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The Journal of Didactics (JoD) is an academic journal published in electronic format by the Department of Didactics of the Human Sciences (Faculty of Psychology and the Sciences of Education) of "Babeş-Bolyai" University Cluj-Napoca (Romania). JoD is envisaged as a medium for disseminating the research in the human and exact sciences and as an open space for the academic exchange of ideas between researchers and educators (at both university and pre-university level) from Romania and abroad. In this sense, the Editorial Board of JoD encourages the publication, in English and Romanian, of:

- # articles and qualitative and quantitative studies in the field of didactics;
- # reviews of recent significant publications from Romania and abroad;
- # translations into Romanian of landmark text from the (more or less) recent history of the field;
- # comments and analyses of the ideas expressed in the pages of the present journal or of current issues regarding the Romanian and foreign educational politics and policies

Because didactics itself is a cross-border discipline between the different sciences of education, social and human sciences, the Editorial Board of JoD strongly encourages inter- and multi-disciplinary approaches.

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A Note from the Editor

We are happy to announce that starting with this double issue of The Journal of Didactics Prof. Alina Zapalska of the U.S. Coast Guard Academy, U.S.A. and Prof. Wil Meeus of the University of Antwerp, Belgium will be joining the Advisory Board.

We would like to take this opportunity to give them a warm Welcome!

The Editors

Articles

The Problem of Translation: Science and the Language of Science in the Classroom

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Abstract It requires sophisticated language skills both to understand what is being taught in any science classroom and to express what has been understood. The combination of the complex language normal in science and the layers of meaning inherent in even very simple concepts can generate text and speech incomprehensible to some students and confusing to many. While we all strive for clarity and an appropriate level of simplicity in our teaching it is helpful to consider the challenge posed to students. I provide some measure of the magnitude of the challenge and suggest some simple approaches to coping with it.

Key words concept layering; concept map; language; mind map; reading.

Background

Scientists must be both literate and numerate, but it is often claimed that there has been a sustained decline in the literacy and numeracy of students. While the decline in numeracy is relatively well substantiated (Engineering Council 2000; Hourigan and O'Donoghue 2007; Todd 2001; Tariq 2002; Lawson 2003; Hunt and Lawson 1996), the evidence for a decline in literacy is weaker and subject to arguments about what is meant by 'literacy' and the impact of changing government policy (Absalom and Golebiowski 2002; Rothman 2002). Inevitably, there is a correlation between language skills and academic progress (Bretag 2007; Feast 2002; Holder et al. 1999), such that those students that have poorer skills tend to perform less well. Unsurprisingly, those students that have prior experience relevant to the subject matter tend to cope better than those that do not (Symons and Pressley

1993; McKeown et al. 1992). Consequently, some students perform relatively well despite poor literacy.

Students build knowledge on their preconceptions. Such preconceptions are often erroneous and they can be difficult to modify (Feltovich et al. 1994), so it is important that teachers have some appreciation of them (Morrison and Lederman 2003). However, an appropriate grasp of the necessary language (spoken, written and graphic depending on the circumstances) is required, not only to express and formulate a thought (Best 1979), but also to understand it.

While the student ‘constructs’ a body of knowledge, the teacher is implicitly blamed for engendering ‘misconceptions’, by the use of language inappropriate to the student (Zeidler and Lederman 1989) and the inapposite juxtaposition of knowledge and ideas with the preconceptions of the student. Miscommunication is very common in everyday life, so it is likely to be even more common when dealing with technical matters because the language used is much more demanding and the concepts are (probably) more challenging. In classrooms, miscommunication is probably inevitable despite the best efforts of outstanding teachers. Teachers can only work to identify ‘misconceptions’ and modify them.

University teachers usually teach from a research perspective, emphasizing questioning, models and experiments, rather than ‘facts’. This is, perhaps, different from secondary teachers. For example, Clerk and Rutherford (2000: 703) state that a “... misconception exists when the structure of an individual’s model differs from that of the situation it is meant to represent”, but few research scientists confuse a model with the ‘reality’ it represents (Korzybski 1994), if only because research teaches one that today’s concept is very likely to be modified tomorrow. One consequence of this attitude is that scientists tend to disagree and such disagreement is almost inevitable.

What do we expect of our students?

Like our colleagues elsewhere (Intersegmental Committee of the Academic Senates 2002; Academic Senate for California Community Colleges 2003), I hope that students can write in sentences, using the words (and concepts) that they have been taught, and can construct an argument using pre-existing skills and knowledge. Just as importantly, I anticipate that they will be able to read and comprehend the text they encounter, interpret the arguments and, hopefully, apply this knowledge in future situations.

I also require that students learn to think in particular ways, but this is also connected with language. Some students may see this as part of a cultural straightjacket. For example, a Xhosa speaking South African student of speech and hearing therapy, wrote “[s]o your job as teachers is make me think like you: to think straight-haired and western, to deny my whole life of being part of others. You need me to join you in being ‘objective’, in writing ‘scientifically’, in setting principles on your idea of helping.” (Mpumlwana 2000: 537) and “[y]ou fail me because I cannot express myself in your language, as well as the English speaking students, and I fail because I have to learn more than the words of your teaching — I have to give back to you the way you think. This is what you are really testing, this is how you assess my ‘intelligence’. You test to see whether I have learnt to think like you yet.” (Mpumlwana 2000: 539). This juxtaposition of language and patterns of thinking is reminiscent of Best’s (1979: 217) argument that “... the learning of linguistic techniques is a necessary precondition of the capacity in an individual for philosophical thinking and ideas.” However, some students assert that language and comprehension are not interdependent. For example, Elizabeth, a potential ‘teacher of reading and writing’, is quoted by Ryan (1997: 57-58) as saying that “[t]he reason why I didn’t go as well [as I’d like on my assignments] ... the writing on my assignments wasn’t up to scratch. ... I understood the subject ... but I couldn’t write it”. Elsewhere, however,

Elizabeth makes it clear that the problem is not just writing: “That was the biggest problem. ... Just getting the text and understand the text and be able to write about the text as well as be able to incorporate what we learned in class” (Ryan 1997: 59). The language of science communicates patterns of thought and argument.

Unfortunately, the language used in science, like many other disciplines, is textually and conceptually complicated (Nordquist 2008), which is exacerbated by the pervasive use of analogy (Brown and Salter 2010). The vocabulary is extensive, even at secondary level (Daug and Daug 1974; Yager 1983; Groves 1995). Many of these words have more than one technical meaning (for example *solution* has both chemical and mathematical meanings) and some are also used colloquially (such as *acid* and *osmosis*), sometimes in ways that conflict with the technical meaning (Brown 2011). Moreover, the words are often polysyllabic, qualified in some way, derived from foreign words, may incorporate numbers, Greek letters, superscripts and subscripts, may be abbreviated in some way (like ATP or NAD^+ each of which is often used by biologists) and may also encode subtle concepts. All of which prompts the suggestion that “...science is in many ways the natural enemy of language”, not least because of the tendency to use “... dry and abstract terms, taken from some dead language, and deprived of all life and personality” (Smith 1912: 124-125). While some would agree with this, more evocative language is applied in a few areas of more modern science.

While vocabulary is usually the main focus of discussions of scientific communication (Crystal 2006), it is not the main obstacle to be overcome (Daug and Daug 1974; Halliday 1993). Sentences constructed using these words have complex structure (Daug and Daug 1974), include numbers (and associated units), refer to figures, tables, other sections, mathematical or chemical equations and, perhaps, references, and may incorporate acronyms and abbreviations. The result is complex text that can provide a significant challenge even to those who are more than just ‘literate’ (Brown 2011).

Language is complicated by conceptual interconnections

The semantic complexity of the text is exacerbated by the incorporation of concepts, images or symbols and language from a range of disciplines. Concepts form laminations reminiscent of geological strata, so that once one layer has been decoded and the concept assimilated, it becomes apparent that another layer or concept is involved.

This stratigraphy is partially captured by the ‘concept maps’ and ‘mind maps’ that are used in many classrooms (Jensen 2000; Presler 2004; Afamasaga-Fuata'i 2007; Austin and Shore 1995; Donald 1983; Hegarty-Hazel and Prosser 1991, 1991; Kinchin 2000; Novak 1991, 1993; Taber 1994), in which the logical connections between concepts are represented diagrammatically in a graph. These are not necessarily interchangeable terms because some authors distinguish maps that contain no cycles (‘mind maps’) from those that may contain cycles (‘concept maps’). Based on these definitions, a ‘mind map’ is a rooted, labelled tree (the root being the central concept), whereas a ‘concept map’ is a labelled graph that may contain cycles demonstrating relationships between multiple concepts. An acyclic ‘concept map’ could be a ‘mind map’, and either species of ‘map’ can be approximated as a graph. For n concepts, a ‘mind map’ has $n - 1$ connections and a ‘concept map’ has between $n - 1$ and $n(n - 1)/2$ connections depending on the number of cycles (Harary 1969).

Representing the logical connections between ideas as a graph appears to help students comprehend complex concepts, especially if the students develop the graph themselves (Taber 1994; Austin and Shore 1995; Afamasaga-Fuata'i 2007). However, for any graph there are many alternatives, for example, concentration (c), usually expressed in moles per litre (mol L^{-1}), is a measure of the number of moles (n) of a substance in a particular volume (V). A mole is Avogadro's number (N_A) of atoms or molecules, so a compound has a molar mass (M) that is the sum of the mass of N_A of each of

the constituent atoms. Logically, c requires knowledge of both n and V , and an understanding of n implies some idea about M , which leads to the concept map enclosed in a square in Figure 1. However, someone unfamiliar with this idea, as many students appear to be (Furió, Azcona, and Guisasola 2002), might consider that different connections could be drawn between c , n , V and M (Figure 1).

Irrespective of whether one considers a ‘mind map’ or a ‘concept map’, the number of maps increases rapidly with the number of concepts (Figure 2). For a ‘mind map’ involving n concepts (such as those shown in Figure 1, for which $n = 4$), there are n^{n-2} different ways of connecting them by $n - 1$ links (Cayley 1889), although there are considerably fewer distinct morphologies (there are 4 for $n = 4$ (Otter 1948), Figure 1). Moreover, the numbers would be increased if the possibility of disconnected concepts, such as those in some of the examples given by Austin and Shore (1995), is considered.

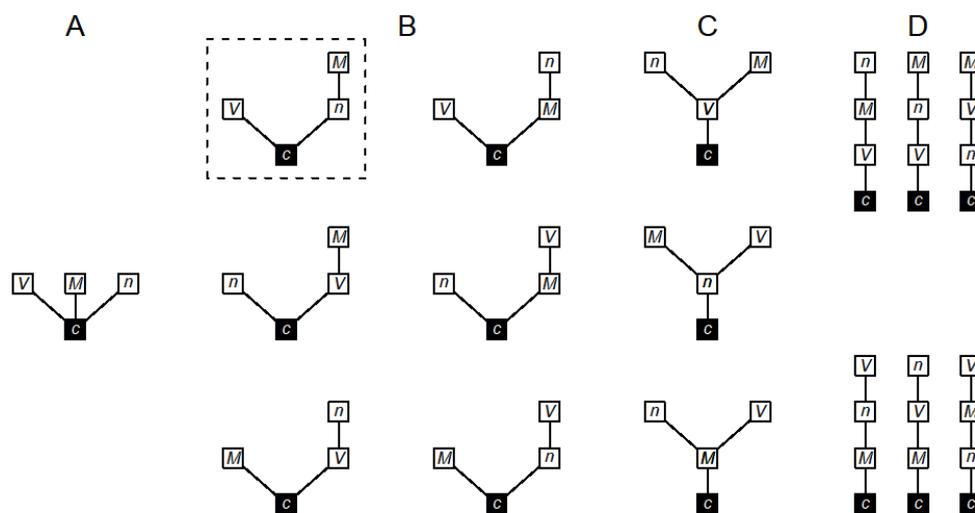


Figure 1. The sixteen possible ‘mind maps’ (trees) linking concentration (c), volume (V), number of moles (n) and molar mass (M). Of course, it would be logical to include a mass, but the number of possibilities would increase dramatically (Figure 2), so we have not included it here. The trees are arranged according to the four distinct tree morphologies (A–D at the top of the figure). The map in the upper row of group B (enclosed in a square) is the standard model described in the text.

The huge number of alternative graphs arising from just a few concepts explains in part the tendency of students to link ideas in an illogical way or not link them at all when their grasp of the technicalities is not strong (Austin and Shore 1995). Introducing challenging new language elements exacerbates the demands placed on the students.

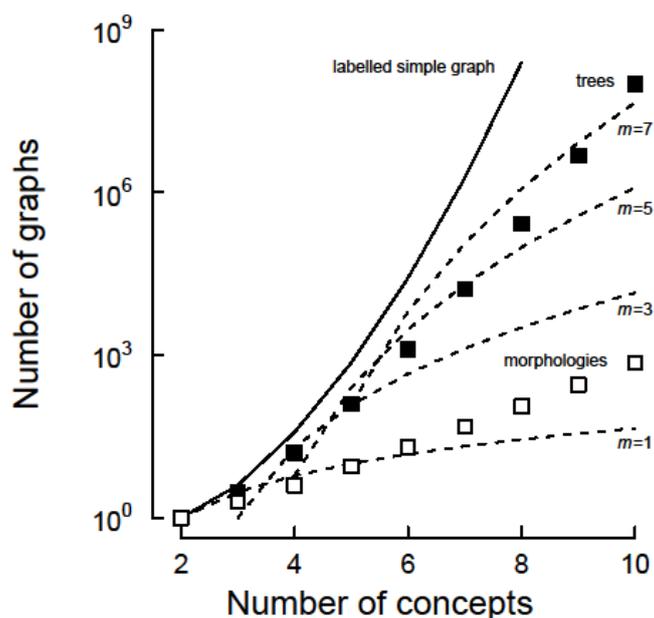


Figure 2. The number of possible ‘concept maps’ and ‘mind maps’ for up to 10 concepts. The numbers of ‘mind maps’ (trees, ■) and the estimated number of distinct morphologies (□) were calculated using the expressions given by Cayley (1889) and Otter (1948), respectively. The numbers of ‘concept maps’ (labeled, simple graphs) allowing disconnected concepts (—) or various numbers of connections (---) were calculated using the expressions given by Rosen *et al.* (2000: 613).

An example

Put yourself in the position of a student and try to decode this text taken from a frequently used excellent biochemistry textbook (Lehninger, Nelson, and Cox 2005: 286)

Nucleotides participating in a Watson-Crick base pair (Fig. 8-11) can form a number of additional hydrogen

bonds, particularly with functional groups arrayed in the major groove. For example, a cytidine residue (if protonated) can pair with a guanosine residue of a G≡C nucleotide pair, and a thymidine can pair with the adenosine of an A=T pair (Fig. 8-22). The N-7, *O*⁶, and *N*⁶ of purines, the atoms that participate in the hydrogen bonding of triplex DNA, are often referred to as Hoogsteen positions....

As you read, imagine that you are not entirely sure what a nucleotide is, you might be confused a nucleotide and a nucleoside, and the chemical structures may be of relatively little assistance; ask yourself what N-7 and *O*⁶ mean, why the “*O*” is italicised and the “6” superscripted, and what is “triplex DNA”. Then there is the word “protonation”, which should prompt coherent thoughts of *pK_a*s and pH. There are, of course, other questions that arise from this passage, but hopefully this is sufficient to illustrate the challenge faced by a student.

Of course, it is easy to select a short passage of obscure text from an otherwise excellent book, but each student will find her or his own obscure passages and a teacher will not necessarily be able to identify them. Ideally, a student would just read the equivalent material in several different textbooks, in the hope that one of them might offer a comprehensible explanation, and then develop the concept in discussion with other people. Of course, this takes time, resources, the ability to read and communicate efficiently and effectively and, ultimately, the ability of the student to initially identify that they have a problem with understanding and synthesis of the text.

[Approaches to coping with the language barrier](#)

Larry Yore (2008) wrote that “[l]anguage is an intimate, inseparable part of doing and learning science – it influences the science and does not

simply report the processes, procedures, and results of scientific inquiry or simply represent the conceptual network of canonical science”. It follows that the language used in the classroom is critical to successful teaching of science. There are several natural approaches to coping with barriers to communication, such as careful use of language and graphical aids, making clear connections with related areas familiar to the student and modelling appropriate behaviour. However, the teacher must also have some understanding of the elements of the linguistic challenges that the student encounters (Halliday 1993).

Of course, the language used by a teacher should be as simple as possible given the demands of the subject; new terms should be clearly defined, ideally with links to pre-existing vocabulary; there should be a minimum of qualification (sometimes a slightly inaccurate conception is better than nothing, as is illustrated by the standard practice of teaching to the level appropriate for the student (Osborne and Freyberg 1985: 62; Tall 2002:61) and is often unavoidable because of the very high probability of a pre-existing ‘misconception’; and sentences should be as simple as possible. When talking with a single student, the language and level of presentation should be appropriate to that student (Osborne and Freyberg 1985: 62). This can be extended as the student gains confidence. Similarly, diagrams, animations and games should be constructed carefully to ensure that the desired impression is conveyed to the student.

Tertiary science teaching is often about questioning and analysis as much, if not more, than the dissemination of ‘facts’. Consequently, it is important that teachers model the behaviour of the profession for the students by constructing arguments and building diagrams in class. Similarly, students need to be exposed to dealing with and identifying error, so teachers should be clear about mistakes and their implications. Despite the natural disinclinations of teachers to deliberately make errors, they are inevitable and they can be valuable (Wassermann 1989; Williams 1987; Singer 1977; Muller et al. 2008;

Reisin 1990), if only because they provide a means of modeling ‘real’ science (Galus 2000). Furthermore, by making the connections with other material with which the students are familiar, the teacher can reinforce the logical links.

