what should be changed.
- **Business – University Cooperation Forms Review** – an internet questionnaire which assesses the preferred forms of cooperation between a business and a university. This tool indicates what universities can expect from businesses.

B. three tools which have the form of useful descriptions of the most needed elements of cooperation between business and universities:

- **Presentation of Forms of Business-University Cooperation** – this is an illustrative tool that describes 25 different forms of educational cooperation between business and universities
- **Letters Template**s – 6 models of written communication between universities and businesses showing how matters can be organized, ready for use by universities
- **National Project Reports** – the results of the business needs survey conducted by Project Partners in Poland, Turkey, Italy and Portugal which show the most needed employees skills and employers' expectations. They can also serve as an example of how a research report could be prepared.

All users can see how the software works using the demonstration version on the project web pages:

- http://skills4future.ning.com/
- http://www.skillsforthefuture.com/ (Polish version)
- http://www.erifo.org/portale.asp?por=3&por1=105 (Italian version)
- http://skills4future.ning.com/group/portugal (Portuguese version)
- http://www.ahievran.edu.tr/index.php/2011-08-28-14-27-07/2011-08-28-14-27-9/176-ab-projemiz-kapsamnda-gelistirdigimiz-oelcme-araclar-hizmete-sunulmustur (Turkish version)

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Simple use:

Software tools are created with Google Docs. Using the software is free of charge and any institution can do this by creating an e-mail account on google.pl.

Step 1 – institutions select the tool they need by clicking on one of the links with the name of the questionnaire. For security purposes users need to fill in the required form with personal informational (name, surname, institution, e-mail, phone) and click send.

Step 2 – in response institutions receive an email with a code to place the tools on individual websites and instructions on how to use the service Google Docs. The administrator (Project Partner) will create an individual account for each institution where all requested files (questionnaires and documents) will be copied and available for use.

Step 3 – when posting the code, institutions have to simply log into the system google.docs to continuously check the answers obtained. The new owner can now edit, share and publish the documents, and create new ones. Every document has an associated address (or link), which can be obtained by editing the document and using the publishing option (or live form in the case of surveys) in the share menu. With the document address, institutions are able to reference it on their website or embed it by selecting the Publish option and copying the embed code to the webpage.

All universities can apply to any project partner for a free version of the software package or for a single tool (questionnaire). Thanks to Google Docs, each university can edit the content of the questions according to their individual needs. The results of completed questionnaires can be presented in numerical and graphical form.

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Annex 1. European Framework for Strategic Cooperation between Education Institutions and Business

MODEL PLAN FOR EDUCATIONAL COOPERATION BETWEEN HIGHER EDUCATION INSTITUTIONS AND BUSINESS

Plan structure

1. Name of the university, name of the plan, person responsible
2. University needs regarding educational cooperation with business. Research conclusions
3. Action plan for shaping the educational process
4. Building graduate profiles and courses offered
5. Cooperation in recruiting graduates and students
6. Support for university from companies
7. Timetable and persons responsible

1. Name of the university, name of the plan, responsible person

- University of Applied Sciences (UAS)
- Educational Cooperation Plan with National Economy Entities for years 2012-2014
- Person responsible for realization of plan: Vice-Rector for Education Prof. Jan Słonkowski

2. University needs regarding educational cooperation with business

Research regarding the organization of internships conducted by the university in 2011 with 30 entrepreneurs cooperating continuously with the university revealed important differences between entrepreneurs' expectations and their provision by our university. The results are shown in the tables below.

The first table concerns work attitudes.

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Table 1. Differences between entrepreneurs' expectations and their realization by UAS: WORK ATTITUDES (scale 0 – 4, 0 – none, 1 – low level, 2 – medium level, 3 – high level, 4 – very high level)

Work attitudes	Business needs	Level provided by uas	Disparity
Respect for others (1)	3.35	2.00	1.35
Honesty – personal ethics (2)	3.60	1.80	1.80
Loyalty to the company (3)	3.60	1.35	2.25
Willingness to accept tasks (4)	3.60	2.25	1.35
Willingness to work overtime if necessary (time flexibility) (5)	3.10	1.30	1.80
Personal mobility (willingness to work in different localisations) (6)	2.35	1.70	0.65
Taking responsibility (7)	3.40	1.75	1.65
Willingness to share own knowledge and experience (8)	3.15	1.55	1.60
Openness to others' problems (9)	2.60	1.40	1.20
Competition with other employees (negative) (10)	1.25	2.15	-0.90
Sociability (11)	2.25	2.25	0.00
Positive personal presentation (12)	3.10	2.35	0.75
Continuation of family tradition (13)	1.45	0.75	0.70

Source: Own research of UAS

Analysis of these results revealed that:

1. The biggest disparity between employers' needs and the provided level concerned loyalty to the company.
2. Other very important disparities concerned personal ethics, time flexibility, and willingness to share knowledge and experience with others.
3. Entrepreneurs pointed out that UAS places great emphasis on competitive attitudes and not enough emphasis on features related to cooperation.