Of course, students should be encouraged to discuss science and develop questions (Brown 2011). Not only does this provide practice in using the language and the technical material, but it also assists students to identify their own strengths and difficulties. Each student benefits from helping others to come to terms with the material and common problems or points of contention are discovered. This is a strategy commonly employed by practicing scientists and represents a collective means of building knowledge and developing questions. The next logical step is to apply this (with the necessary support) to the design of experiments to test the questions previously identified. If these experiments can then be carried out, the students are actually involved in the practice of science and will have learnt much more than just some technicalities.

Conclusion

As the language skills of students decline, the combination of the demanding language used to express technical concepts and conceptual stratigraphy presents an overwhelming challenge for many students. If students are to be helped to develop their language skills, the teacher must strive for simplicity, clarity and precision of expression: in so doing one simply models good professional behaviour.

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Webquests, or How the Internet Can Be a Textbook in Education

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Abstract A webquest can be understood as a digital textbook, where the teacher formulates a sequence of searches for the pupils to carry out within certain, predefined internet sources. Webquests combine the richness of the information available on the Internet with the structural orientation of education, and challenge pupils at all levels to develop the complex information-processing skills needed in contemporary society. Varying from more open to more closed in nature, webquests can be performed by pupils processing information independently or cooperatively, with the teacher playing the role of facilitator. Like other instruments and methods, webquests deliver superior education only when the webquests itself and the teacher's approach are of good quality. In such cases, webquests are didactically sound, modern instruments that certainly deserve recognition in content-specific education.

Key words webquest, textbook, ICT, Internet, information processing

1. From textbook to webquest

A good textbook can be of invaluable assistance in many educational subjects, but they also have their limitations in these modern times. Certain types of content date so rapidly that a reprint may be required almost every year. The learning material included in textbooks is also restricted to that which can be printed on paper, and therefore excludes audio or video. In order to respond to these problems, newer textbooks are being supplemented with digital material, such as CDs or URLs that direct the learner to online material. Since digital information is already being used to complement textbooks in this way, the idea of a fully digitised textbook available online is increasingly becoming a reality.

It is now relatively easy to upload an entire textbook to the Internet in digital form. The advantage of doing this is that audiovisual material can be included, and that hyperlinks can be used to interconnect other resources. Yet very few digital textbooks exist, perhaps because digital information requires a different structure: it is less linear and more associative. In cases where digital textbooks are presented in their classic form, i.e. where we move directly and exclusively from (web)page 1 to (web)page 2, the use of the Internet becomes too restrictive. This linear characterisation misjudges the nature of digital information, which is typically divided into relatively small units that are interconnected by crisscrossing hyperlinks. A successful digital textbook should therefore be structured in an associative rather than linear way.

This may be rather difficult to put into practice, however, since those who regularly surf the Internet know that associative structuring can quickly lead to chaos. Random highlights determine our pathways through the Internet, and within a short space of time we can lose sight of our quest's starting point. This distracting feature of the Internet conflicts with the intentionality of education, where educators prefer to provide their pupils with well-defined, well-structured packages of learning content. This, unfortunately, seems to contradict the very nature of digital information.

However, we are also familiar with structural elements of the digital world that are able to instil a sense of order, such as a website's homepage, for example, navigation buttons that list important items in separate frames on a website, navigation bars that indicate the user's progress through the website, search functions, and so on. A textbook might therefore be redrafted in the form of such a structured website, in order that the benefits of digital information can be enjoyed while the disadvantages are limited. In this way, pupils can learn associatively within delineated sets of information and multimedia.

So much information is already available on the Internet that it sometimes is sufficient for teachers to provide their pupils with only a very simple task outline, such as a series of questions or assignments and a list of links to online resources where the answers or solutions can be found, and thus a webquest is created. In this way, a webquest can be understood as a digital textbook or part of a digital textbook, where the teacher formulates a sequence of searches for the pupils to carry out within certain, predefined Internet sources. Many examples of webquests are, of course, available online.

2. Webquests and the acquisition of information skills

One of the most important characteristics of webquests is that they combine rich online sources of information with education's structural guidance. Naturally, open online searches are also very useful for certain educational purposes, especially if the result of the search is also open, i.e. when the pupils themselves select information from the Internet and to decide how to report it in a meaningful way. This is a key strategy in project-based learning, for example.

However, teachers generally have very clear learning objectives in mind, and where this is the case, task instructions such as 'search online for information about X' offer insufficient guarantee that the pupils will achieve the learning objectives intended. In order to avoid this, lesson preparation will necessarily involve the teacher's selecting websites that he or she considers suitable for pupil use. Dutch research performed among 229 Year 8 pupils (aged 12) has proven that boys in particular achieved better results when performing more structured searches, such as webquests, than open searches, such as Google searches (Segers & Verhoeven, 2009).

The likelihood of pupils becoming distracted or 'lost' is much slighter when searches are carried out within the limits of websites selected by the teacher beforehand. Unreliable or irrelevant sources can also be avoided. At

the same time, a number of challenges still remain for pupils. They will still need to choose appropriate search terms, for example, locate the right information, process it correctly, create a summary and perhaps also design an appropriate reporting form.

Webquests challenge pupils at all levels to develop the complex information-processing skills needed in contemporary society. The call for greater integration of the Internet and ICT in education can be justified in the context of societal developments, and webquests are one of the many ways in which this objective can be achieved. A European study conducted among 185 teachers with experience of developing webquests at various educational levels revealed that 71% rated the webquest a 'good to excellent' instrument for integrating the Internet in the learning process (Gorghiu, Gorghiu, González, & García de la Santa, 2005). In particular, webquests are felt to be suitable for areas of the curriculum, which have well defined learning objectives. Because of this, they may be usefully employed for specific purposes within subjects. The learning content must be reasonable and capable of being processed independently by the pupils, so webquests may therefore be less suitable for teaching very difficult course content.

3 Organising a webquest

A webquest is a kind of digital learning path that pupils follow in order to acquire a given set of learning content independently. The teacher provides the pupils with the necessary instructions in advance, so that intermediate intervention by the teacher can be minimised. These instructions contain information about which tasks are to be performed (compulsory or optional), how and where the pupils can work, and how much time is available. All pupils have a certain amount of learning time available to conclude the webquest independently and successfully. Classroom learning time is guaranteed for the pupils, but can also be extended through homework, which

will allow teachers and pupils to compensate for differences in pace, for example. Webquests can be a combination of compulsory and/or optional assignments, and different webquests can be developed for different (groups of) pupils, the information then being shared with the rest of the class later. The teacher acts as a facilitator in the learning process.

Another advantage of webquests, as demonstrated by small-scale research among pupils in secondary education, is that they can stimulate cooperative learning (Lara & Repáraz, 2007). Pupils are required to decide together on what information should be selected in order to solve a webquest, and pair work is especially popular because the discussion is not limited by major infrastructural constraints. Consultation in larger groups, where all pupils work individually at their own computer, is not possible in all schools. The emergence of open learning centres and the growing use of laptops, however, do offer better prospects.

Assignment types for webquests can be formulated in a number of different ways, and a distinction is therefore drawn between ‘closed’ and ‘open’ webquests, though this is more of a continuum than two strictly separated categories. Closed webquest tasks tend to consist of gap-fill exercises and require rather low-level cognitive processes (such as identifying facts, chronology, concepts, principles, etc.). Open webquest task instructions are restricted to an indication of the structure through which efforts should be made, but the results are to be shaped by the pupils themselves. The pupils can also be instructed to create a piece of coursework, develop a brochure, perform a test or build a construction. Open webquests require higher-level cognition (comparison, classification, abstraction, etc.). If webquests are to be used frequently, it is recommended that teachers prepare a varied range of assignments in order to stimulate different cognitive levels and keep the pupils motivated.

4 The structure of webquests

The structure of a webquest is relatively stable, with a particular set of components being employed frequently. A webquest describes two major parts – the pupils’ part, and the teacher’s part (outlined briefly below):

I. Pupils

- 1) Introduction: a webquest begins with a eye-catching title, motivational introduction and clear information about the purpose and subject of the webquest;
- 2) Assignments: a webquest can consist of one or more assignments that in turn consist of multiple sections or questions that need to be addressed. Each assignment includes a clear description of what the pupils need to do. It indicates:
 - a) what the end product should be, for example, the formal requirements for the text that should be produced;
 - b) which substantive answers and solutions must be found;
 - c) which websites or other resources should be consulted during the search process.
- 3) Assessment criteria: good instructions provide clarity for pupils about the requirements to be met. Teachers should be able to formulate both process and product criteria, and the maximum number of marks available for each answer should preferably be communicated.

II. Teacher

Components of a webquest that are important from the teacher are those parts that allow the teacher easy access to the activity when reusing it, or when sharing webquests developed by other teachers. Such components include:

- 1) The key for correcting the webquest;

- 2) Considerations that must be kept in mind when monitoring and assessing;
- 3) Any interesting additional sources for the teacher;
- 4) The contact details of the webquest author(s).

5. Quality of webquests

A good webquest begins like any good lesson: with a motivating opener. It is important to invest in the design of the webquest, since it is on this basis that pupils will form their first impressions of the activity. The webquest can be illustrated with pictures and colours that match the theme of the webquest, but annoying ‘bells and whistles’ should be avoided. The design should not distract pupils from the content but support it. The webquest introduction should motivate pupils to begin working, and the teacher can also arouse pupils’ curiosity with a mysterious question that will be answered at the end of the activity. A topical event or a humorous or surprising fact may help set the right tone. The teacher should ensure that the first 30 minutes of the webquest contain sufficient motivational elements for the pupils to continue working. The webquest should not be too long: one school hour is felt to be appropriate, and any longer than this may create challenges in maintaining pupils’ interest and motivation.

As with other educational activities, variation is also important. A key advantage of using webquests rather than textbooks is that audiovisual material can be included in the course, and a good webquest will make varied use of the abundant materials available online. In addition to the types of materials employed, variation is also needed in the types of assignments. Reproductive assignments should be combined with productive assignments; knowledge questions with conceptual questions; creative assignments with reflective assignments. Closed questions should be avoided, however, because they tend to lead to copy-paste strategies. Open questions are preferred.

Research conducted among 92 Year 8 pupils (aged 12) in the Netherlands has demonstrated that open questions stimulate information processing better, which especially benefits weaker pupils (Droop , Damhuis, & Segers, 2006). The teacher should ensure that accurate instructions are given so that additional explanation is not required further on in the process.

A good webquest is one without technical difficulties. Many teachers will be familiar with the frustration that arises if a VCR or DVD player fails in a lesson built around a video clip, and everything should be done to avoid similar situations with webquests. The computers, and the Internet connection, should all be working perfectly, as should the sound and speakers. Of course, certain elements will always be beyond the teacher's control, but nothing should be left to chance. All links should also be working, and must therefore be checked shortly before the lesson. Information on the Internet changes very quickly, and it is highly likely that a webquest will contain some dead links when it is reused one year later. Information may have moved, or been removed. Even if the links still work, the information contained on the webpages may have changed.

6. Low-level and deep-level learning

Webquests are not necessarily better than other educational activities or instruments (Abbitt & Ophus, 2008; Gaskill , McNulty, & Brooks, 2006), and the question of whether pupils progress to deep-level learning or remain in low-level learning depends on the quality of the questions and assignments included in the webquest. These questions and assignments should be constructed in such a way that the pupils themselves are required to formulate answers and solutions, having processed the information thoroughly. Questions where pupils can simply copy and paste the answers should be avoided, because they lead to strategies of response detection rather than genuine processing of the learning material. When this happens, pupils

identify the text sections that contain the answers but no longer absorb the information carefully enough to fully understand and remember the subject matter.

The more the webquest instructions emphasise the processing of the learning material, the greater the chances of achieving deep-level learning (Dodge , 2001). It has been suggested that the most effective form of deep-level learning with webquests is when pupils develop webquests for each other, which ties in with the idea that the best way to learn something is by teaching it yourself. This activity places high demands on both pupils and teacher, however. Pupils will require information skills, basic knowledge of the subject matter and knowledge of webquest development, while the teacher must monitor the pupils and support them in such a way that they can develop quality webquests independently. Such an approach is possible only when teacher and pupils have already been through an intensive, phased trajectory of learning to work with webquests. In this case, teams of teachers in schools will face the challenge of developing appropriate learning sequences over successive years of study.

7. Getting started with webquests

During webquests, the teacher plays an important facilitating role. If the pupils are working on a webquest for the first time, it is recommended that the teacher and pupils first go through the webquest together. A short orientation period is usually needed. The next time a webquest activity is used, the pupils will be able to begin much more quickly and confidently.

The teacher should not try to answer pupils' questions immediately, but should first check what kinds of questions are being asked. Pupils sometimes begin too quickly, without having read the assignments and questions thoroughly enough. In this case, the teacher should not answer, but have the pupils reread the assignments. The teacher should also decline to answer

questions concerning content, since that is the pupils' task. This orientation period is the ideal moment for teaching pupils information skills, such as scanning and skimming a text for information. Weaker pupils may need more support in this area, and will not necessarily ask for it, so the teacher should monitor the pupils' progress and the quality of their work throughout the activity. This is rather labour-intensive for a teacher, but will be made easier by his or her being acquainted with the pupils in advance, and knowing which pupils need extra support. If any pupils pose legitimate questions about procedure during this orientation phase, the teacher should keep a record of this. Such questions are very useful when improving the webquest for its next use.

In addition to facilitating, the teacher should also assess. The pupils should be working conscientiously, engaging only with the webquest, and using only those websites specified beforehand. It is recommended that teachers include pupils' working attitude as an assessment criterion, so that their levels of commitment, perseverance and task orientation count towards their marks. The teacher should also make clear how much time is available and what will happen when the time is up.

Difference in pace between pupils is inevitable, and must be anticipated and compensated for by the teacher. Extra tasks can be assigned to faster pupils, or they can be involved in correcting the answers. They could evaluate their own webquests using a correction key, for example, or act as facilitators or even assessors of their fellow pupils. The teacher can also time the task with the strongest pupils in mind, and allow the other pupils a chance to finish it at another time. Whatever solutions the teacher considers, he or she should always be prepared for differences in pace and might also employ a variety of methods to deal with them.

8 Forms of presentation and reporting

A webquest that genuinely fulfils the objective of integrating ICT in education is one that is presented online. Here, the webquest itself is a website, perhaps accessible to pupils only through a secure environment (e.g. with a login and password). On a website, however, it may be difficult to store pupils' responses, except when there are tools available that enable pupils to submit and save their answers online. A better solution may be to have pupils create a separate document in which they record their answers. Clear instructions must be given about how and where pupils should name and save the document. A backup system may also be advantageous, in order to prevent pupils losing their work. The electronic learning platforms which many schools now make use of could be used for downloading and submitting documents.

A presentation form which avoids the difficulties mentioned above is a webquest in a simple Word document. The pupils can download it, follow the links included directly, and save their answers in the same document. For assessment purposes, the document can easily be forwarded to the teacher or even printed if necessary. Again, clear instructions should be given about how to save the document correctly.

9. Conclusion

Perhaps the main advantage of using webquests in the classroom is that they integrate ICT and the Internet in the learning process in a smooth and modern way. They are didactical instruments - useful tools for educational practice - and in this sense they increase the opportunities for variation and pupil motivation. They certainly have added value compared to the classic textbook, because of the way that multimedia can be integrated. At the same time, the methodology required for working with webquests remains

comparable to that required for working with textbooks. Webquests offer a highly structured learning environment where little is left to the pupils' own impulses. Pupils work independently, and the teacher engages in a facilitating role. Pupils can process information either individually or cooperatively. Along with the webquest content, the learning process primarily emphasises independent information processing, and this is why the instrument can be widely embraced in content-specific education. In conclusion, webquests are a very welcome addition to the range of didactic instruments and methods currently available.

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The Use of Audio-Visual Resources to Enhance the Acquisition of Cultural Knowledge

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Abstract This paper intends to provide arguments in favour for integrating audio-visual resources in the learning and teaching of a foreign language. These authentic resources would offer students the possibility to become familiar with different genres, registers, and (inter)cultural perspectives. In addition, students would develop both their socio-linguistic and pragmatic competence. The paper presents different types of audio-visual aids that have been used in order to deliver a Swedish language project.

Key words cultural perspective; audio-visual resources; media literacy; intercultural speaker; socio-linguistic competence; pragmatic competence; authentic resources.

This paper is comprised of two parts. In the first part, we intend to provide various arguments that sustain the idea according to which a foreign language and its culture should be acquired simultaneously, in a given context. Learning these apart could lead to acquiring an *incomplete* language competence that targets just the linguistic competence. We aim to bring up for discussion the relationship between language competence and intercultural competence. This paper favours the use of diverse didactic resources, such as music, films and other visual resources since these are also a part of the more generic term of culture. The emphasis is placed on the importance of being familiarized with cultural elements belonging to the target language. We understand by (inter)cultural contact the willingness to become more aware of one's culture and of its relation to other cultures. The emphasis is placed on being more open and interested in discovering new cultures. The second part of this paper focuses on providing details about a practical way in which language and culture have been combined in a Swedish language project.

There are given details regarding the way in which the project has been organized and put into practice.