The second table summarizes the results of the research on the skills of our graduates.

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Table 2. Differences between entrepreneurs' expectations and their realization by UAS: GRADUATES' SKILLS (scale 0 – 4, 0 – none, 1 – low level, 2 – medium level, 3 – high level, 4 – very high level)

Graduates' skills			Business needs	Level provided by uas	Disparities
Thematic group	Class	Detailed skills			
Interpersonal skills	Communication	Listens and understands	3.55	1.70	1.85
		Explains and answers clearly and directly	3.35	1.90	1.45
		Writes clearly	2.85	1.70	1.15
		Reads and remembers what was written	3.10	2.10	1.00
		Negotiates effectively	3.00	1.90	1.10
		Builds climate of confidence	3.25	1.55	1.70
	Team work	Accepts and supports leadership	3.05	1.60	1.45
		Understands and accepts group begaviour rules (roles and relations)	3.15	1.85	1.30
		Helps and supports team members	3.00	1.80	1.20
		Works with customers, supervisors and controllers	3.35	1.90	1.45
		Works across different ages, genders, cultural diversities	3.15	2.20	0.95
		Transfers effectively between individual and team work	3.10	1.75	1.35
Initiative and enterprise skills	Problem solving	Diagnoses and analyzes problems	3.35	1.95	1.40
		Generates alternative solutions	3.25	1.85	1.40
		Demonstrates a practical approach	3.20	1.60	1.60
		Is able to estimate and calculate	2.95	2.00	0.95
		Understands tables, graphs, schemes and can interpret them	3.00	1.85	1.15
		Understands basic budgeting and business planning	2.60	1.40	1.20

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Graduates' skills			Business needs	Level provided by uas	Disparities
Thematic group	**Class**	**Detailed skills**			
Initiative and enterprise skills	Initiative and enterpreneurship	Finds out opportunities and defines them in the form of the action to be undertaken	3.05	1.55	1.50
		Uses convincing arguments	2.90	1.75	1.15
		Uses strategic thinking	3.10	1.55	1.55
		Adapts to new situations	3.35	2.15	1.20
		Accepts new challenges	3.15	2.15	1.00
		Thinks creatively	3.40	1.70	1.70
		Can cope with failure	3.05	1.80	1.25
		Takes the lead (in task fulfillment)	2.55	1.70	0.85
Learning skills	Planning and organizing	Manages time effectively	3.00	1.75	1.25
		Organizes him-/herself at work	3.20	1.90	1.30
		Seeks access to resources	2.85	1.70	1.15
		Makes decisions	2.85	1.80	1.05
		Understands processes and systems	3.00	1.65	1.35
		Bulids clear projekt objectives and deliverables	2.90	1.65	1.25
		Allocates people and other resources to tasks	2.80	1.70	1.10
	Self awareness	Has a personal vision and goals	2.70	2.30	0.40
		Evaluates and monitors own performance	2.80	2.20	0.60
	Learning	Is able to think critically	2.90	1.60	1.30
		Is open to new ideas and techniques	3.35	2.45	0.90
		Is willing to expend time and effort on gaining knowledge	3.15	1.90	1.25
		Is willing to learn in any method	2.80	2.45	0.35
		Is willing to interact with others in learning process	2.70	2.35	0.35

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Graduates' skills			Business needs	Level provided by uas	Disparities
Thematic group	Class	Detailed skills			
Workplace skills	Technology	Applies technology to work	3.05	2.15	0.90
		Has sufficient computer skills to allow him/her to carry out normal professional tasks	3.30	2.50	0.80
		Is willing to upgrade computer skills to carry out advanced professional tasks	3.20	2.45	0.75
		Is willing to upgrade technology skills	3.15	2.40	0.75
		Is willing to use different technologies	3.25	2.55	0.70
		Uses technology to seek, process and present information	3.30	2.35	0.95
		Uses physical abilities to apply technology	2.45	2.25	0.20
		Confirms physical abilities to apply technology by certification, professional exams and other forms	2.80	2.00	0.80

Source: Own research of UAS

Analysis of these results revealed that:

1. The greatest shortages concerned such skills as:

- Ability to listen – 1.85 (disparity)
- Building climate of confidence - 1.70
- Ability to think creatively – 1.70
- Using strategic thinking – 1.55
- Showing a practical approach - 1.60
- Finding out opportunities and defining them in the form of the action to be undertaken – 1.50
- Clear explanations and answers – 1.45
- Accepting and supporting leadership – 1.45
- Working with customers, supervisors and controllers – 1.45
- Diagnosis and analysis of problems – 1.40
- Generating alternative solutions – 1.40
- Understanding processes and systems – 1.35
- Effective transfer between individual and team work – 1.35
- Ability to think critically – 1.30
- Self-organization at work – 1.30
- Being able to cope with failure – 1.25

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2. Our graduate mainly lack those abilities which can usually be acquired through closer cooperation with enterprises.
3. Most of these skills could be taught by our trainers but only after consultation with entrepreneurs.
4. Our university can teach most of the technical skills at the level needed by the business sector.

Other research regarding the same area (IPED, 2010) showed that:

1. Higher education institutions should certify not only the level of formal knowledge but also the level of skills acquired.
2. Each higher education institution should specify what kind of skills and abilities (and at what level) can be obtained during the educational process.
3. Higher education institutions should consult the business sector about their curricula.
4. Higher education institutions should be more proactive and react to the needs of enterprises.
5. Higher education institutions should run similar (but independent) competence tests allowing comparison of results and evaluate their effectiveness in teaching competences.
6. Higher education institutions should consult the business sector regarding the detailed scope of learned abilities, skills and knowledge in particular areas.
7. Setting a minimum level of skills and abilities should be the statutory obligation of every higher education institution.

Conclusions:

The University of Applied Sciences should establish a wide program of cooperation with business including at least:

1. Cooperation in the area of shaping the educational process
2. Cooperation in the area of building graduate profiles
3. Cooperation in the area of recruitment of graduates and students
4. Cooperation in the area of new innovative projects and activities

Furthermore, UAS should decide on what organizational forms of cooperation should be applied.

Vice-Rector for Education Prof. Jan Słonkowski will be responsible for the realization of the program.

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3. Action plan for shaping the educational process

3.1.Using program package delivered within SKIFF project

Within the Skills for the Future project realized within the Erasmus Lifelong Learning Programme by a consortium of partners from Poland, Portugal, Turkey and Italy, a software package has been developed containing the following materials designed to facilitate university-business cooperation:

1. Presentation of forms of cooperation between university and business (Word)
2. Electronic questionnaire for business, containing questions about the preferred forms of cooperation with universities (Excel)
3. Examples of letters regarding cooperation between companies and universities (Word)
4. Electronic questionnaire for business regarding assessment of course curricula (Excel)
5. Electronic questionnaire regarding business expectations in the area of skills, knowledge and attitudes of university graduates (Excel)
6. Research reports concerning business needs in the area of shaping graduates' profile, showing practical usage of tools included in the package (Word).

The contents of the package enables the construction of a plan of cooperation between universities and enterprises using electronic forms. In addition, each university has the opportunity to publish such electronic questionnaires on their websites, which can significantly accelerate the implementation of research on the needs and expectations of entrepreneurs.

The package is available at: http://skills4future.ning.com/

Below you may find a proposal on how to use the package to construct a plan of cooperation between university and business.

3.1.1. Analysis of the package from the standpoint of university needs

UAS educates specialists in applied science who are employed in the national economy, mainly in companies. Therefore, identification of business needs has great importance for the proper formation of both graduate profiles and the specific skills taught within the university curricula.

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The university has decided to draw up a plan of cooperation for the entire university, but it will give co-managers of organizational units, and heads of faculties and specialized courses the opportunity to make decisions about the application of specific tools. This means adopting a process approach to deeper cooperation by educating lower-level managers in the construction of cooperation with business, while supporting the individual initiatives of all those interested in this area. The plan is to encourage individual initiatives and set new standards for the design of university courses in collaboration with the market.

After analysis of the contents of the software package, UAS has concluded that, in particular, the descriptive presentation of the forms of cooperation between business and universities, which will be enriched by the university's own experience, will be used to draw up a plan of cooperation. Furthermore, the electronic questionnaires, the examples of letters concerning business-university cooperation, and the sample research report will be posted on the university website for optional use.

3.1.2. Posting the package on the university website

Posting the software package on the university website will be the task of an IT specialist, whose responsibility it will also be to adapt the contents of the questionnaires to the specifics of our university and build in some free space for additional, open questions which could be inserted by the person performing the research. All three surveys included in the package will be posted on the website. Using these tools, every employee of the university will have the opportunity to conduct research into business needs. UAS will also post on its website all illustrative and information materials included in the package.

3.1.3. Analysis of results from the research survey carried out with the package

Analysis of the results of tests carried out among entrepreneurs will be conducted by Specialty Managers, with the aim of developing specific recommendations to modify or change curricula, teaching methods and assessment methods.

The persons mentioned above may examine:

1. Business expectations of the profiles of graduates of major degree courses or specializations
2. Business preferences for forms of cooperation with the university
3. The evaluation of educational curricula conducted by entrepreneurs

It is expected that every Faculty Manager or Specialty Manager, in cooperation with the managers of organizational units, should organize a staff meeting to discuss the results of the analysis and develop proposals for implementation (within one month of the completion of the study and analysis). Faculty Managers and Specialty Managers should also consult representatives of companies regarding the scope of the changes. The recommendations resulting from these meetings and consultations should be implemented no later than the following academic year.

During the analysis, the models developed in the framework of the software package may be used.