When teaching a foreign language one has to find a balance between terms such as: form, meaning and use of vocabulary or grammar structures. The form constitutes the phonological or orthographic sound or appearance of a word. If students are aware of how words are formed and how these are written, then they are going to be able to differentiate adjectives from adverbs or nouns from verbs. Moreover, they improve their writing skills and can apply a certain orthographic rule in contexts that have not been described by the teacher. The meaning of a word represents the way in which a word can be interpreted. In addition to their primary meaning, words can have a secondary meaning in certain contexts. It can be quite dull, if not impossible, to provide during a course thorough rules concerning the meaning and form of a new item of vocabulary. A more appropriate solution could be that of substituting rules for different learning contexts that enable 'learning by doing'. These would transform the learning in a more natural process. The use of a word provides details about the context in which this one appears. When speaking a foreign language there is even a greater demand to master appropriately the linguistic discourse. In addition, the speaker should be able to identify and relate to the existing social context.

We intend to bring up for discussion The Common European Framework of Reference for Languages¹ which indicates that communicative language competence is comprised of three components: a linguistic, a sociolinguistic and a pragmatic one. The linguistic competence targets the form, meaning and use of a word; it focuses on knowledge of grammar and vocabulary. Still, the term *use* could be also placed in a direct relation with the sociolinguistic and pragmatic competence since the focus is put on the context in which communication appears. From this point of view, the *use* is more concerned with the particularities of the speaking situation and with the

¹ http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf, p 13

interlocutor's speaking style. Figure 1 intends to reveal the intricate relationship between these elements.

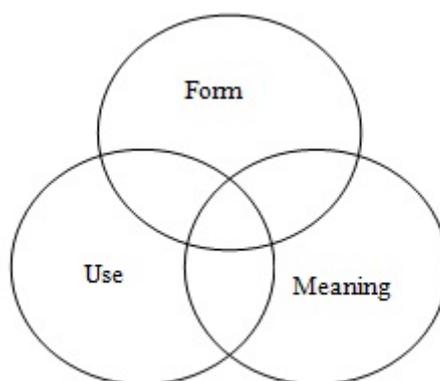


Figure 1. Form, meaning and use

A right balance of these would enable any learner to communicate efficiently in a foreign language.

Language represents a means of communicating who we are. We use it in order to transmit to our interlocutors, explicitly or implicitly, elements of culture such as: customs, music, arts or literature. Therefore, students should become familiar with this cultural perspective. Interlocutors need to make use of their pragmatic and intercultural competence when faced with such an intercultural transfer. The first part of this paper revolves around the idea comprised in the following statement: “[W]ithout culturally grounded knowledge, group members cannot learn to uncover the ethnocentric lenses they use to interpret and evaluate intergroup discourse processes” (van Dijk et al. 2000, 164). The reason for choosing this particular quotation resides in the fact that it offers a perspective on the importance of the cultural meaning that is transmitted through language. It is in fact stated that in order to be able to interpret the message received in the target language one needs to have a certain type of (inter)cultural knowledge. Therefore, in order to decipher a message in an appropriate manner one is required to have much more than knowledge of grammar and syntax. Moreover, the students should become

accustomed to using different registers and genres within the target language. Likewise, they would understand that there are different contexts in which communication can occur. This is one of the reasons why we have introduced in this Swedish project authentic resources that depict different genres and registers. Eva Hedencrona and Dora Kos-Dienes (Hedencrona & Kos-Dienes 2003, 22) discuss the relationship between language learnt from dictionaries or grammar books and language that which occurs in genuine situations. They suggest that if a person wants to start a conversation or present something on a specific topic, then the speaker would probably use a grammar or a dictionary in order to look for some explanations. But there are no books that would provide explanations for what you are expected to say or act in different situations in which you have to use the spoken language.

Consequently, ‘[L]anguage learners interacting with speakers of a target language must be exposed to language samples which observe social, cultural and discourse conventions- or in other words, which are pragmatically appropriate. Speakers who do not use pragmatically appropriate language run the risk of appearing uncooperative at the least, or more seriously, rude and insulting’ (Bardovi-Harlig et al. 1996, 324). Thus, an instance of communication does not transmit to the interlocutor just facts (content) but also details about the context in which the exchange of information takes place. Learners find out in the first language courses how to greet someone. At first, this might seem an easy task to do. Still, real life situations put the speaker in different contexts such as: talking to a senior citizen, to an officer, to a relative, to an employer etc. The greeting might be the same but there are other elements that sustain the conversation: intonation, tone of voice, paralinguistic, and even good manners. Therefore, we could conclude that the acquisition of linguistic competence is not equivalent with being proficient in that language.

The reason for choosing a multimodal approach to learning, namely using written texts in combination with audio-visual resources, is sustained by

the fact that when conveying a message one uses more than one communication channel. The written text receives back-up from the visual and the audio support in order to render meaning. Multimodal contents that combine written, audio and visual information give both the teachers and the students the possibility to filter acquired knowledge through personal perspectives. Here are some examples: listening to a song and discussing the cultural aspects that are conveyed through lyrics, reading a newspaper article and identifying elements that focus on the social or cultural context. In addition, multimodality enables the student to better interact with and individualize the item of information that is intended to be learnt. Thus, there are provided diverse learning contexts that are linked to different types of intelligence (visual, linguistic, musical intelligence etc.).

The learning of a foreign language usually focuses on the acquisition of the four skills, (writing, speaking, reading and listening skills), on the accumulation of items of vocabulary and on grasping grammar structures. The reason for choosing these particular items derives from the fact that these can be measured and assessed according to some evaluation schemes. Still, when learning a foreign language there are other competencies that are worth being acquired. Andy Baxter (1997, 17) suggests in this sense the following items: socio-linguistic, discourse and strategic competencies, language learning skills, general behavioural and social skills, and language use. Students need to be exposed to a broader perspective and meaningful contexts when they learn a foreign language.

No one can doubt the fact that vocabulary and grammar play an important role in the acquisition of a foreign language. Still, on the other hand, acquiring random items of vocabulary does not necessarily lead to much progress. Moreover, those words which are learnt by heart, most of the times out of context or are practiced in contexts that are not relevant for the user tend to be forgotten. The guidelines suggested by the modern didactics consider the learner to be an active participant in the learning process, both

inside and outside the classroom. The emphasis is placed on being involved in the learning process. In other words, the diligence of a student should be sustained by a personal perspective upon learning (i.e. developing language learning skills). The student should be encouraged to develop a learning strategy that is designed to fit his/her needs. This represents maybe just another way of empowering the student and making him/her aware of his/her the responsibilities.

In light of these considerations pointed out by Andy Baxter, it could be stated the fact that these additional competencies provide a useful leverage when it comes to learning a foreign language. It takes time to master the ability to know how to learn something and to be able to organize the items of information in order to achieve progress in a particular field of study. It is difficult to assess these competencies simply because tests are not always reliable. Results are not accurate due to the fact that people have different learning styles and are motivated by diverse things. Even though the focus is kept on measurable indexes and tests that assess acquired knowledge, the teacher shapes to a great extent his/her lessons and didactic resources by relying on the above mentioned items. Still, these do not necessarily certify the learning of a grammar structure or of a vocabulary item. In fact, these items provide support and useful information in order to manage the teaching process.

The project described in this paper intended to put an emphasis on another competency that cannot necessarily be approximated and measured, namely that of developing an intercultural competence. As follows, there is given a short definition of the term *intercultural speaker*, in order to limit the range of interpretations and perspectives provided by the available literature. The intercultural speaker is defined by Byram (1997, 38) as someone who is able to establish relationships, manage dysfunctions and mediate conversations. Likewise, one could add that the intercultural speaker is well familiarized with the pragmatics of the target language and he/she is able to

make connections between the content and the context of communication. In addition, the intercultural speaker is a keen observer of his/her interlocutors and can anticipate misunderstandings or awkward situations that might arise due to a mix of social and cultural norms. Nonetheless, the intercultural speaker has to be thoroughly prepared for real life instances of conversation even though most of time the learning takes place inside a classroom, which could be sometimes perceived as an artificial environment. A brief definition of the term intercultural competence could be summed up as being a “complex of abilities needed to perform effectively and appropriately when interacting with others who are linguistically and culturally different from oneself”². The aim of the intercultural language teaching is to prepare learners for the “real” world outside the classroom, even outside cultural boundaries.

The project entitled “Swedish – through music, film and pictures” has been developed by the Department of Scandinavian Studies, within the Faculty of Letters in Cluj-Napoca. It started at the beginning of March 2012 and lasted until the beginning of June. The aim of project was to teach the Swedish language from a cultural perspective. The people who have participated in this project were enrolled within the Department of Scandinavian Studies, having Norwegian as minor or major subject. The students who were learning Swedish as an optional course, intermediate and advanced level, have also attended this project. All of them were interested in taking a closer look to what defines Sweden and Swedish. In fact, the project intended to provide different perspectives on Sweden’s culture and civilisation, by focusing on different audio-visual resources.

Even if the emphasis was laid on using diverse audio-visual aids, the learning of Swedish did not diminish in the sense that students were expected to enlarge their vocabulary and improve their knowledge of grammar, as well as to enhance their speaking and listening skills. There could just be

² <http://www.experiment.org/documents/AppendixE.pdf>, Alvino Fantini, “About Intercultural Communicative Competence: A Construct.”, page 1

mentioned that the learning guidelines have changed and that there was a transition from solely relying on the textbook to using didactic resources with which the students could better interact. All the meetings were held in Swedish. The students' level of Swedish could be evaluated as being at an intermediate level, but knowledge of Norwegian constituted an advantage of understanding Swedish better.

The coordinators of this project, PhD. Prof. Sanda Tomescu Baci, Roxana Ema Dreve and Raluca Petruș, teach Swedish optional and compulsory courses within the Department of Scandinavian Studies. This project offered students the possibility to take a closer look at Sweden's culture, while focusing on learning Swedish by using visual aids and audio support. In fact, the project intended to teach Swedish by bringing into focus the context in which an item of language appears. Moreover, a secondary goal of this project was that of preparing the students for intercultural encounters through enhancing their speaking and listening skills, as well as vocabulary acquisition. Still, there was no specific emphasis laid on learning grammar out of context or of using a deductive method for teaching grammar structures.

As regards the teaching materials that have been used, it could be stated that these were quite diverse. They ranged from films, images, and advertisements to music, literature and complex project work. It is worth mentioning the fact that some of the topics and consequently the materials have been chosen by the students. The students were very open about what interests them and what doesn't. At the beginning of the project there has been conducted a needs analysis that took the form of a questionnaire. Students wrote what they would like to learn and likewise exposed their interests and motivation. The questionnaire had the purpose of conducting a self-evaluation on one's listening skills, level of Swedish and willingness to use authentic teaching materials. Almost all respondents answered that they have good listening skills when it comes to listening texts from the text book, but that it

is quite difficult to listen to music, films, advertisements in Swedish because people use different dialects, accents and secondary meanings.

From this perspective, the project was quite challenging, both for the teachers and for the students. On the one hand, for the majority of the students this was their first contact with Swedish ‘outside the classroom’ and with didactic resources that were not graded to their level. On the other hand, it was challenging also for the teachers because the structure of the lessons underwent some considerable changes in order to adapt it to the students’ needs. There weren’t any reading and translation activities, exercises or writing assignments. These have been replaced by open discussions on different topics, debates and short presentations.

The meetings have dealt with topics such as: dialects and the diversity of language, Swedish mentality, advertising and cultural elements, being an immigrant in Sweden and Swedish holidays and customs. Each meeting lasted for about 1h and 30 minutes and provided the students with plentiful opportunities to learn Swedish through a cultural perspective. There have been used a various range of authentic materials: newspapers in printed or online form, music, films, advertisements and other video clips. Here are just a few examples of the resources that have been used: Books/ literature: Åke Daun, *Mentalitatea suedeză [Swedish Mentality]*, translation by Liliana Donose Samuelsson, Publishing house: Humanitas, 1995; *Sverige – en pocketguide, fakta, tips och råd till nya invånare [Swedish - a pocket guide]*, Integrationsverket, Norrköping 2001; Astrid Lindgren *Kalas med Pippi Långstrump*, Raben och sjögren, 2009 – audio book; Astrid Lindgren *Pippi börjar skolan*, Raben och sjögren, 2009 – audio book. Web resources: <http://swedia.ling.gu.se>, www.sofi.se/dialekter/lyssna, www.8sidor.se, www.si.se, www.filmarkivet.se, www.youtube.com/watch?v=9ZSZlhz6_v8, www.youtube.com/watch?v=n1GiFy6Enwk.

As one could notice, the teaching resources that have been used range from (audio) books and Internet resources, to advertisements and video clips.

The reason for choosing these is sustained by David Buckingham (2003) who advocates for a new literacy, namely the media literacy. According to his opinion “[T]he media are undoubtedly the major contemporary means of cultural expression and communication: to become an active participant in the public life necessarily involves making use of the modern media” (Buckingham 2003, 5). Whether we like it or not, technology is a part of our lives. Although it has its limitations, its strong points (the way information is structured and delivered, an increased level of interactivity with the information, the opportunity to have an individualized learning sequence etc.) represent a valuable asset for the teaching sequence. Likewise, technology is integrated in the classroom as a support for organizing, delivering and producing information.

There were not given marks or any kind of credits for participating in this project. The students perceived this project just as an opportunity to learn Swedish from a different perspective. The project concluded with a personal flipchart presentation on a topic chosen by each student. The students gave a proof of their creativity and personal engagement. They have definitely developed their learning strategies while trying to put together pieces of information for their presentation. The topics that have been tackled by the students referred to: literature, science, holidays, art, photography, and the Swedish film industry. As one could observe, there have been used many audio-visual resources in order to improve the students’ listening skills. These kinds of listening activities provide the students with the opportunity to develop their comprehension skills and fluency, by exposing them to different dialects and registers. Likewise they will be able to comprehend different patterns of speech and the appropriate context for using a word. The films, the short video clips and the advertisements were followed by short discussions, which gave students the possibility to express their opinions in Swedish. Students have seen an advertisement broadcasted in the 1970s in Sweden. It advertised paternity leave. Its purpose was to make fathers more aware of their

paternal responsibilities. We have this 'concept' in Romania but it is not advertised. This was just another opportunity to better understand the Swedish culture.

Listening activities are usually difficult to put into practice in the classroom. On the one hand, the teacher might be reluctant to use audio resources. The reasons could range from lack of classroom acoustics and of technical support to lack of appropriate teaching materials. In some situations the students are exposed just to the teacher's speaking style. On the other hand the students find it sometimes difficult to get accustomed to an informal register, which contains many idioms, phrasal verbs, slang, collocations and words that require one's knowledge of secondary meanings. Many students prefer to do tons of exercises than perform a listening comprehension exercise. This informal register is not comprised in the course books and not even in the listening activities that are part of the lessons. During optional and compulsory courses the focus is placed on improving academic language. Still, in the real world, outside the classroom, students are going to be exposed to informal speaking styles. The solution both for the teacher and the student could be that of making use of authentic listening texts that enable a certain kind of accommodation to the informal speaking.

It may seem that listening is challenging because the "[...] listeners have to make an effort to work out what speakers mean by what they say. [...] interpretation is a difficult and risky process with no guarantee of satisfactory outcome, even if you have correctly identified the words and correctly worked out the syntactic structure of the sentence" (Brown, Malmkjær, Pollitt, Williams 1995, 2). Thus, meaning is decoded and then negotiated between interlocutors. The language proper and the linguistic cues represent means of negotiating meanings. Moreover, language carries with it social values "[...] because language is primarily a social mechanism" (Spolsky 1998, 131). When the interlocutors speak different mother tongues they both bring into the communication sequence their own beliefs and cultural values. These

elements are difficult to be observed by an inexperienced interlocutor who does not know how to decipher an utterance loaded with socio-cultural meaning. In this regard, it could be stated that the students who have participated in our project have been offered multiple chances to get a closer look into the Swedish mindset and the Sweden's socio-cultural elements. The students have given us valuable feedback about this particular topic on various occasions. They have understood the importance of cultural background knowledge and have agreed that language reflects culture, and vice versa.

One should be preoccupied both with the explicit and implicit content that is rendered through language when starting a conversation in a foreign language. When the implicit knowledge is unknown to someone, it is highly probable that he or she might break some basic communication rules. In order to avoid this situation Katalin Volford (Szabo 2003, 29) suggests to her interpreter trainees to study the civilization of the target language in order to “have the opportunity to develop their understanding of the target culture(s) and improve their culture-specific vocabulary”. This advice could be given to all the learners who struggle to learn a foreign language and to be fluent speakers.

Conclusion

This paper intended to emphasize the appropriateness of using audio-visual resources when learning Swedish as a foreign language. The authentic materials that have been used during the project have helped the students to get accustomed to the pragmatics and the culture of the target language.

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Developing Reflective Thinking in Business and Economics Education

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Abstract The purpose of this article is to present a multi-stage reflective learning model that helps structuring experiential exercises that make business undergraduate students develop reflective thinking skills. The paper argues that when active learning exercises are structured in the context of the multi-stage experiential learning model they can be used in an undergraduate business and economics education to stimulate and develop reflective learning skills.

Key words reflective thinking; active learning; model for developing games and simulations

Introduction

One of the goals of an undergraduate education is to develop reflective thinking skills. A reflective thinker is a lifelong learner who perceives every experience as an opportunity for growth, change, and development of understanding (Boyd and Fales, 1983). In this context, undergraduate college education has been challenged with developing learning strategies that meet the demands for reflective thinking. The purpose of this article is to demonstrate a multi-stage reflective learning model that can be used to structure any reflection-on-action technique. In this paper, we apply the model as a basis by which to structure and to deliver any game or simulation in order to develop reflective thinking skills amongst students. The model, called the Pre-Experience Experience Reflection Integration Application model (PERIA) consists of five stages: (a) pre-experience, (b) experience, (c) reflection, (d)

integration, and (e) application. Students formulate and come to understand important concepts based on continuous experience, questioning and reflection during discovery while actively participating in class activities. Requiring students to experience, discover, analyze, reflect and apply the concepts experienced from the active learning provides practical experience and develops the reflective thinking skills for students who intend to pursue a career in business.