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3.1.4. Customizing the university educational program with the aid of entrepreneurs' and students' suggestions

In their respective fields and specialties, managers of organizational units shall set up implementation teams, whose task it will be to develop a detailed implementation of recommendations from business surveys. The teams should consist of specialty course lecturers whose syllabuses have been evaluated, and lecturers of those courses to which changes have been proposed. The teams may also include other people. The implementation teams should make it possible to effect the changes by the following academic year at the latest. Managers of organization units responsible for specific specializations will write memos about the implemented changes and forward them to the Vice-Rector for Education. The Recruitment Department shall forward the results of subsequent recruitment processes to the Vice-Rector for Education and managers of organizational units in order to assess the impact of changes on the results of recruitment.

3.2. Student internships

3.2.1. Appointment of a UAS Agent for student internships

The Rector will appoint a representative for student internships, setting out the scope of his duties and granting him permission to perform his function. The representative will adopt a plan of activities, including in particular a plan to establish cooperation with companies in the area of organizing student internships.

3.2.2. Development of a plan for cooperation with companies in the field of student internships

The agent for student internships shall determine the methods of contact with companies, the planned number and forms of contacts, the planned number of cooperation agreements, and the planned number of internships, with an indication of what skills students can learn there.

3.2.3. Implementation and monitoring of the plan for cooperation with companies by the agent for student internships

The agent for student internships will present the results of his work six months after the commencement of the plan implementation. This presentation will be in the form of descriptive notes, a business report and a quantitative tabular report.

3.3. Organization at UAS of free-of-charge lectures and courses given by business representatives

3.3.1. Publicizing the possibility of giving lectures regarding business practice at UAS – visible info on the university website

UAS supports the idea of running free lectures on business practices by business representatives. On the university website there will be a bookmark "Corporate Lectures", where information will be posted about this type of event. Interested companies are invited to contact the faculty or faculties engaged in areas related or similar to the proposed theme of the lecture. The faculty will then invite the company to deliver

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a lecture and inform students about a free lecture. Building the "Corporate Lectures" tab will be entrusted to the IT specialist, while administrative staff and lecturers will be able to post information on the website.

3.3.2. Providing technical and organizational capacity for lectures by business representatives

Company lectures may be scheduled during course lectures or at other times. In the first case, the lecturer who invited the business representative should provide proper organization of the lecture. Otherwise the responsibility for providing the room and appropriate equipment is assigned to the planning department.

3.3.3. Lecture documentation

The persons issuing invitations (lecturers) should properly document the course/lecture (2-3 pictures) and write a short note about it, which will then be placed on the university website.

3.4. Organization of chargeable, specialized lectures, run by business representatives

3.4.1. Determining demand for chargeable, specialized courses

Faculty and Specialty Managers should establish the demand for chargeable, specialized lectures to be carried out by business representatives. The scope of such lectures should not exceed 10% of the timeline of all classes. Managers should determine the demand for those lectures at least 3 months before the start of the academic year.

3.4.2. Selection of lecturers

Selection of lecturers should be based on existing personal contacts, and if it is not possible then Faculty and Specialty Managers will be responsible for carrying out a recruitment process.

3.4.3. Monitoring the level of achievement of educational objectives and documentation of the process

Chargeable, specialized lectures shall be monitored in terms of their effectiveness in transferring knowledge, skills and attitudes to an extent which cannot be achieved by the UAS lecturers. Each paid lecture shall be assessed by an Evaluation Specialist, who will submit the results to the Vice-Rector for Education.

3.5. Organization of specialized training centers

3.5.1. Dissemination of information on the possibility of creating training centers at UAS

The Vice-Rector for Education in cooperation with the Agent for Student Internships will assess institutions cooperating with the university and/or other business entities in order to propose to some of them that they could organize training centers at the university. This assessment should be conducted once a year, at least 6 months before the start of the academic year.

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3.5.2. Development of model agreement of cooperation in organizing and implementing company training centers at UAS

If a company agrees to organize a training centre at the university, then after the necessary arrangements and discussions have been conducted, the Vice-Rector for Education shall give a UAS legal adviser guidelines regarding the contract, who will then prepare a draft contract.

3.5.3. Monitoring of the functioning of the Training Center

If a corporate training center is established at the university, a counselor shall be appointed by the university to coordinate the activity of the center. The work plan of the training center should mostly be devoted to specialty courses for UAS students. These classes should be included in UAS students' schedules.

3.6. Workshops and training in companies

3.6.1. Seeking opportunities for the organization of workshops and training in companies

Specialty Managers and Faculty Managers as well as specialty course lecturers are required to establish the possibility of organizing workshops and training for students in business entities. Possibilities of this kind should be reported on an ongoing basis and documented by Specialty Managers. The Vice-Rector for Education shall be responsible for organizing a meeting on this topic, to take place no later than one month after the start of the academic year.

3.6.2. Recruitment and supervision of students participating in workshops and training in companies

Specialty Managers, Faculty Managers and specialty course lecturers - after determining the possibility of organizing workshops and training in companies for UAS students – shall be responsible for the recruitment of participants (students) in this type of activity. Cooperation with student science clubs or other student organizations is also desirable. Specialty Managers or lecturers shall exercise general supervision over students' participation in such workshops and training.