Literature Review

Over the years there has been increased interest in using active, cooperative and experiential learning activities that actively involve students in the learning process to facilitate their own learning and growth and encourage development of reflective thinking skills (Porter and McKibbin, 1988). Educational theories suggest that learning is facilitated when concrete experiences are reflected upon by questioning, reflecting, and analyzing in order to form abstract concepts and generalizations that are then used and tested in new situations (Kolb, 1984). In particular, cooperative or active learning exercises have received a fair amount of attention in the business education literature as experiential and reflective learning exercises (Holter, 1994). Zapalska and Brozik (2001) argue that various active learning methods place business students in situations where they must perform tasks where they experience something new. The goal is to encourage reflection about their experience to help them develop new skills or new ways of thinking.

Numerous authors have proposed definitions for reflective thinking relative to their own disciplines (Rogers, 1989; Boud et al., 1985). Reflective thinking can be defined as the process of looking into reasons for and exploration of meanings regarding issues, concerns, or problems that involve individuals or groups of individuals, in order to come to a new appreciation, understanding, awareness, or conceptualization of ideas (Boud et al., 1985;

Boyd and Fales, 1983). According to Watson and Glaser (1964), reflective thinking is identified with critical thinking viewed it as a composite of knowledge, skills, and attitudes. Both authors developed the Watson-Glaser Critical Thinking Appraisal tool which is presently used by researchers of critical thinking (Hartley and Aukamp, 1994). This tool measures skill in performing inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments, all of which are used during the process of reflection. In fact, some theorists believe critical thinking is a cognitive process grounded in reflection (Jones and Brown, 1993).

Boyd and Fales (1983) also provided a working definition of reflection which suggests that it is a process of thinking about and exploring an issue of concern, which is triggered by an experience. The aim of one's deliberations is to make sense or meaning out of the experience and to incorporate this experience into one's view of the self and the world. The exploration of an experience to create meaning (reflection) inevitably focuses on something of central importance to the individual where there is potential for significant learning and growth (Schön, 1987). Hutchings and Wutzdorff (1988) argue that reflection is the ability to step back, ponder, question, and evaluate one's own experiences, then to abstract from them knowledge that is relevant to other experiences. The authors stress that experience alone does not guarantee learning but constant questioning and reflecting on experiences transform them into learning. Based on these generalizations and working theories, students actively experiment, test, and apply what they have learned in other, more complex situations.

Active learning via games and simulations has been used in business and economics courses (Smith 1992) and has shown to provide the student with an effective means of learning through experiences taken from actual situations and presented in a controlled environment (Barlett and King 1990, Hester 1991). In particular, a game is defined as a model of student interaction that involves a winner. The game provides a competitive setting for learning

specific subject matter and in contrast, simulations model a portion of reality in a controlled setting and reproduce the social, economic, or political processes of particular systems of social interactions. Students assume roles in the system and try to understand how the system operates by participating as active members, not as observers (Atkins and Murphy, 1993). A simulation is an intentional controlled environment created for the purpose of learning. The controlled environment of the simulation allows the learners to feel confident to take risks and at the same time gives them direct access to the subject matter. The learner can become empowered to make decisions, test theories and hypothesis, and make mistakes as the costs of the mistake are simulated. A simulation game is a combination of both techniques that tries to use the role-playing of a simulation for learning specific concepts. The active and competitive nature of a simulation game encourages student motivation for learning (Wells, 1991).

DeYoung (1993) states that group learning using games and simulations begins with concrete experiences. Relying on reflective observations from these experiences, students engage in abstract conceptualization that allows them to generalize and learn principles that integrate their observations into working theories. The author further argues that games and simulations enable students to actively experiment, test, and apply what they have learned in other, more complex, situations.

Similarly, Brozik and Zapalska (2001) argue that games and simulations prompt students to solve problems and stimulate strategic, reflective, and critical thinking as those activities eliminate memorization and repetition and give students opportunities to reflectively interact with each other. The authors also argue that games and simulations have the advantage of being flexible in their application; instructors can change plans according to the needs of the class and move the game to a different time without causing major disruptions in the class schedule.

A review of literature clearly documents an increased interest in experiential learning (Walker, 1987) as some of the outcomes from experiential learning that have been identified have increased student reflection (Lewis and Williams, 1994). Despite the considerable number of games and simulations available for teaching purposes there has been no single model presented that would suggest how to ensure that the reflective learning is being developed (Chamberlin 1995). With this in mind, the paper argues that when active learning exercises such as games and simulations are structured in the context of the multi-stage reflective learning model they can be used in an undergraduate business education to stimulate and develop reflective learning skills.

The PERIA Model

The Pre-Experience Experience Reflection Integration Application (PERIA) model offers a way for students to develop reflective thinking skills. The background for the model is based on an experiential learning theory which assumes that: (1) Reflective learners learn from their experience; (2) The learning outcomes of the experience depend on whether the experience is processed through reflection; (3) The personalizing of the learning is dependent on the integration of the reflection (Allen and Hutchinson, 1992). As both experience and reflection have been identified as principles that facilitate adult learning, the PERIA model has been developed to represent the essential ingredients for turning experience into meaningful and reflective learning.

Figure 1.

The Pre-Experience Experience Reflection Integration Application Model
(PERIA Model)



The five components of the model are: (a) pre-experience, (b) experience, (c) reflection, (d) integration, and (e) application (Figure 1.) Although the model can be applied to any experience, in this article the model is applied to a business education experience and process. The goal is for each student to develop into a reflective learner. A reflective learner is a lifelong learner who perceives every experience as an opportunity for growth, change, and the development of understanding the experience, reflecting on it, integrating and applying it into life situations. Based on the PERIA model each student engages in reflection in anticipation of the experience and also during involvement in the experience. The steps must be thought through prior to beginning work on the game with the students. Proper identification of the exercise's goals and boundary conditions greatly simplifies game design and construction. The game or simulation must follow a logical construction, and the designer will have control over its ultimate direction. The actual creation of the game or simulation should flow smoothly from the established goals and boundary conditions. The following steps illustrate the process of developing a game or a simulation that is expected to develop reflective thinking.

Development of Games and Simulations

Games and simulations can give students real experiences and make concepts learned more meaningful. Creating games and simulations can be successfully integrated into the process of developing efficient tools that would create positive learning outcomes. The following section discusses how to develop a game or a simulation that are based on experience and hence can become a reflective learning instrument.

Define the Goal of the Exercise and Identify Available Resources

The instructor must define the goal of the exercise. The purpose of the exercise must be unambiguous. The goal may be to demonstrate or learn a fact, a skill, a behavior, or some combination of the three. The designer must be able to say something like: the purpose of this exercise is to demonstrate the operations of an auction market and familiarize the players through their experience with behaviors appropriate to that market. A key aspect of a successful game is that it addresses a limited set of actions. Attempting to do too much within a single exercise will make a game unworkable. As a general rule, it is better to work with a simple infrastructure. The fewer the physical requirements the more portable the game is as too much experience can lead to frustration and hinder the learning process.

Define the Use of Rewards, Randomness, and Stress

The presence of a reward determines whether the exercise is a simulation or a game. The lack of a reward can lead to more cooperative behavior between participants. The presence of a reward can lead to competition and will usually stimulate the players to do their best. Introduction of a random factor requires that the game be robust enough to handle uncertainty. An example of a random factor would be using dice to determine the exchange rate between two currencies in a specific period. The advantage of randomness is that it more accurately models the real world and hence provides more realistic experience for the players. The level of stress that will be induced in the players must be determined prior to the design of the game. The environment can be constructed with unlimited resources so that all players can succeed.

Determine if There Will Be Individual Players or Teams and if the Exercise Will Be Winnable

Some lessons can only be learned and experienced individually, but many can be learned in a team setting. The use of teams simplifies scorekeeping in a game. It also requires players to use interpersonal skills in reaching decisions. This interaction is often a valuable factor since the players are in reality teaching each other about the game. The size of a team is important. There should be three players in a team so that there are no problems with intra-team communications.

Games have winners, by definition, but there is no requirement that the game can be won. Valuable lessons can be learned from failure, even if everyone fails. Whether they win or lose, players come to appreciate the difficulty of beating this market.

Create the Environment and Determine the Use of Tricks

Each simulation or game occurs within a conceptual framework. This is the “experience” into which the players are inserted. It must bear directly on the goal of the exercise. If the goal is to illustrate how foreign exchange rates are set, the environment must become a currency trading room. The environment does not have to be completely accurate or all encompassing. It is necessary to identify and provide an experience of the slice of the environment relevant to the goal of the game and present it in a simplified format. It is easy to design unexpected factors into any game. For example, if dice are used to determine the value of a specific variable in the game, players can be furnished with one distribution of possible outcomes to be used for decision-making, and the person running the game can use a different distribution during the play. This type of trick can be used to determine whether or not players can identify a biased system. This is only possible if the game is repetitive with a number of distinct iterations. The use of such mechanisms is usually not necessary. If the exercise is well designed, the players will have enough to learn without having to deal with a biased setting.

Create the Roles and Experience for the Players

In the real world, each person has a role that he or she plays within a specific environment and in the environment created for a game or a simulation each player must understand the goals, resources, and action options which can be used. The player must know what is to be done and the boundary conditions. This is where rewards are specified so that players in a game will know how they will benefit from the success of their efforts. For the experience to occur, the game or simulation must define the motives and purposes of the players as specifically as possible. While structuring a game or an experiment, we should not specifically reveal areas of potential conflict or cooperation between the players. The learning process involves experiencing and discovering these aspects of behavior. The role of the player must be unambiguous but the actions allowed the players should be ambiguous. A well-constructed game or simulation requires the players to experience for themselves the simulated business scenario and reality and discover what types of behaviors and actions are successful. Only actions that are detrimental to the exercise and experience should be proscribed. There should be no instruction to the players as how to behave among themselves as they have to discover and experience the simulated reality. The community of players should be expected to determine these behaviors for themselves, and the allowed behaviors in each different exercise make each exercise different from all others. This means that the game leader must always be alert for nuances of behavior and how they affect the play of the game.

Create Transactions and Rules

The substance of a game is the sequence of transactions between the players. It is important to formulate a broad, general idea of the sequence of what each player will do during the game. All transactions should lead to learning goals. The rules must be written at this stage. The rules tell the players the manner in which transactions can or cannot be performed. It is

recommended to keep the rules as simple as possible. The initial design of the game should have as few rules and restrictions as possible. It is simply impossible to anticipate the actions of the players if there are too many experiences that we expect the players to go through. It is expected that players will devise some actions completely unanticipated by the designer. When this happens, the designer must decide whether to add more rules to the game to keep it on the desired track or to modify the game to accommodate the new learning possibilities that were uncovered.

Create an Evaluation Method

The notion of game implies there will be winners and losers. Simulations do not produce winners or losers but illustrate a process which can be evaluated as good or bad, valuable or not. It is easy to design a simple scoring system for a game to determine the winner. In simulations, the evaluation system is likely to be more anecdotal. Regardless of whether the exercise is a simulation or a game, it is important to be able to evaluate the situation and if the players' experiences were as anticipated. Thus, it is important to identify the goals and how they can be measured. One possibility is to measure them in terms of how well a player's personal objectives are met by counting items or looking at an overall portfolio of items. Another approach is to focus on behaviors, and this can focus on how players interacted with each other or the success of the group as a whole to meet the specified objectives. Evaluation is an integral part of the time structure of the exercise. At the end of any game or playing period it is necessary to schedule a period in which players can discuss what they have learned. This debriefing period provides the opportunity to evaluate the exercise for beyond the simple scoring criteria.

Application of the PERIA Model into Games and Simulations

The following section illustrates the application of the PERIA model into experiential learning that is being delivered through the games and simulations.

Pre-Experience

During the pre-experience phase, the focus is on preparing the students to view the upcoming experience before the discovery, experience, and reflection take place. In essence, the students are told the purpose of the experience, and a connection is made between the purpose and the activities that they will be discovering, experiencing, completing and reflecting upon. This is a vital stage that prepares students for the experience and discovery. Students need to know the purpose of the experience particularly what is to be discovered, observed and experienced, what goals are expected to be completed, and what skills are to be learned. It is the responsibility of the teacher to articulate the reasons for the discovery and experience. While preparing a game to be played, the teacher should know the settings of the proposed experience. Before students go out for their experience, it is crucial to establish structure for their observations and interactions. One type of structure is to give students some specific activities to be completed and questions to be answered. These activities and questions may be developed collaboratively with the students or they may be assigned by the teacher.

Experience

The second stage of the model is the experience which is a foundation of learning. At this stage any discovery and experience must produce meaningful and lasting learning effect. When students engage in a specific discovery and experience, it is essential that the experience was planned reflectively so that the experience will have an impact on the student in a specific and significant way. If the student has been prepared, given guidance

or structure, and is aware of the purpose of the experience, it is much more likely that the goal of the experience will be achieved.

Reflection

The most important part of any game and simulation is reviewing the lessons learned from the play. This is where the participants' experiences are transformed into education. Merely "playing a game" in a classroom is not sufficient; there must be a review that reinforces the exercise's goals. Reflection is the key to making experience meaningful. By thinking reflectively about an experience, students can reconfigure their thought systems and find a connection between theory and practice. Reflection helps determine the attainment of goals, organize learning, and record insights and new learning. The students' experiences may be re-examined the four basic modes of reflection that include: reading, writing, speaking through debrief sessions, and listening. The reflection method or combination of methods to be used is determined by the outcome desired.

There are many instruments that can deliver reflection. One of them is a debriefing session of the experience and discovery. The debriefing can be the most difficult aspect of any game, since it is quite possible that things occurred during the game are not anticipated. The game leader must be aware of everything that is happening during the game, even the unplanned events, and be able to translate all the activity into a set of lessons learned. If there are multiple observers, each can add his or her observations to the debriefing and thus enrich the experience. The debriefing session is characterized by student participation. The debriefing is the actual goal of any game, getting students involved in and responsible for their own education. It may be useful for the instructor asks questions like: *How "real" was the exercise? How did the exercise parallel or different from the real world? What was learned from the exercise? What would happen if the exercise had been conducted differently?* Students want to tell of their experiences and observations. They can be

expected to identify the major characteristics of the simulation or game and the problems that existed within it. Students may also present observations concerning the processes within the simulation that were not anticipated by the instructor. Such situations are why the instructor needs to have a broad background and a thorough understanding of the game's structure to identify how these observations fit into the simulation.

During debriefing sessions, students take theoretical concepts and connect them with the exercise. Theory meets reality, and the lesson can take root. Basic concepts that are practiced and learned while playing the game become more meaningful when the students are able to link them with their own experiences. Practice and experience, as basic elements of games, help students reinforce material learned. As students undertake active, effective, and systematic information gathering, theories no longer become abstract concepts that are memorized. The success of individual teams should open the discussion, and teams should discuss how they gathered and processed information and how they acted upon that information. The discussion can also focus on the roles of individual members of the team. All participants should be drawn into discussion. It is necessary that all players recognize their roles in the simulation. The importance of the reflection through debriefing session cannot be overstated. This opportunity to relate the world of the game to the real world is the payoff of the entire exercise. The shared experience of the exercise forms a touchstone that can be used in other class sessions to illustrate other lessons and give them a personal context for the student.

Another possible option for reflection is to have students read material related to the experience. The advantage of this approach is that it gives students another perspective. The selection of readings should relate in some way to the overall purpose of the experience. Writing experience can also be used to produce reflection. Asking students to keep journals or responding to open-ended questions can be processed in an individual or a group format.

Communication via speaking or talking about an experience and hearing another's commentary can also be a valuable activity that can produce very effective communication strategies where students are expected to value all reflective contributions. Within each of these modes of reflection, the teacher may allow both a free form of expression or provide for a highly structured experience. The decision depends on the developmental level of the students and their readiness to engage in the reflective process.

Integration

During integration stage, students should be guided through personal introspection and encouraged to examine and reflect on their actions and decisions. Questions such as: *What have I learned about myself through this experience? Do I have more or less understanding of the experience? In what ways have I changed or what did I learn as a result of this? What would I change about the situation if I were in charge? Do I feel my actions had any impact? Does this experience complement or contrast with what I am learning in class? Am I able to identify from my experience any issues that influence education? Do I see changes that need to be made? If so, what could be done to change the situation? Are there any social issues that have different meanings for me since my experience?* All reflections questions should be related to the purpose of the experience and not used to overwhelm the students or make the experience redundant. Reflection is fostered through the intentional role interaction of the participants as well as through dialogue reflection built into simulation. Through reflection the learners form abstract concepts and generalizations to be tested within the simulation. The learners form concepts based on experienced and reflected upon.

Application

A carefully designed game or simulation allow the learners to experience, reflect, and conceptualize learning with outcomes that can transfer

real situations. They motivate the learner through social interaction developing independent as well as interdependent learning. After the simulation or the game, application can be fostered through written reports, essays or other projects that build upon the exercise.

Conclusion

Games and simulations as educational tools are employed to provide a vehicle by which students may acquire conceptual or factual information, integrate information contributing to the comprehension of the structure of knowledge; and provide students with an opportunity to experience, reflect on the experience. Experiential learning involves forming abstract concepts based on reflection of experience. The experiential process with the use of games and simulations consists of five components: pre-experience, experience, reflection, integration, and application. All those stages of action provide concrete experience, observation, reflection, formation of abstract concepts and generalizations, and testing concepts in new situations. Games and simulations are the foundation for deeper learning and transformative learning where reflective learners are able to apply theory to practice. They provide a deeper learning as they enable the learner to understand the conditions for applying knowledge, foster invention for applying the knowledge, and enable the learner to see implications of the knowledge. In any game or simulation, the reality experienced by the learner is controlled. For the learners, the problem are real, moving forward requires solutions. The simulation must provide the learners with the resources necessary to solve the problem.

In sum, in a game or simulation reflection provides the learner with the opportunity to integrate the new experience into learners' understanding. This provides a greater transformative value to the learning or the degree to which the skills and knowledge acquired are applied in real-world situations. In order to capitalize on the reflective process, the learner will need to reflect on a

number of different levels, dialogue, individual and discussion. The value and depth of reflections are enriched through dialogue and conversation in a small group of players. Dialogue helps clarify the subtleties of thought. As the learners uncover theories they begin to see activities in a new light guiding them towards conceptual reframing and learning. Following the dialogue, learners need time for personal reflection in order to incorporate the new knowledge into their background knowledge. Through written reflection, the learner is able to develop thinking more fully. This may also become a record of learning. The learners have an opportunity within discussion time to share unique problem solutions encountered within the simulation. The simulation needs to provide opportunities for learners to reflect both collectively and individually.

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Analysis

European University Education Needs More Practice

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Abstract Due to demographic changes in almost all European countries (the reduction of the European population and an increase of the world population), the work of all young people will be needed in the future. Therefore it is necessary to remedy weaknesses of the European educational system. To reduce the unemployment of skilled workers, lifelong learning should be complemented by practical and theoretical training opportunities. Only through these advanced measures can Europe maintain and improve its prosperity and competitiveness in the global economy. To improve education in Europe and especially in Romania and to increase the number of internships for future employees in the economy, the benefits of practice-oriented trained academic staff in industry need to be more discussed. The message for the future must be: Romanian companies benefit from a practice-oriented university education. That is why industry and commerce are also responsible for the training of university graduates.

Key words Demographic changes in Europe, lifelong learning, University education needs more practice, companies benefit from a practice oriented education, industry is responsible for internship.

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1 INTRODUCTION

Already 300 years BC Aristotle (384-322 B.C.) recognized the advantages of action orientation (i.e. practical training) in the learning process: „For the things we have to learn in order to do something, we learn by doing them. “ (Ruhloff/Poenitsch 2004: 126). However, it was 2000 years later that the Swiss pedagogues Jean-Jaques Rousseau (1712-1778) and Johann-Heinrich Pestalozzi (1746-1827) recognized the significance of action oriented knowledge acquisition. While Rousseau focused knowledge acquisition on "attempt and mistake“, Pestalozzi spoke of "learning with head, heart and hand“(Gudjons 2008: 20). Even Johann Wolfgang von Goethe (1749-1832) came to the conclusion: „ Thinking and acting, acting and thinking, this is the sum of all wisdom “(Heyne 2003: 5). The German school counselor Georg Michael Kerschensteiner (1854-1932) founded the first technical schools in Munich. He equipped these technical schools with wood and metal workshops, kitchens and school gardens. For Kerschensteiner, knowledge acquisition was both spiritual and practical educational work. Not only should the intellectual abilities be promoted, but the manual as well. (Krebs 2004: 19).

In today's modern vocational pedagogy Christoph Neef and Reinhard Bader describe the acquisition of knowledge and skills as the acquisition of practical competence (Bader 2004; Neef 2008). Professional practical competence is in Bader's view the ability of a person to solve the professional challenges from both a material and a professional point of view, in an independently thought-out and socially responsible way, and encompasses professional, personal and social competence. Bader calls expertise the ability to work out tasks, in a self-organized, specialized and method guided way. Planning, realization, controlling and judging are the relevant steps towards a

solution. In the end, social competence is the ability to grasp and understand social relations, and to interact with other people and to advice (Bader 2004). In many models, we can find as another part of action competence the methodological expertise (Neef in 2008).

In his book "Educational Psychology of teaching and learning" Roth also points out the stronger motivation of learners through exercises and practical experience. After the students have developed the solutions they carry them out in order to check whether the solution stands. The practical processes increase the motivation of the learners, which has a positive effect on the learning process and learning success (Roth 1969).

More practical and vocational emphasis and a comprehensive and a constant connection between theory and practice during the learning and work process, will in the future be of even greater importance, because knowledge in all economic and social sectors is increasing exponentially. Through new patents and structures as well as the changing geopolitical situation, the skill requirements of the economy in Europe change rapidly. Both young and older people in their professional, as well as their private life, will be asked again and again, to adapt their skills and knowledge to these new circumstances. In other words a close link between theory and practice plays an increasingly important part in the knowledge society of the 21 Century.

A central concern of this work is to prove these findings by conducting interviews at universities in Germany and Romania. Particularly clear is the need for practice-oriented learning. These pedagogical and theoretical insights will be checked with the help of the following survey, which has been commissioned by the German Society of Psychology (Faster & W. Schneider, 2004; W. Schneider, 2005). "If one follows the information of the 1872 respondents, one can see that relatively many have not graduated within the study period, but have extended their study by one or two semesters, especially by taking on internships/jobs (61, 3 %), extensive thesis work (46, 3 %) and with voluntary participation in additional seminars (37, 6 %). When

mentioning this information one should not forget the desire of many students to increase their chances on the labor market, by additional qualifications during their study period. The fact that this strategy also facilitates their entry into professional life is also shown from further analysis of the transition to working life. Overall a good 25 percent of the respondents had found a job while still a student, and almost two-thirds of all graduates reported a successful job search within a year" (Wild 2006).

This review clearly shows that steered internships (close coordination of the educational content between the university and the enterprises) and practice-oriented diploma theses in industry can lead to a more successful transition between study and a job. The aim of the present study is to verify and systematically to deepen these findings. To this end we will investigate the influence of work placements on the acquisition of employment and on the students learning process in the Department of Economics at the Babes Bolyai University in Cluj Napoca in Romania as well as at the University of Duisburg-Essen in Germany. The aim will be to embed supervised work placements during the study period in the scientific education in Germany and in Romania.

The preparation of systematic knowledge about the role of a stronger link between theory, practice and self-organized/action-oriented learning in professional and private life is of great economic, social and political relevance. This relevance can deduce for example from the structural changes in the increasing skill requirements of businesses. In the last ten years (2000-2010) the unemployment of academics was approximately 30 percent of the average of the general unemployment in Germany. The unemployment rate for workers without professional qualifications was in 2009 21.9 % percent, for skilled workers 6.6 percent, and for graduates of the university or university of applied sciences at 2.5 percent (cf.: Kögel 2. /3. July 2011).

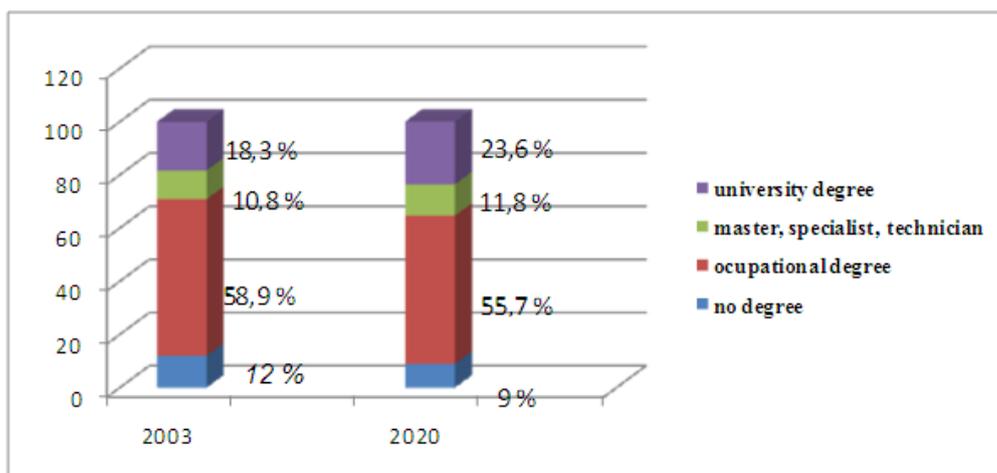


Figure 1: Labor market according to skill levels (specified in percentages) in 2003 and 2020

Source: IZA Research Report Nr. 9. 2007 (*Gerster 2008*)

The increasing demand for well-qualified staff with a university or college degree is accompanied by a declining demand for persons with lower qualifications. This means an increase in demand for labor with higher- or college degrees of 18,3 percent in 2003 to 23,6 percent in the year 2020, while the demand for workers without a professional qualification falls by 12% (2003) falls to 9 percent by 2020. The need for masters, certified specialists and technicians has increased by 1 %, from 10,8 % (2003) to 11,8 % (in 2020). Figure 1 forecasts that the demand for qualified skilled workers falls from 58,9 % to 55,7 % (cf.: *Gerster 2008, 26*).

These data show that poorly educated school leavers in today's European knowledge society have increasingly fewer chances of employment or training. Against the background of the dramatic demographic changes in Germany, Romania and Europe, we – and, in particular, our businesses – can't afford not to offer qualified training to young people. In addition, with low chances of getting a job and thereby a fulfilling professional life, their chances of a fulfilling life in general are dwindling. This can cause significant social problems, which can create difficult challenges for our society. The training of young people must therefore increasingly be the focus of politics. A

systematic investigation of the importance of the link between theory, practice, and action-oriented learning provides important, basic knowledge for this important political and social task.

2 TRAINING OF ACADEMICS IN EUROPE

The Education Ministers of the EU-states and the European Rectors' Conference in Bologna in the year 1999 unified academic degrees in the universities in Europe and organized the courses according to the Anglo-American model. The courses in the UK and in the United States end with the Bachelor's degree and Masters exam. After this decision universities gradually changed the framework of courses and degrees, to make a mutual recognition of the academic achievements and degrees possible. The requirements of society and of companies were clear: According to a survey of the Institute of the German Economy in Cologne, the entrepreneurs above all wanted graduates to adapt quickly into new areas and to apply their knowledge to new problems. Self-organized learning is needed in the first place (Christiane Konegen-Grenier, 2011).

Through the agreement of the Education Ministers, the students should be able to continue studying at other universities or graduates should be able to work in the economies of other countries in their specialist fields with the same wages as in their home country. However, since the education ministers negotiated a legally non-binding agreement in Bologna the conditions – such as the ill-defined study periods and the recognition of the academic achievements at other universities – were often followed by bureaucratic difficulties. In Germany, the Land governments are going so far as to giving the academic degree of Diploma-Engineer again. These problematic developments are in the foreground of the negotiations at the next conferences of the education ministers. In almost all study programs it can be noted that

theoretical training is often reinforced, but guided internships are provided only in rare cases.

3 DEMOGRAPHIC DEVELOPMENTS IN THE WORLD AND IN EUROPE

The Europeans look mainly at the problems created by the demographic development in Europe and in their own countries although the main problem is the dramatic development of the global population. "By 2050 there will be 9.2 billion people in the world - 2.5 billion more than today. This is shown by a new United Nations report, which corrects upward the previous forecasts. Life expectancy is growing rapidly. Worldwide the number of the 60 year old people has tripled to two billion, says the new forecast of the UN – Population Division." (Eber 2009)

These increases differ from the shrinking population in Europe. There the population is shrinking by 2050 in the 28 European countries to 9 million people. (Theurer 28. June 2012). Furthermore, the average age of the EU-population will increase by ten years: currently every sixth citizen is older than 65 years of age, by 2050 it will be nearly every third and the population should expect to be four to five years older, compared to the 65 year olds. However the number of employed people between the ages of 15 and 63 will decline significantly. Against the background of the continuing "generational agreement" the people in this age group must however co-finance both the children and the elderly. This relationship between the economically active and dependents will change from today's 2:1 to almost 1:1. (Dehne 2009) Figure 2 shows the changing development of demography in Europe, the share of the age groups in the population of the European Union.

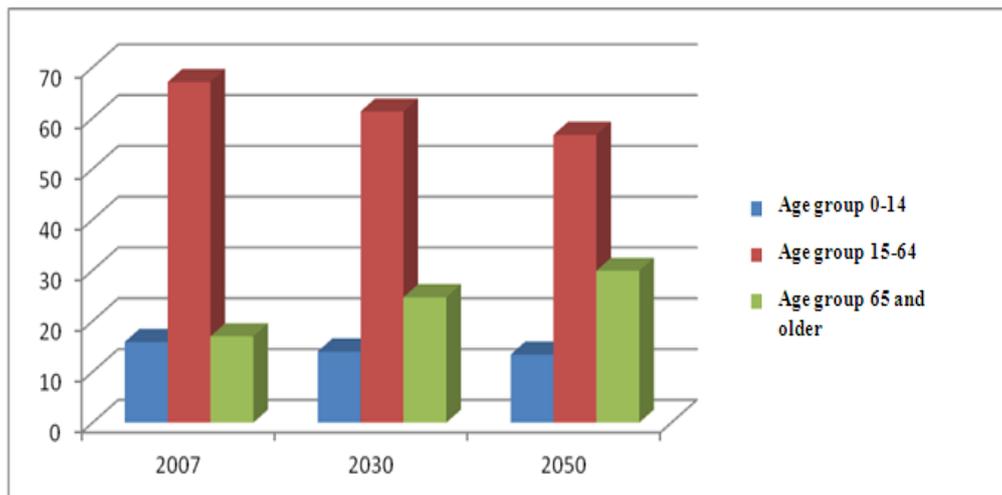


Figure 2: The development of demography in Europe (specified in percent)
Source: Berlin-Institut/dtv/GEO

Figure 3 predicts the population growth and aging in selected states in the EU.

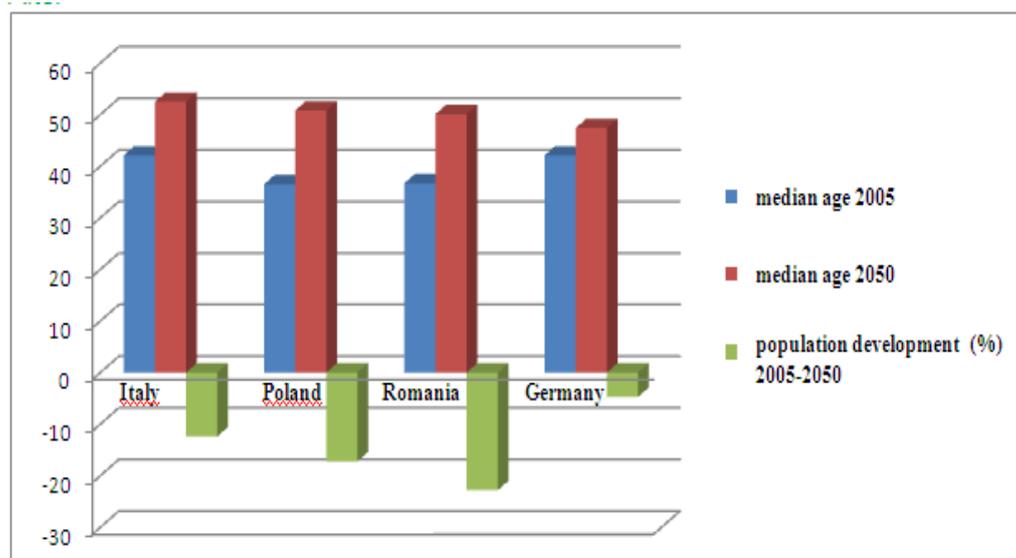


Figure 3: Population development between the years 2005-2050 Age – Population development in %
Source: United Nations (Hg.): World Population Prospects. The 2004 Revision. Highlights. New York 2005, S. 43-63

The median age halves the population of the respective state into 50 percent younger people and 50 percent older people. The change in the demographics has different reasons in each state, but uniform trends can be

noticed towards a large reduction of the population in all the EU-states. The central (e.g.: Germany, Austria) and southern European countries (e.g.: Italy, Romania) have the largest demographic problems; a strong population decrease can be observed. The age structure of the population is not balanced, especially in Germany and Romania. All these are reasons for society in Europe to improve and develop training at universities together.

3.1 DEMOGRAPHIC DEVELOPMENT IN GERMANY AND ROMANIA

The demographic development in Germany and Romania shows that people in both countries are getting older and living longer. In this way, the average age (median age) of the people in Germany will rise between the years 2005-2050 by 4.7 percent and of the Romanian population by 22.8 percentage points and the number of younger workers in both countries will decrease sharply. Against this background, the prosperity in the two countries can only be improved through continuous training. The people in Germany used to a high living standard, which they want to maintain, and the population in Romania, with a lower living standard, which must be improved, have to accept the challenge of establishing a sustainable practice-oriented learning in universities. The main objectives of the teaching and learning processes in universities are the employability and social skills of the learners.

Another complicating factor in Germany and in almost all European countries is: "The quantitative compositions of the ages, as well as their skill levels indicate that it will be difficult to replace future workers not only in number but also in qualifications. In particularly large middle age groups there are an above average number of highly qualified people. The 50- to 64-year-olds will be by 2015 the best qualified age group" (Gerster 2008: 8).

3.1.1 DEMOGRAPHIC DEVELOPMENT IN GERMANY

German society is aging. By 2050 the potential labor force of 36 million people is expected to be slightly less than 9 million under the value of 2006. In the eastern German Länder a particularly strong decline is to be expected. There it is expected that the number of labor force will be halved. (Gerster 2008, cf.: 7) The Federal Statistical Office forecasts that in Germany already by 2030 there will be 7.5 million fewer people between the ages of 20 and 65 years than today. According to today's understanding this means 15 percent less employable people in Germany (Kutter, 28. 4. 2011).