3.6.3. Monitoring and documentation of external training

Persons responsible for external training are also responsible for its proper documentation.

3.7. Providing data for theses

3.7.1. Organizational support for individual students seeking data from companies

UAS supports students seeking data from companies for use in their theses by sending "letters of request for disclosure of data to be used in a student thesis". At the request of the employer all the data may be concealed or the identity of the enterprise may be changed. Information about such possibilities should be included in the "letter of request ...".

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- **3.7.2. Identification of partners for framework agreements regarding data sharing**

The Agent for Student Internships as well as thesis promoters shall identify companies which are ready to share data for thesis purposes in order to sign framework agreements with these entities. Framework agreements are aimed at speeding up data acquisition by students. This task should be completed by the end of June each year.

- **3.7.3. Signing framework agreements with regular partners, giving students access to data for theses**

The Office of the Vice-Rector for Education will prepare proposals and agreements, which after consultation with a legal counselor shall be forwarded to the companies.

3.8.Ordering case studies in the form of student theses

- **3.8.1. Informing companies about the option of suggesting topics for student theses**

The Vice-rector for Education will inform companies about the possibility of suggesting topics for student theses, which can later be used practically by the company. The IT Specialist will build on the UAS website a "Request dissertation topic" tab, which will allow companies instant access to information on the desired topic.

- **3.8.2.Directing the suggested topics to promoters and students**

The Office of the Vice-Rector for Education will refer the proposals of topics to potential promoters, who will then inform students. After that the Office will inform the company about the adoption of the suggested topic or about lack of interest among students.

- **3.8.3. Documenting the implementation of theses realized as a result of the subject ordering process**

A list of implemented theses shall be prepared by the office of the Vice-Rector for Education.

3.9. Purchase or provision of training equipment by the company

- **3.9.1. Review of possibilities regarding training equipment, which can be provided by companies as a result of free transfer or symbolic sale.**

Faculty Managers, Specialty Managers or specialty lecturers should explore the possibility of obtaining devices, software or other equipment and materials that are relevant to the conduct of the educational process by free transfer or symbolic sale. These persons should indicate such options to their superiors who should then report to the Office of the Vice-Rector for Education with a request to prepare appropriate agreements. The Vice-Rector for Education should inform the persons responsible about this possibility by 30 October of every year.

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3.9.2. Organization of transfer or sale

The organization of the transfer or purchase of teaching equipment is the responsibility of the Office of the Vice-Rector for Education.

3.9.3. Responsibility for transferred equipment and its usage

Responsibility for transferred equipment and its use should be taken by managers of specific organizational units. Requests for equipment should be made by Faculty and Specialty Managers.

4. Constructing courses and programs offered and graduate profiles

4.1. Consultations on graduate profiles

4.1.1. Ordering consultation

Consultation on graduate profiles should be ordered by heads of departments.

4.1.2. Selection of companies to take part in graduate profile consultation

Selection of companies to take part in graduate profile consultations is the responsibility of the Specialty Manager or Faculty Manager.

4.1.3. Consultations and use of the results

Graduate profile consultations should be conducted by the Specialty Manager or Faculty Manager, who should then report the results to the head of the appropriate unit.

4.2. Diagnostic research on expected skills, knowledge and attitudes

4.2.1. Ordering the research

Diagnostic research should be ordered by the Specialty Manager or Faculty Manager

4.2.2. Selection of companies for research

Selection of companies and workplaces to take part in the research is the responsibility of the Faculty Manager or Specialty Manager.

4.2.3. Research and use of the results

Diagnostic research with companies should be carried out by the Specialty Manager or Faculty Manager, who then reports the results to the head of the appropriate unit.

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4.3. Consultations on assessment methods regarding the learning of practical skills

- **4.3.1. Ordering consultations**

Consultations should be ordered by heads of departments.

- **4.3.2. Selection of companies**

Selection of companies to take part in consultations is the responsibility of the Specialty Manager or Faculty Manager.

- **4.3.3. Consultations and use of the results**

Consultations with companies should be carried out by the Specialty Manager or Faculty Manager, who then reports the results to the head of the appropriate unit.

4.4. Consultation on the content of specialty courses

- **4.4.1. Ordering the consultations**

Consultations should be ordered by heads of departments.

- **4.4.2. Selection of companies for consultations**

Selection of companies to take part in consultations is the responsibility of the Specialty Manager or Faculty Manager.

- **4.4.3. Research and use of the results**

Consultations with companies should be conducted by the Specialty or Faculty Manager, who then reports the results to the head of the appropriate unit.

5. Cooperation in the process of recruitment of students and graduates

5.1. Announcing vacancies for students and graduates at university

- **5.1.1. Informing companies about the possibility of placing job advertisements and information about vacancies on university notice boards**

The Careers Office shall send information to companies about the option of placing job advertisements by 31 March each year.