Also the number of younger workers (15 to 29 years) will dramatically decrease in the future. While in 1990 in Germany around 14 million younger people were employed, by 2050 only 7 million young people will be available on the labor market. The reduction in the number of young working people will develop almost proportional to the falling birth rates between the years of 1990 and 2050. Similar processes are observable in almost all European states (IAB-short report 26/2007). Figure 4 shows these developments clearly.

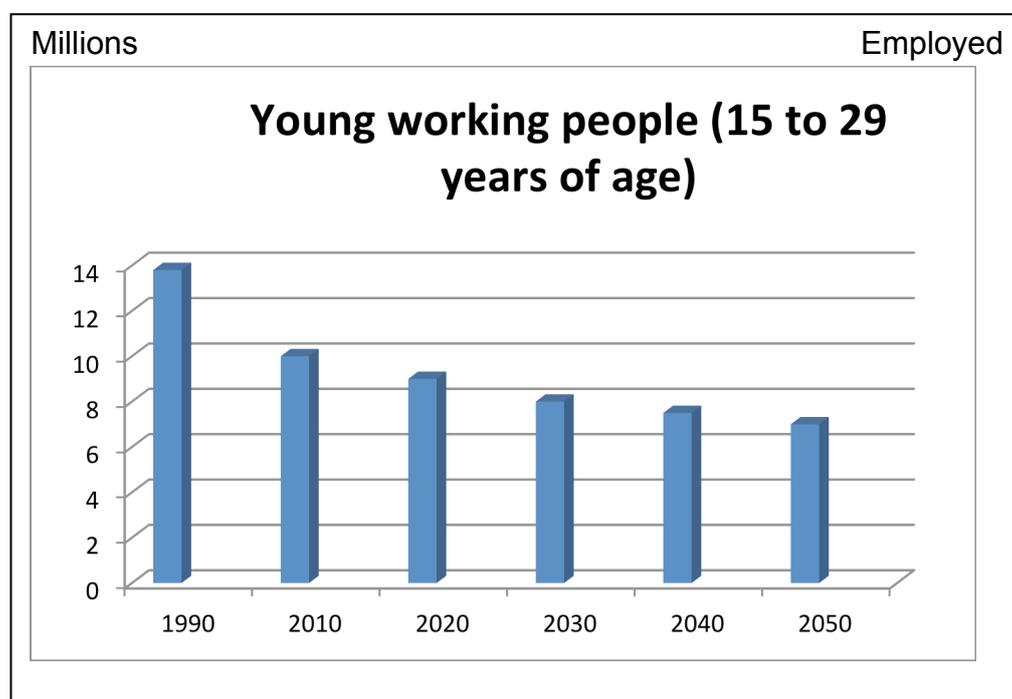


Figure 4: Employed people between the ages of 15 and 29 years in Germany.
Source: IAB- Kurzbericht 26/2007

This problem must be in today's society and politics the center of the discussion when it comes to the future improvements in living conditions, prosperity and general and vocational education. Industry, craft industry and public services are already complaining today about the lack of skilled workers and engineers, which cannot be replaced only by immigration from abroad. Therefore the *Süddeutsche Zeitung* proposes on 6. 5. 2011 on page 21 the following: "Only additional recruitment of female and of older workers will reduce the gap, explained the Chairman of the German division Frank Mattern in Berlin. Mc Kinsey assumes that in 2015 around 6, 5 million workers will be missing, if nothing is done." (epd 2011, No. 104)

3.1.2 DEMOGRAPHIC DEVELOPMENT IN ROMANIA

The problems outlined above, regarding qualified workforce and the aging population in Germany, are almost identical in Romania. The reasons for the Romanian development are however different. After the Second World War the population grew constantly and in 1989 exceeded 23 million. Then the population fell to 21 million. In Romania 222,400 children were born in 2009; however, 257,200 people died (Commission 2011: 37). This means the size of the population in Romania is shrinking considerably. The Romanian birthrate of 1.3 children per woman is almost identical with the German development. This also has an impact on the Romanian age structure, according to which – and this is typical for Europe – only 15 percent of the population is less than 15 years of age. A further 15 percent of the population is over the age of 65, although this value will increase in the medium term due to increasing life expectancy." (cf.: Graf, 2009) Also the economic and social problems since 1945 have contributed to the decrease in population. Many

well-qualified skilled workers and academics found jobs mainly in Italy, Spain and Germany.

3.2 HIGH YOUTH UNEMPLOYMENT RATES IN SPITE OF A LACK OF SPECIALISTS IN EUROPE

The unemployment rate of young people in many European countries is very high. For example, in Spain, the youth unemployment rate is at about 45.7 percent, and in Romania at 22.8 percent, and even in countries, whose pupils and students show particularly good performance in the Pisa study, such as Finland (20 percent youth unemployment) and Sweden (23.1 percent) youth unemployment rates are higher than in Germany (see Figure 5).

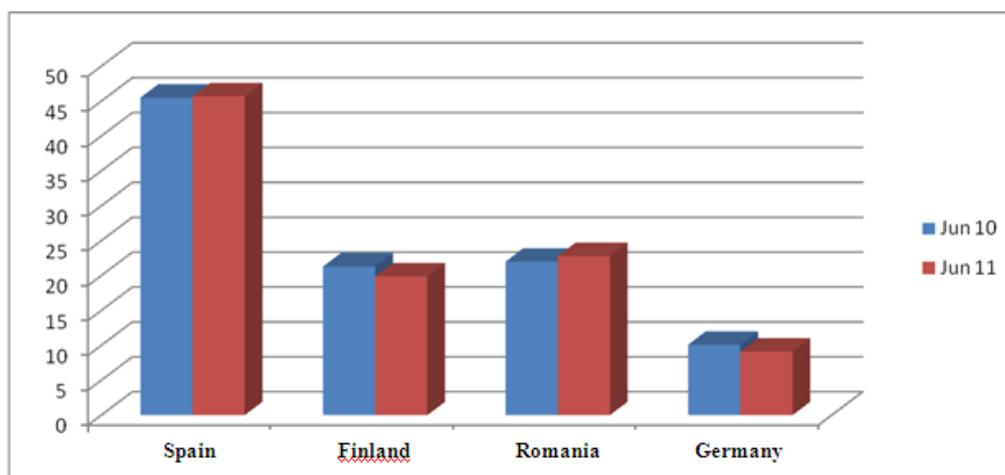


Figure 5: Young people without work (percent): Unemployment rates in June 2010 and June 2011 in percent
Unemployment rates in percent
Source: Allen 2011

These figures show the profound crisis in European society. In spite of the declining working-age population and the lack of qualified specialists, young people have in only a few countries the chance of getting a job. Almost every fifth young person is unemployed, or can find only an unpaid internship

or has a temporary low paid employment contract. With such employment contracts young people hope for long-term employment opportunities and are for example in Romania or in Spain, but also in the industrialized countries such as Germany, the UK and France, often bitterly disappointed. On the one hand it is stated that the unemployment rates for youth (15 to 25 years) is two to three times as high as those for older people (over 25 years). On the other hand the government has shied away for decades mostly due financial reasons from developing and implementing solutions.

Demonstrations and protests are developing and try to point out the decisive weaknesses for Europe. The confidence of young people in society, in industry and in democratically elected governments will be lost. The riots of the disguised marauding gangs in England in August 2011 cannot be compared to the silent demonstrations in Spain, France, or Germany. Most of the young people want to change the world and improve it with the help of their innovative capacity, with curiosity and cultural openness. The cries for help from the young people must be taken seriously. The future of all EU-countries is on the line.

The former German Chancellor, Helmut Schmidt summed up the future European problems as follows: "We are the only continent, whose population is not only aging, but also shrinking. At the end of this century the Europeans will represent only five percent of the world's population. It is therefore necessary for the nations and the states of Europe to stick together!" (Schmidt 2011). More education and creative knowledge is required to develop new European patents.

Experts from Germany and Romania give similar hints for common solutions. Christina-Monica Sfichi points out in her report "Unemployment in Romania during the crisis" that the unemployment rate in Romania can only be reduced by improved education and vocational training. (Monica Sfichi 2010). Thomas Öchsner points to the weaknesses in German society: "In companies there is a large demand for skilled workers. More than 40 percent

of the unemployed have no vocational training and a majority of them not even a high school degree" (Öchsner, 25. July 2011).

In Romania, but also in all other EU states (24, 8 % of the Romanians between 15 and 24 years were in the fourth quarter of 2011 without work, and 22, 1% was the average in the EU, (Federal Work Agency 2012), the unemployment for older workers (over 25 years of age) is lower than that of youth. According to the managers in their interviews, they suspect that the younger workers (skilled workers and academics) with their theoretical knowledge, but low practical experience, can be integrated into the labor market only with difficulty and thus they cannot find work.

The question here is: how can these potential weaknesses in training in schools and universities be improved? The study attempted to find the answers through interviews.

In advance however some basic considerations are necessary. Already 500 years BC, Confucius realized: "Tell me, and I will forget, Show me, and I may remember, involve me and I will understand." The pedagogue Georg Kerschensteiner said approximately 2,400 years later that: education is what is left, when everything learned is forgotten. In the knowledge-based society of the 21st century, where educational content and professional requirements constantly change and flexible "just-in-time" learning is becoming more and more a requirement for a successful career, application of specific integration and learning techniques such as self-directed learning are of increasing importance. That is why our children and young people need more guidance in self-directed learning, from kindergarten to university. If children at a young age already become "small researchers", then it is more likely that they will later include and practice self-directed learning more easily and more successfully.

For teaching in the schools and seminars at the universities that means that the learning process based on field trips, exploration, and action in practice, but especially on guided internship is required. This is to be carried

out in schools or universities. A longer guided internship must be prepared and coordinated with the help of industrial and business enterprises. The content of the internship work can be prepared at the University. The students will then recognize more clearly the relationship between educational content and competencies required in industry. Longer-term internships or even vocational training promote and improve the transition from the university to the professional field. Some representatives of industry, education and of the public service claim the students of the future need more practice in education at university level. This claim and possible solutions are presented and discussed in this study through interviews, reports, and surveys.

4 METHODS OF DATA COLLECTION AND DATA ANALYSIS

The methodological approach of data collection in the present study includes

- a survey among German and Romanian students and entrepreneurs,
- structured, qualitative interviews with individual students,
- as well as a systematic evaluation of internship reports, which the students drew up on the basis of key questions.

The different sets of data, which produce these three methodological procedures, provide a rich empirical basis, which allows different aspects of the underlying issue to be illuminated in detail. The structured questionnaire based on surveys provides a first rough overview of the ideas of students and entrepreneurs and also allows an overview and comparison between German and Romanian respondents.

The qualitative interviews allow a more detailed access to individual aspects of the whole problem and allow a more detailed take-up of aspects, which the survey has identified as particularly relevant.

The evaluation of the Intern Reports finally gives an insight into the individual perceptions of selected students. This is of particular importance in the context-related interpretation both of the survey, as well as the interview results.

Structured interview

The focus of this survey is the assessments of entrepreneurs regarding the required and the actual skills of workers in a successful business enterprise. The goal of the survey is to give an empirically based and as far as possible a representative overview of the opinions of German and Romanian entrepreneurs regarding the preparation in universities of potential workers for professional life.

For this purpose, a total of 20 entrepreneurs (10 large and 10 medium-sized enterprises) from Germany and 20 entrepreneurs from Romania were interviewed. It was tried, as far as possible to get a broad overview of entrepreneurs' opinions from different industries. Companies from a total of seven different industries from the energy industry, electronics industry, IT industry, footwear, furniture industry, tax consultancy and engineering were interviewed.

Because the present study does not intend to offer generalizable statements regarding estimates of the total number of German and Romanian companies to university education, but has only the more modest aim of determining the views of a wide number of entrepreneurs from different industries, the respondents were not selected on the basis of a random scheme. Moreover, the respondents were chosen specifically in terms of the industry and size of selected companies. This allows the capture of the views from a broad group of entrepreneurs from Germany and Romania and also to target industries that are of particular educational and economic interest to both countries.

The survey was conducted with the help of a standardized questionnaire, with both closed as well as half-open questions. The questions were divided into two blocks: 1) Basic information about the company, such as location, number of employees, industry etc.; and 2) assessments of the respondents on the quality of university education. A total of 26 questionnaires were sent in the period from January 2011 until March 2011. These questionnaires were returned answered by 20 German companies and after discussions by 20 Romanian companies. A first systematic review and coding of the questionnaire resulted in a data set, which contains the total data for 20 German and 20 Romanian companies.

These data sets were evaluated using the Software Program STATA 12. In the process mainly methods of descriptive statistics such as averages, bar, pie and other chart types, and in particular, a series of crosstabs were used.

Qualitative interviews and reports from interns

The survey data have been supplemented by information from intensive personal interviews with Romanian and German entrepreneurs. In addition, a systematic literature and newspaper articles analysis was carried out on this issue. This more qualitative data allows for the results of the survey to be classified in a broader socio-political context and specifically to respond to specific contexts, which have been identified in the polls as problematic. Thus it is also possible to identify the wider educational and economic relevance of the necessarily limited structured survey. In this process qualitative interviews are in particular very helpful for the elaboration and systematic comparison between countries of the individual views and perspectives of students.

These individual perspectives and detailed impressions of the importance and usefulness of systematic connection of theory, practice and

action-oriented learning, expressed in the interviews, will be complemented and expanded by empirical data from internship reports. These reports were drawn up by students during a four-week supervised internship. To ensure the comparability of the reports they were based on the general Guiding Questions, specified by the authors.

Question 1: Do you regard an internship during studying as important?

Question 2: What are the advantages and disadvantages of such an internship?

Question 3: Can you see a connection between the learning objectives of the lectures or the seminars in your university and the competencies needed in industry?

Question 4: What particular skills did you need when conducting practical work?

Question 5: Which special fields were not taught at the university?

Question 6: Please describe proposals for the improvement of internships. Question 7: Please explain your proposals for the improvement of university teaching.

While the results of the survey will be evaluated with simple methods of descriptive statistics, the information from the internship reports and interviews will be edited with the help of the procedure of qualitative content analysis (Mayring 2002: 114-121; Mayring 2007). Qualitative content analysis is a systematic theory accompanied procedure for the evaluation of text material of all kinds, which combines deductive and inductive elements. In contrast to quantitative analysis, the qualitative content analysis will also capture the context, the unsaid, significant individual cases as well as not obvious contexts of meaning. The theory-based determination of analysis categories is essential, before material evaluation, with the help of which the

text material is worked through¹. This first categorization system can be inductively modified and expanded in the course of the analysis.

As the name suggests a first schema with analysis categories is created, by which the qualitative textual material is summarized and evaluated on the basis of theoretical discussions and the existing empirical knowledge of the research question. This means that a list of theoretically and empirically important terms and groups of ideas will be created and the textual material will be investigated based on clues for the relevance of these categories.

As an example, both theoretical studies as well as existing empirical analyses (Grasedieck, D., Tele-tutoring calls on the self-organized learning 2010, Grasedieck, D., Dual vocational training and self-organized learning promote life skills 2012) argue that students' self-organized learning is perceived not only as a work skill, but more generally as a life skill, which facilitates not only professional success, but also success in life in general. From these theses can be obtained the analysis category "self-organized learning as a work and life skill". This in turn can show specifications for different labor and life contexts, but to ensure the simplicity of the example we leave it in this relatively undefined analysis category.

In the next step the text material will be investigated based on "clues" for the relevance of this category in the specific research context. In our case the question is: can clues in the interview texts and internship reports be found to suggest that the German and Romanian respondents understand the ability to self-organize their learning not only as a labor skill, but also as a life skill in general.

This systematic, deductive approach is supplemented by an inductive procedure, which allows complementing and refining already existing categories or entirely new data based categories. In order to continue with the already commenced example: one observes that the relatively general and

¹ The category scheme that formed the basis for the analysis of the qualitative interview texts and placement reports, can be found in Annex XY.

consciously held wide analysis category "self-organized learning as labor and life skill" is not enough, to accurately capture the width of the empirical data, so you can build on the basis of the text materials inductive subcategories, which allows a more accurate description of the answers, and their relationship to one another. Subcategories based on a specific text example can then be integrated into the category schema and taken into account in the analysis of further sections, in order to determine the extent to which "patterns" emerge.

Defining entirely new categories can be illustrated with the help of a picture of a funnel. For this procedure the answers of the respondents to openly asked interview questions, as well as unstructured information from the individual internship report will be analyzed in multiple stages and "compressed" "step-by-step. Similar to a "funnel" one begins with very specific categories, which describe the contents of the interview and internship report texts, and then compresses this piece by piece, so that the results are some general categories, which crystallize the answers of the respondents in a few terms.

Like the results of the structured survey using a questionnaire, the results of this analysis can be generalized limited only by the group of respondents. Strictly speaking, these results cannot be generalized at all and only have validity for the individuals answers as an analysis tool. The advantage of the method lies, however, in the close relation between categories and the investigated social reality, which increases the so-called internal validity of the results. Simply put the accuracy of the analysis categories and their resonance with the individual reality of the respondents increases, while the range of their applicability decreases. In light of the significant practical relevance of the investigation this is, however, a significant advantage in the generation of practical results. It is therefore an effective complement to the questioning results, which necessarily turn out "rougher" and more general, to ensure the comparability of the survey results.

In short, the loss of generality is outweighed by the gain in specificity and practical relevance.