- **5.1.2. Creating priority advertising opportunities for partner companies**

Companies cooperating with the university, e.g. in organizing internships, will be offered the opportunity to place advertisements on the university's website under the tab "Workplace". This section will be available to students and graduates of UAS

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(until the end of the year following graduation). The Careers Office with the support of the IT specialist will be responsible for these activities.

5.2. Joint recruitment process and job contests

5.2.1. Informing companies about the possibility of organizing a joint recruitment process and job competitions

The Careers Office will inform companies about the possibility of organizing a joint recruitment process and job competitions among students and graduates of UAS by 31 March each year.

5.2.2. Joint recruitment process with business entities

The Careers Office will be responsible for realization of the joint recruitment process (and competitions). Promoters of theses are obliged to support and cooperate with the Careers Office.

5.3. Promotion of cooperation with companies during UAS participation in education fairs

5.3.1. Choice of information provided to potential students at education fairs

The Careers Office shall agree with partner companies on the information relating to their cooperation with UAS which is to be made available to potential students. These arrangements should be made by 28 February each year.

5.3.2. Displaying logos and other promotional elements of partner companies at education fairs

The Careers Office will display the logos and other promotional elements of partner companies at educational fairs and provide information about UAS's cooperation with these enterprises.

5.4. Part-time jobs for students

5.4.1. Job information portal for students

The Careers Office will provide detailed instructions to the IT specialist concerning the content of the "Part-time job" tab on the website. The tab will provide information about part-time jobs available for students. The tab will be administered by the Careers Office.

5.4.2. Informing companies about the possibility of placing advertisements for part-time jobs on the university web page

Twice a year, during the months of March and September, the Careers Office will inform companies in the region about the possibility of placing advertisements for part-time jobs on the university web page.

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6. Support for UAS from business

6.1. Business Advisory Council

6.1.1. Appointment of Council

The Vice-Rector for Education will propose the members of the Advisory Council to the Rector and prepare letters of invitation. Entrepreneurs regularly cooperating with the university will be invited to become members of the Council.

6.1.2. Organization of Council meetings

The Vice-Rector for Education, with the approval of the Rector, will prepare a framework program of Council meetings (at least two meetings per year). This program will be presented to the Council, discussed, amended and adopted.

6.2. Companies supporting UAS

6.2.1. Determining the category/type of companies supporting the university

The Vice-Rector for Education together with the Agent for Student Internships and the Careers Office will determine the categories and types of companies cooperating with the university. Those categories should cover at least all the partners, sponsors and patrons.

6.2.2. Information about granting the status of partner company to individual entities

Entities which meet the requirements specified in the criteria will be informed to that effect and information about the status given will be posted on the UAS website.

6.3. Corporate scholarships for top students

6.3.1. Informing companies about the possibility of funding scholarships for top students

Each supporting company can fund a scholarship (named after the company) for top students. The Vice-Rector for Education with the support of his office will inform companies about this possibility by June 30.

6.3.2. Organization of competitions

The Vice-Rector for Education will develop the framework regulations for corporate scholarship competitions for the best students and invite business representatives to be part of the jury.

6.4. Funded scholarships

6.4.1. Informing companies about the possibility of funding scholarships for students with a guarantee of work

Any company can fund a scholarship for students which guarantees work for the student. The student is then obliged to work through the designated period in the

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enterprise funding the scholarship. The Vice-Rector for Education with the support of his office will inform companies about this possibility by June 30.

- **6.4.2. Organization of competitions**

The Vice-Rector for Education will develop framework regulations for funded scholarship competitions for students and invite business representatives to be part of the jury. The representative of the funding company will have the casting vote, while the representative of UAS will play an advisory role.

7. Timetable and persons responsible

No of activity	Type of activity	Deadlines and persons responsible		
3.	**Action plan regarding shaping the educational process**	**Year 2011/12**	**Year 2012/13**	**Year 2013/14**
3.1.	Using program package delivered within SKIFF project			
3.1.1	Analysis of the package from the standpoint of university needs	By November 30 each year; Managers of organizational units	By November 30 each year; Managers of organizational units	By November 30 each year; Managers of organizational units
3.1.2.	Placing the package on the university website	By October 30 Decision of Vice-Rector for Education Implementation: IT specialist		
3.1.3.	Analysis of results from the research survey carried out with the package	All year On completion of the research Faculty Managers, Specialty Managers	All year On completion of the research Faculty Managers, Specialty Managers	All year On completion of the research Faculty Managers, Specialty Managers
3.1.4.	Customizing the university educational program in line with the recommendations of entrepreneurs and students	From the new academic year Managers of organizational units	From the new academic year Managers of organizational units	From the new academic year Managers of organizational units