5 SURVEY OF ENTREPRENEURS AND ACADEMICS IN GERMANY AND IN ROMANIA REGARDING PROFESSIONAL SKILLS FOR ACADEMIC PROFESSIONS

A survey was conducted in different sized companies of business owners, business leaders and managers to get an overview of the necessary skills required by a qualified university-educated professional in industry, commerce and trade. This survey was of course only concerned with academic education at universities. The aim of the survey was to complement academic training with the skills desired by the economy and thereby improve the transition from university education to working life for young people. (See appendix)

For university-educated workers in European society who want to preserve their jobs in the future and especially for young European graduates who seek work, employment must be the focus of their life planning. Therefore the responses of operations management personnel (eg engineers or managers) in the wider economy regarding future skills and qualifications of graduates with a bachelor's or master exam are crucial.

The questionnaire (see Appendix) was designed to capture all the competencies of employees (academics) in relation to the learning of social skills, theoretical knowledge and independent learning which company owners or managers desire. The comments about the current educational standard of independent learning and practice-oriented courses at university or the supervised internships in industry were as interesting as the size of the company. One could imagine that the needs and the demands of managers on the study objectives vary according to the size of the company. The same questions about the aims of training were submitted to academics who are

already employed in industry or in public service about their sphere of activity in their field.

Ten large companies (with over 1000 employees) and ten small-and medium-sized enterprises in Germany and Romania received the questionnaire by email or post asking for answers. In Germany and Romania ten managers of large companies and ten managers of small and medium-sized enterprises responded to the written demand, but only after additional visits at the premises.

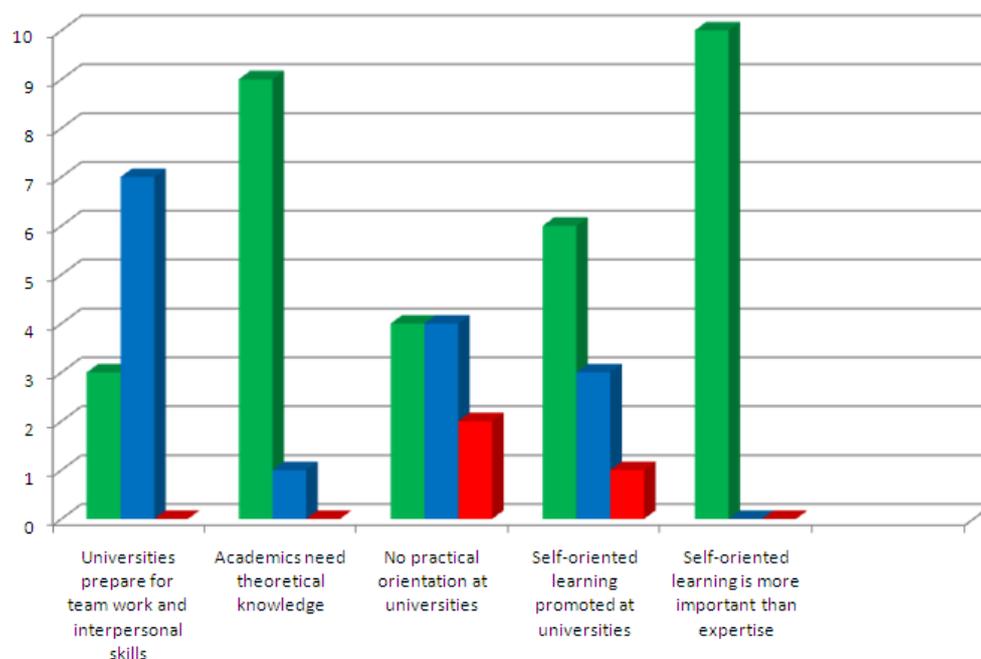


Figure 6: Responses of 10 managers of large companies in Germany to the question: Please rate the necessary skills and competencies of university graduates on a scale of 1 (strongly agree - green column), 2 (partly agree - blue column) to 3 (not true - red column).

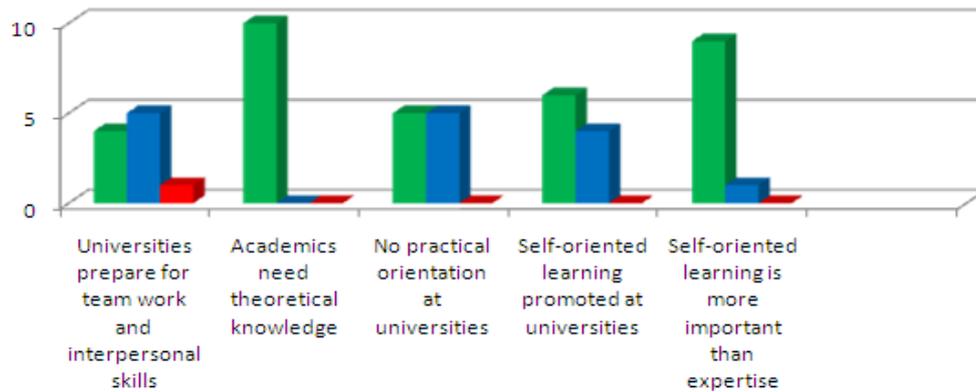


Figure 7: Responses of 10 managers of small and medium enterprises in Germany to the question: Please rate the necessary skills and competencies of university graduates on a scale of 1 (strongly agree - green column), 2 (partly agree - blue column) to 3 (not true - red column).

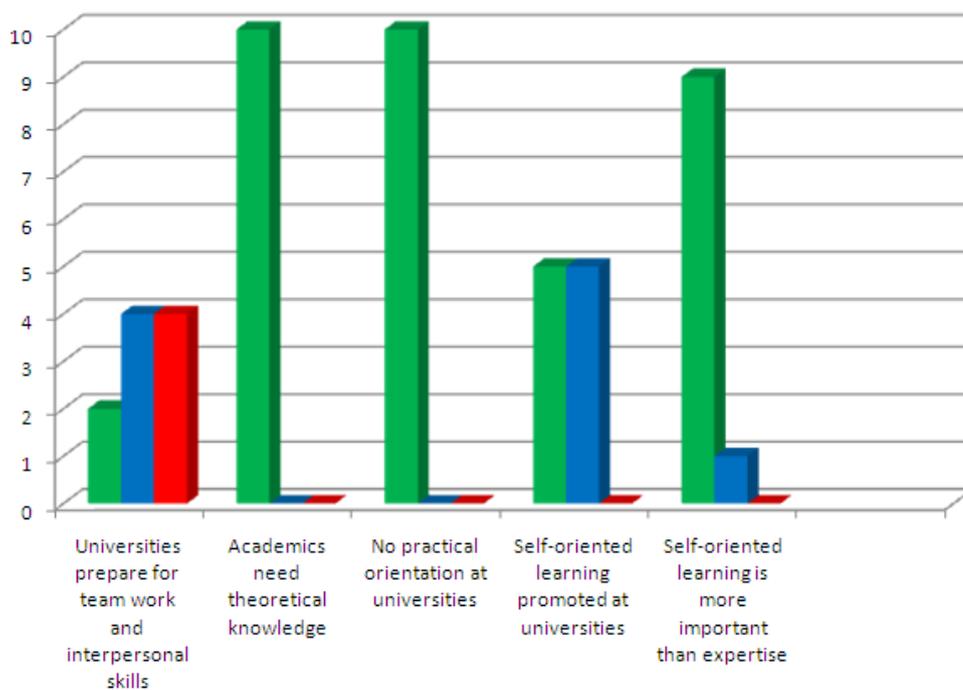


Figure 8: Responses of 10 managers of large companies in Romania to the question: Please rate the necessary skills and competencies of university graduates on a scale of 1 (strongly agree - green column), 2 (partly agree - blue column) to 3 (not true - red column).

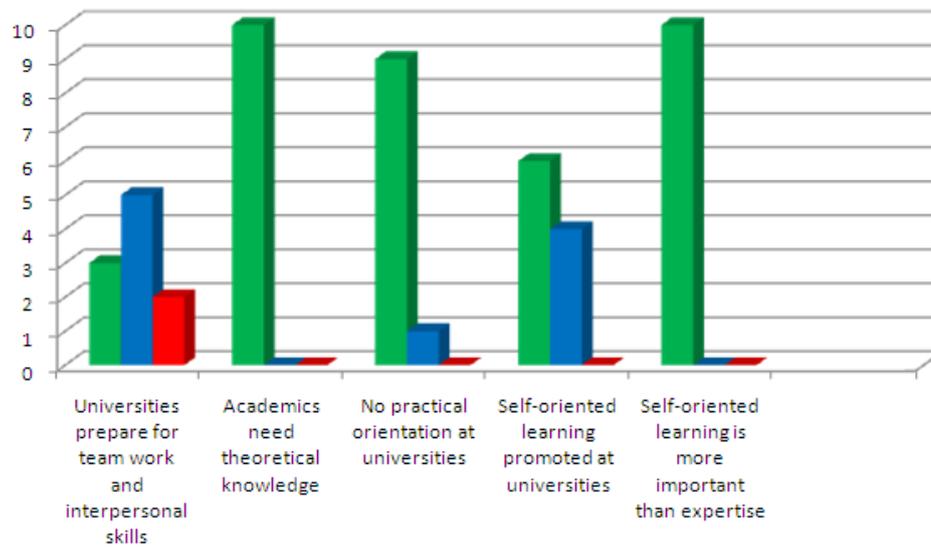


Figure 9: Responses of 10 managers of small and medium enterprises in Romania to the question: Please rate the necessary skills and competencies of university graduates on a scale of 1 (strongly agree - green column), 2 (partly agree - blue column) to 3 (not true - red column).

As the figures show, the results of the survey of directors and entrepreneurs from large companies match in trend with the replies of the management of small and medium enterprises in the two countries. The management demands, to a large percentage:

1. Universities should increasingly in future support independent learning in courses. Managers appreciate the ability to self-organize the learning process more than outstanding expertise.

2. Practice-oriented learning is rarely offered in educational institutions. Consequently it is recommended to plan more internships in companies in the curriculum of universities. There are several ways to promote the relevance of practice. In some countries, such as Germany and Austria, young people can complete internships over several weeks or spend three to four years of dual professional education or obtain a bachelor's degree with dual vocational education in the economy.

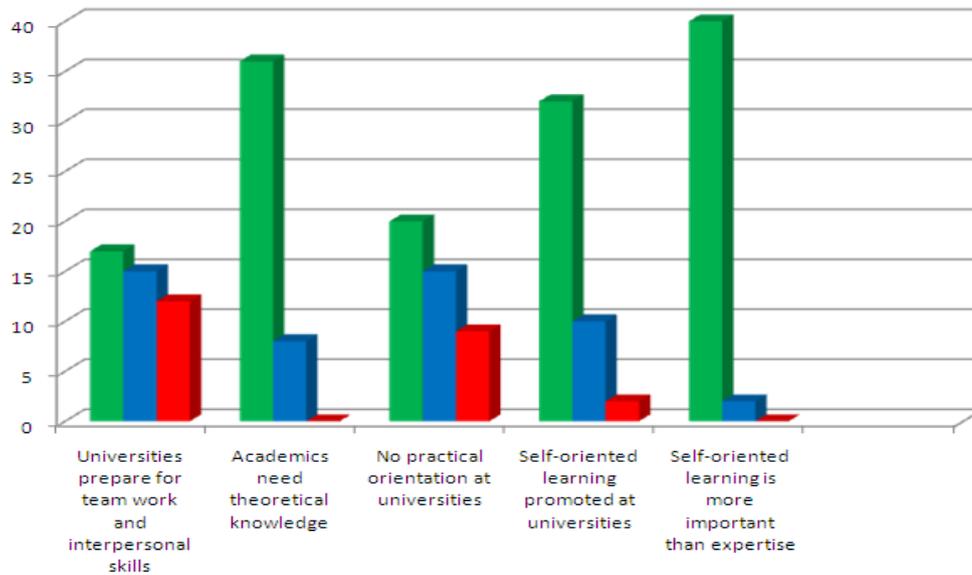


Figure 10: Responses of 44 students of the Babeş - Bolyai University to the question: Please rate the necessary skills and competencies of university graduates on a scale of 1 (strongly agree - green column), 2 (partly agree - blue column) to 3 (not true - red column).

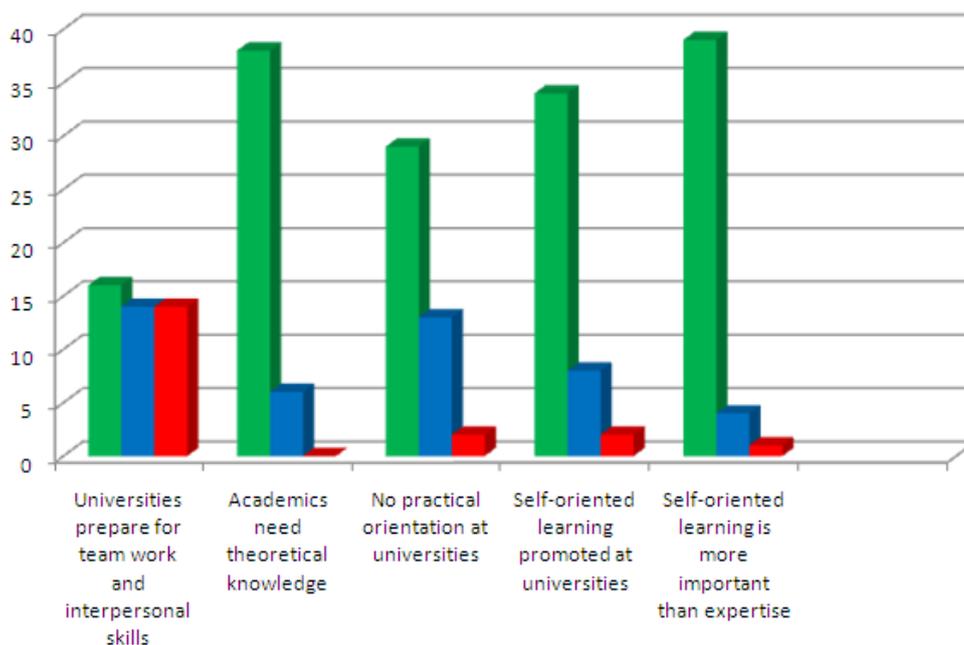


Figure 11: Responses of 44 students of the University of Essen / Duisburg to the question: Please rate the necessary skills and competencies of university graduates on a scale of 1 (strongly agree - green column), 2 (partly agree - blue column) to 3 (not true - red column).

The results of the survey of students (see Figures 12 and 13) at the Babeş - Bolyai University and the University of Essen / Duisburg clearly show that self-organized learning should be more strongly promoted both in training and in university education, in educational establishments and the share of internships should be extended. Taking into consideration these desired objectives of entrepreneurs, managers and students in training; an internship in German and Romanian companies was arranged for the students.

Therefore, this study examines the effectiveness and the change in the motivation of students in Romania and Germany through internships with the help of surveys and interviews. Eighteen students of the Babeş - Bolyai University and the University of Essen / Duisburg who had completed a four-week internship in industry, trade and commerce, were surveyed. A further comparative study is hardly possible because industry or commerce in Romania rarely offer other practice-oriented training opportunities.

6 THE LABOUR MARKET EXPECTATIONS OF THE CURRICULUM AND THE POSSIBILITY OF THEIR IMPLEMENTATION.

Of course, the universities do not have to deliver the perfect employee, but how can the demands of the managers of the economy and the needs of students at universities and society in Germany and Romania be at least partially fulfilled?

One possible approach to improving higher education is by taking into account the theories of constructivism in vocational education. "Constructivist learning can mean: to proceed in the course by means of complex, as near as possible realistic and professional, holistic tasks in a social context " (Scolding 2010). The student will be involved in a process in which he himself is to be active. The basic idea could also be undertaken by university education. For the design of learning environments in universities, this means that the students should partially link their knowledge with the real life situation and

professional life. The learning content and knowledge will be to a certain extent applicable later in life or at work. This objective can be easily reached by a close connection between theory and practice. The bridge between theory and practice could be significantly strengthened through the agreement between the university and the industry associations or industrial companies regarding practical learning content.

61% of academically trained workers in Germany with up to ten years of career experience stated that they were simply thrown into the deep end of professional work in industry or the economy after graduation. University studies in Germany scarcely prepare for professional life, as reported by the survey. The analysis is devastating. The sudden pressure to perform, the inclusion in the company, talking to customers, superiors or colleagues, all these increased the difficulties of career entry. This survey was conducted in June and July 2011, with the help of questionnaires and personal interviews with 1200 students and 1000 graduates with work experience. (Kürzel, in *Süddeutsche Zeitung* No. 259 / Thursday, November 10, 2011 / page 44). These statements have been confirmed by the present survey of entrepreneurs, managers and students. A general desire was the offer of a learning bridge between theory and practice through directed internships while studying.

This requirement, named by both male and female students as well as managers, clearly shows that the theoretical knowledge acquired at university must be strongly connected to the necessary practical skills in the workplace and new practical skills must be worked out. In Germany many companies advertise in schools and universities to pupils/students for training places or internships. The large, medium and small businesses are interested in close cooperation with general schools and colleges to maintain the high technological standards in industry and trade and to continually improve them. Many German companies see it as a necessity to incorporate the costs of training of the younger generation in the annual corporate budget. Nearly 60 percent of companies in Germany in 2009 supported universities, students and

studying company staff with 2,2 billion €. The universities received 640 million € in material and service donations. Round 1,5 billion €, were given to the students as grants for college tuition, for internships or dual degree programs with Chamber of Industry and Commerce or trade degrees. The companies support particularly intensively economic, engineering, computer and natural sciences.