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No of activity	Type of activity	Deadlines and persons responsible		
3.2.	Student internships			
3.2.1.	Appointment of UAS Agent for student internships	Rector At the beginning of academic year		
3.2.2.	Development of a plan for cooperation with companies in the field of student internships	By February 28 Agent for Student Internships	By February 28 Agent for Student Internships	By February 28 Agent for Student Internships
3.2.3.	Implementation and monitoring of the plan for cooperation with companies by the Agent for student internships	All year	All year	All year
3.3.	Organization of free of charge lectures and courses with business representatives at UAS			
3.3.1.	Informing companies about the possibility of giving lectures on business practice at UAS – visible info on the university website	All year UAS lecturers IT specialist	All year UAS lecturers IT specialist	All year UAS lecturers IT specialist
3.3.2.	Providing technical and organizational capacity to organize lectures by business representatives	All year UAS lecturers Planning department	All year UAS lecturers Planning department	All year UAS lecturers Planning department
3.3.3.	Documentation of lectures	Lecturers	Lecturers	Lecturers
3.4.	Organization of chargeable, specialist lectures by business representatives			
3.4.1.	Establishing level of demand for chargeable, specialist courses	By June 30 Managers of Specialty or Faculty	By June 30 Managers of Specialty or Faculty	By June 30 Managers of Specialty or Faculty
3.4.2.	Selection of lecturers	By August 31 Managers of Specialty or Faculty	By August 31 Managers of Specialty or Faculty	By August 31 Managers of Specialty or Faculty

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No of activity	Type of activity	Deadlines and persons responsible		
3.4.3.	Monitoring the level of achievement of educational objectives and documentation of the process	By June 30 (monitoring of the previous year) Evaluation Specialist	By June 30 (monitoring of the previous year) Evaluation Specialist	By June 30 (monitoring of the previous year) Evaluation Specialist
3.5.	Organization of specialist training centers			
3.5.1.	Informing companies about the possibility of creating training centers at UAS	By February 28 Vice-Rector for Education (Office) + Agent for Student Internships	By February 28 Vice-Rector for Education (Office) + Agent for Student Internships	By February 28 Vice-Rector for Education (Office) + Agent for Student Internships
3.5.2.	Development of model agreement of cooperation in organizing and implementing company's training center at UAS	By February, 28 Vice-Rector for Education (office)		
3.5.3.	Monitoring of the functioning of the Training Center	All year Training Center Counselor	All year Training Center Counselor	All year Training Center Counselor
3.6.	Workshops and trainings in companies			
3.6.1.	Seeking opportunities for the organization of workshops and training in companies	By October 30 Faculty Managers, Specialty Managers, Lecturers	By October 30 Faculty Managers, Specialty Managers, Lecturers	By October 30 Faculty Managers, Specialty Managers, Lecturers
3.6.2.	Recruitment and supervision of students participating in workshops and training in companies	November 2 – May 30 UAS Lecturers	November, 2 – May 30 UAS Lecturers	November, 2 – May 30 UAS Lecturers
3.6.3.	Monitoring and documentation of external training	November, 2 – May, 30 UAS Lecturers	November, 2 – May, 30 UAS Lecturers	November, 2 – May, 30 UAS Lecturers
3.7.	Providing data for theses			
3.7.1.	Organizational support for individual students in acquiring data from companies	All year Promoters	All year Promoters	All year Promoters

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No of activity	Type of activity	Deadlines and persons responsible		
3.7.2.	Identification of partners for framework agreements regarding data sharing	By June 30 Promoters, Agent for Student Internships, Vice-Rector for Education	By June 30 Promoters, Agent for Student Internships, Vice-Rector for Education	By June 30 Promoters, Agent for Student Internships, Vice-Rector for Education
3.7.3	Signing of framework agreements with regular partners, allowing students access to data for theses	By September 30 Vice-Rector for Education	By September 30 Vice-Rector for Education	By September 30 Vice-Rector for Education
3.8.	Ordering case study development in the form of student theses			
3.8.1.	Informing companies about the possibility of suggesting topics for student theses	By September 30 Vice-Rector for Education, Agent for Student Internships, IT Specialist	By September, 30 Vice-Rector for Education, Agent for Student Internships, IT Specialist	By September, 30 Vice-Rector for Education, Agent for Student Internships, IT Specialist
3.8.2.	Directing the suggested subjects to the promoters and students	All year Vice-Rector for Education	All year Vice-Rector for Education	All year Vice-Rector for Education
3.8.3.	Documenting the implementation of theses realized on companies' suggestions	After students' final exams Promoters	After students' final exams Promoters	After students' final exams Promoters
3.9.	Purchase or provision of training equipment by the company			
3.9.1.	Review of possibilities regarding training equipment available from companies by free transfer or symbolic sale	All year Faculty Managers, Specialty Managers, Specialty Course Lecturers	All year Faculty Managers, Specialty Managers, Specialty Course Lecturers	All year Faculty Managers, Specialty Managers, Specialty Course Lecturers
3.9.2.	Organization of transfer	All year Office of Vice-Rector for Education	All year Office of Vice-Rector for Education	All year Office of Vice-Rector for Education

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No of activity	Type of activity	Deadlines and persons responsible		
3.9.3.	Responsibility for transferred equipment and its use	Managers of organizational units	Managers of organizational units	Managers of organizational units
4	**Developing courses, programs and graduate profiles**			
4.1.	Consultations on graduate profiles	Time: In case of modification, change or new application	Time: In case of modification, change or new application	Time: In case of modification, change or new application
4.1.1.	Ordering consultation	Managers of Specialty or Faculty (Realization: Dean)	Managers of Specialty or Faculty (Realization: Dean)	Managers of Specialty or Faculty (Realization: Dean)
4.1.2.	Selection of companies to take part in graduate profile consultation	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
4.1.3.	Consultations and use of the results	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
4.2.	Diagnostic research on expected skills, knowledge and attitudes	Time: in case of modification, change or new application	Time: in case of modification, change or new application	Time: in case of modification, change or new application
4.2.1.	Ordering the research	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
4.2.2.	Selection of companies to survey	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
4.2.3.	Research and use of the results	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
4.3.	Consultation on methods of assessing acquisition of practical skills	Time: in case of modification, change or new application	Time: in case of modification, change or new application	Time: in case of modification, change or new application
4.3.1.	Ordering consultations	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
4.3.2.	Selection of companies	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
4.3.3.	Consultations and use of the results	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty

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No of activity	Type of activity	Deadlines and persons responsible		
4.4.	Consultation on the content of specialty courses	Time: in case of modification, change or new application	Time: in case of modification, change or new application	Time: in case of modification, change or new application
4.4.1.	Ordering the research	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
4.4.2.	Selection of companies for consultations	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
4.4.3.	Research and use of the results	Managers of Specialty or Faculty	Managers of Specialty or Faculty	Managers of Specialty or Faculty
5	**Cooperation in recruitment of students and graduates**			
5.1.	Announcing vacancies for students and graduates at university			
5.1.1.	Informing companies about the possibility of placing job advertisements and information about vacancies on university notice boards	By March 31 Careers Office	By March 31 Careers Office	By March 31 Careers Office
5.1.2.	Creating priority advertising opportunities for partner companies	By June 30 Careers Office IT specialist		
5.2.	Joint recruitment process and job competitions			
5.2.1.	Informing companies about the possibility of organizing a joint recruitment process and job competitions	By March 31 Careers Office	By March 31 Careers Office	By March 31 Careers Office
5.1.2.	Creating priority advertising opportunities for partner companiesies	All year Careers Office	All year Careers Office	All year Careers Office
5.3.	Promotion of cooperation with companies during UAS participation in education fairs			
5.3.1.	Choice of information provided to potential students at education fairs	By February 28 Careers Office	By February 28 Careers Office	By February 28 Careers Office
5.3.2.	Displaying logos and other promotional elements of partner companies at education fairs	All year Careers Office	All year Careers Office	All year Careers Office

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No of activity	Type of activity	Deadlines and persons responsible		
5.4.	Part-time jobs for students			
5.4.1.	Launch of job information portal for students	By January 31 Career Office IT specialist		
5.4.2.	Informing companies about the possibility of placing advertisements for part-time jobs on the university web page	By February 28 Careers Office, IT specialist	By February 28 Careers Office, IT specialist	By February 28 Careers Office, IT specialist
6	**Support for UAS from business**			
6.1.	Business Advisory Council			
6.1.1.	Appointment of the Council	By May 30 Rector, Vice-Rector for Education and his Office		
6.1.2.	Organization of Council meetings	Twice a year Vice-Rector for Education and his Office	Twice a year Vice-Rector for Education and his Office	Twice a year Vice-Rector for Education and his Office
6.2	Companies supporting UAS			
6.2.1.	Determining the category/ type of units supporting the university	By December, 31 Vice-Rector for Education, Agent for Student Internships, Careers Office, Rector		
6.2.2.	Information about granting the status of partner company to individual entities	All year Rector	All year Rector	All year Rector
6.3.	Corporate scholarships for top students			
6.3.1.	Informing companies about the possibility of funding scholarships for top students	By June, 30 Vice-Rector for Education, Office of the Vice-Rector	By June, 30 Vice-Rector for Education, Office of the Vice-Rector	By June, 30 Vice-Rector for Education, Office of the Vice-Rector

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No of activity	Type of activity	Deadlines and persons responsible		
6.3.2.	Organization of competitions	By October 30 Vice-Rector for Education together with entrepreneurs	By October 30 Vice-Rector for Education together with entrepreneurs	By October 30 Vice-Rector for Education together with entrepreneurs
6.4.	Funded scholarships			
6.4.1.	Informing companies about the possibility of funding scholarships for students with a guarantee of work	By June 30 Vice-Rector for Education, Office of the Vice-Rector for Education	By June 30 Vice-Rector for Education, Office of the Vice-Rector for Education	By June 30 Vice-Rector for Education, Office of the Vice-Rector for Education
6.4.2.	Organization of competitions	By October 30 Vice-Rector for Education together with entrepreneurs	By October 30 Vice-Rector for Education together with entrepreneurs	By October 30 Vice-Rector for Education together with entrepreneurs

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