About 50% of all businesses provide students with an internship. Furthermore, undergraduate or graduate students can analyze company-specific problems in their bachelor's or doctorate. Through this financial support of university education, the companies advertise in press reports or try to recruit future employees. (Christiane Konegen-Grenier 2012)

In the survey in Germany it was therefore difficult to find enough students who have not completed internships in companies, public administration and schools in their respective discipline. However, many students criticized the brevity of the internship and the lack of monitoring and the lack of support by the professors of the universities. In addition, many internships are offered in the economy as unpaid work.

Many German companies provide students with an internship in the company's specific business areas. Through these opportunities students learn/are aware of the real world of labor and the trainees improve their social skills. The overall effectiveness of internships in German companies could be further strengthened through intensive supervision by University lecturers and through closer coordination of the training fields in theory (University) and practice (business).

In contrast to German training opportunities, in Romania only a few students complete a subject-specific internship. Most students studied economics without practical experience in Romanian companies. However, almost all students were very interested in a company-specific internship and wanted an internship based on educational content established between professors and industry representatives.

7 EVALUATION OF OPEN INTERVIEWS AND INTERNSHIP REPORTS OF ROMANIAN AND GERMAN STUDENTS

In this chapter the answers of the Romanian and German students in the open interviews and the structured internship reports are systematically evaluated and compared. Here the qualitative content analysis method described in the Methods section was applied.

Practical experience, self-discovery, application strategy

Both the German and Romanian student respondents interviewed regard an internship during their studies as important. For many respondents it is the dedicated work experience collected during an internship that is especially important and helpful. The Romanian students reported for example that the opportunity to work in a "real company" and an "overview of their own area," are particularly positive characteristics of an internship while studying. In his report on an internship at a large German company with international business in Romania a Romanian student reported:

"I found the internship very useful. Now I not only have a detailed picture of the whole system at company A, but also a glimpse into the process regarding the operation of distributors in general."²

The German respondents give a similar view and see, for example, the opportunity to gain "insight into the future professional world" as a positive aspect of an internship. Also the "independent" work and "independent

² For purposes of anonymity, the name of the company has been made illegible. When reproducing long quotations from open interviews or internship reports linguistic "smoothing" is made, if necessary. However, the content of the statements, will thereby not be modified in any way.

experience gathering" is highlighted by both Romanian and German students as a positive experience, if the internship is prepared and reflected upon and if the learning content overlaps with the curriculum of the course. A study-related internship is particularly for the surveyed Romanian students a new way of self-discovery. For example, some respondents report, that the internship allows them "to be self-sufficient" for a period of time and "to see how the profession fits the personality"; aspects that seem to be less important for the German respondents, although one respondent indicated that you can learn a lot about yourself through internship.

Both groups of trainees are also united in their assessment that an internship enables students to better link theoretical knowledge and practical experience. Here for the German respondents the "practical application of theoretical knowledge" is, above all, important. Interestingly the Romanian respondents see in gaining practical experience a way to further their "theoretical understanding also (from the work process; author's note)." While the first aspect ("theory application") receives a great deal of attention in theoretical discussions the aspects highlighted by the Romanian students, that an internship can also expand and improve theoretical knowledge, often have a less significant place in the discussion.

Another positive aspect of an internship which is highlighted by both German and Romanian respondents is the fact that it can be useful as a starting point for future applications. This application-strategic aspect of a course-related internship is described by a Romanian respondent as follows: "If you do an internship, a long-term collaboration in the company is possible. One can secure a job for the future." The German respondents see this in a similar way and stress that the collection of "contacts for later applications" is an important positive aspect of an internship. A Romanian student describes this in his internship report with the following words:

"I believe that after such an experience (meaning the internship, author's note), we have a lot more chances of being employed by

Company A or in other sales and trading companies. The manager of Company A has indicated to us that we could come back in 1 or 2 years and perhaps have an interview with her. "

Despite all these positive characteristics, which an internship while studying brings for the Romanian and German interviewees, both groups also see disadvantages. The Romanian students usually name the low wages and poor working conditions as the major negative aspects of an internship. The German respondents also point out organizational and planning problems at university level as often negative aspects. For example, some respondents complain, that there is "no support from the university," and that self-organizing an internship may raise difficulties.

Relationship between university and professional life

When it comes down to the link between academic theory and the practical business world, the respondents see a fundamental relationship between the learning objectives of the lectures and seminars in the University and the skills needed in industry. This basic relationship is however essentially restricted by a lack of practical reference at universities, which are often theory-oriented. For example, as reported by a German respondent: "At the university everything is very theoretical, the necessary foundations and theories are taught, and work-related practical aspects are (usually) disregarded". This assessment is shared by company representatives³.

Required skills in the professional world: social skills, organizational skills, and expert knowledge

³ Personal E-Mail correspondence with Romanian companies, 2. April 2012.

Both the German and the Romanian surveyed students agree in their assessments of the skills that they need in the professional world. In overwhelming diversity they highlight the importance of social skills, organizational skills and expert knowledge as important skills for the world of work. While teamwork and cooperation skills can to some extent perhaps be learned in theory – although here theoretical courses already reach their limits - learning empathy and trustworthiness only on basis of theoretical courses is very difficult. Although the respondents did not explicitly mention it in the interviews, the importance in particular of the latter skills can still be seen as a further indication of the importance of study-accompanying internships, as these skills have to be learned especially in the practical approach to problems and colleagues.

Among the organizational skills the Romanian and German students highlight in particular independence. In addition to "organizational skills" and "punctuality" in general, in particular "self-organizing" and "self-study and work" are seen by many respondents as important skills in the professional world. This finding is particularly interesting when looking at a different set of skills which is considered important and which refers to the willingness and ability to permanently continue learning even after graduation. Thus both the Romanian and the German respondents emphasize in different ways the meaning of "willingness to learn", "desire for further training" and "rapid acquisition of new skills". Some German students also emphasize a consciously critical attitude to their own knowledge when they state that the "constant questioning of what they have learned" and "theory comparison" are important skills in the professional world. Taken together these views indicate the great importance of self-organized learning as a key skill in today's business world, a finding, which the author realized and noted, theoretically and empirically, repeatedly on other occasions (Grasedieck, D., 2010; Grasedieck, D., 2012).

Also mastering and constantly learning new professionally relevant “knowledge”, which is named by the respondents as the third great “core competence” in the professional world, fits perfectly into this image. In this context, the acquisition of professional expertise appears to be less a target for a single university course, but more an ongoing process that begins at the university and then continues constantly at work. Once learned, knowledge is seen as something that is to be constantly questioned and updated – maybe also revised – based on new professional experience and practical problems.

Improvement of the internship: Operational integration, support, and payment

Regarding improvement of study-accompanying internships the responses of Romanian and German respondents also show a clear trend. Both groups named the improvement in the integration of students into the professional workflow and improved academic and operational support structures. German students show, for example, that the actual hours worked during the internship need be used more effectively and pure “sitting around” should be avoided. A Romanian student illustrates the problem vividly:

“Perhaps a clear program should be formulated and the students should not only be given tasks that crop up. Sometimes we feel that we cannot help, and the staff sees us as an obstacle while carrying out their work.”

Furthermore, some of the German respondents think that “often very little is expected “ of students in industry. Here too there is room for better integration of students into business processes on the part of the host company. In addition, some of the Romanian respondents also pointed out possible improvements regarding a “stronger link between theory and practical work”.

A second major area for possible improvement of internships while studying is seen by the surveyed students as being on the side of universities. Here it is particularly emphasized that the universities can offer improved supervision opportunities before, during, as well as after an internship. German respondents indicate, for example, that a "more concentrated picture of internships" on the part of universities would be a step in the right direction. Individual "help for planning an internship" as well as intensive supervision during and after an internship are mentioned as possibilities for improvement.

Improvement of university study: practical application and support

A final area in which the opinions of German and Romanian students were polled by means of open interviews concerns possibilities of improving university teaching. The opinions of the respondents fit seamlessly into the previously drawn image of settings and assessment. Both German and Romanian students see especially in professional and practical experience considerable room for improvement for university education. A Romanian student aptly formulates: "Too much theory and too little practice" often characterize university education. Another respondent states, "the best thing that can be done is to combine education with more practice."

The lack of practical experience of teachers is named by the respondents as an important reason for the lack of practical relevance at universities. They are often good "theorists without significant practical experience and therefore only partly familiar with specific problems in the industrial and professional world.

In addition, German students also point out that the situation of supervision in the universities needs to be changed: "more choices", "smaller classes", and "improved contact to professors" were named as important steps in university study.

8 IMPROVEMENTS AND PROPOSED SOLUTIONS FOR UNIVERSITIES

The study *The benefits of contacts from internships and student jobs for employment for graduates* (Sarceletti 2007) reviewed the job search of graduates in academic disciplines: Language/Cultural sciences and Engineering in industry. The result of the evaluation was that through the personal contacts made through an internship while studying 33.1% of the cultural scientists and 36.6% of the engineering scientists found a job in those companies. The scientific paper notes that students, who have not completed any internship or could not complete one, are disadvantaged.

Employers, of course, offer permanent jobs after graduation only to those student interns who showed good performances at the internship in the company. For the employer and of course for the graduate this amounts to certain advantages when finding employees, respectively when searching for a job. Employers do not have the cost of job advertisements in the press or on the Internet, a decreased risk in terms of candidate performance and a lower fluctuation. The employees have also fewer costs for their applications and are familiar with the tasks and the work environment of the former internship company. Furthermore Andreas Scarceletti points out in his study that internship contacts lead to a better starting salary. "The starting salary for people who get the first job through an internship contact is higher than for those who get their first job through a formal way." (Sarceletti 2007) (p. 60, No. 4)

The core questions of Sarceletti's study were included in the survey of managers of the German and Romanian companies, which offered an internship to students. The ratings and reviews of businesses regarding the following statements were examined:

1. Practice-oriented seminars or lectures are offered by most universities.
2. During study internships are essential.
3. To the highly motivated interns, I would like to offer jobs, after graduation.
4. Interns known by the company receive a higher starting wage.

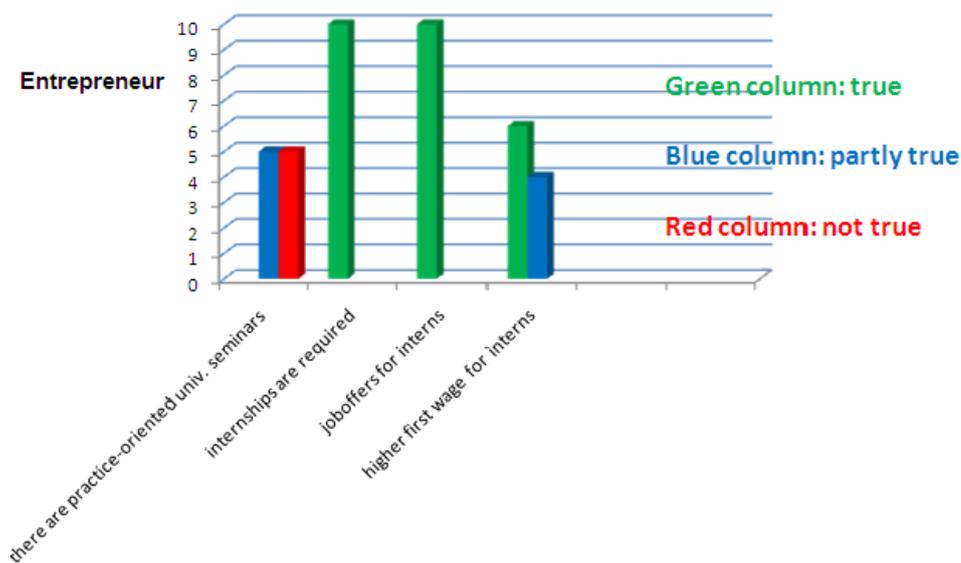


Figure 12: Responses of 10 managers of small and medium enterprises in Germany the question: How do you assess the need of student internships in industry? (Scale of 1 (strongly agree) to 3 (not true))

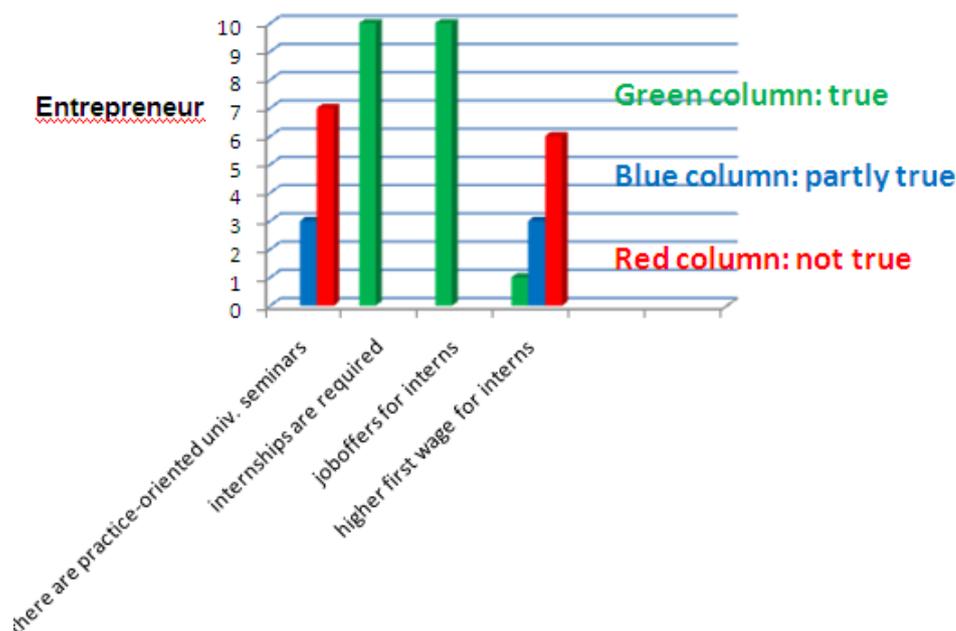


Figure 13: Responses of 10 managers of small and medium enterprises in Romania to the question: How do you assess the need of student internships in industry? (Scale of 1 (strongly agree) to 3 (not true))

As the figures show, the results of the first three questions to representatives of the German and Romanian companies are in the core statement comparable. All 20 entrepreneurs, both the ten from Germany and the ten from Romania, answered to the two statements: a) During a course internships are absolutely necessary, and b) I would offer jobs after graduation to the highly motivated – with the statement "true". Only in case of the following statement: Practice oriented seminars or lectures are offered by most universities – the opinions of the Romanian and German managers were different. Five German entrepreneurs underlined "partly true" and five "not true". Romanian companies rated this aspect more negative, seven entrepreneurs chose "not true" and three entrepreneurs "partly true".

Completely different, however, were the statements regarding: "Interns already known by the company receive a higher starting salary." While the German managers mostly offer a higher starting salary to the interns (6 – "true" and 4 – "partly true"), the majority of Romanian entrepreneurs do not

give a higher starting wage for interns (1 – "strongly agree", 3 – "partly true" and 6 – is not "true").

To compare the statements and opinions of the students and the companies, 18 interns and their companies were surveyed.

The companies assessed the behavior, motivation and knowledge of the students. The company instructors expressed themselves very positively about the behavior and motivation of the students. The level of knowledge was evaluated in many areas of knowledge as insufficient. Especially lacking was practical learning content at the universities. The connection between theoretical and practical learning content should contribute more in the future to university courses. As regards applications by the interns after their study, the companies would preferably hire these students because the managers of the company have met the highly motivated and eager to learn young people. The survey clearly shows that companies, when it comes down to job applications, prefer students with personal company contacts.

The aspirations and demands of the economy are very contradictory. On the one hand representatives of industry and trades demand of the students a necessary practical experience, on the other hand they offer the student few and mostly unpaid internships. Of course students cannot be placed in the working environment without training, guidance and assistance - they need support and explanations regarding the company's work. Many companies will not accept this training burden. The general requirement – after a close integration of theory and practice in school and university education – is supported by all industry representatives. But then when internships have to be specifically planned, many representatives in the business world avoid it. One can assume that some industry representatives want to hire directly, with no training time in their own company highly trained university graduates with a strong experience in a competitors' company. This attitude could be noticed in some companies in Germany. In Romanian companies this was frequently observed. So in September 2011 forty companies in Romania were asked to

give internships to the students of the Babes Bolyai University. Only six companies responded. These companies, however, offered the students an internship very openly. Two companies have already been offering guided internships for the past two years.

Through discussions and visits to Romanian companies four companies later declared themselves ready to offer internships to eighteen students in March and in July 2012.

9 OPTIMIZATION OF UNIVERSITY STUDIES AT BACHELOR LEVEL BY MEANS OF A CLOSE LINK BETWEEN THE THEORETICAL AND PRACTICAL LEARNING CONTENT.

How can the needs and demands of students, entrepreneurs and managers at Romanian universities and in companies be realized and how can the corporate internships be more closely linked to theoretical university education? The principle of the German dual undergraduate education (professional education and bachelor in 3 to 4 years of study) can be seen as a foundation for the study at Romanian universities.

In Romania for example an industrial salesperson is trained in seven months in theory and practice: After company practice of 720 hours and 360 hours of theory, the trainee can complete the industrial test with the following skills – interpersonal communication, computer skills, social skills, coordination of payments and deposits, making offers, complaint handling and drawing-up contracts. (Catalin Toma 2012)

The learning content and project areas of vocational education in industry and in vocational schools can be connected regarding time and curriculum to Romanian university education. The academic year begins at Romanian universities early October and is interrupted in January by semester exams. After the exams, and after a one-week-long vacation, the academic year continues until the end of June and finishes with exams. The basic

structure of the second and third year will not be different and will start again in early October with further lectures and seminars. (see Figure 14: Bachelor study and company training with Romanian acknowledged degree exam)

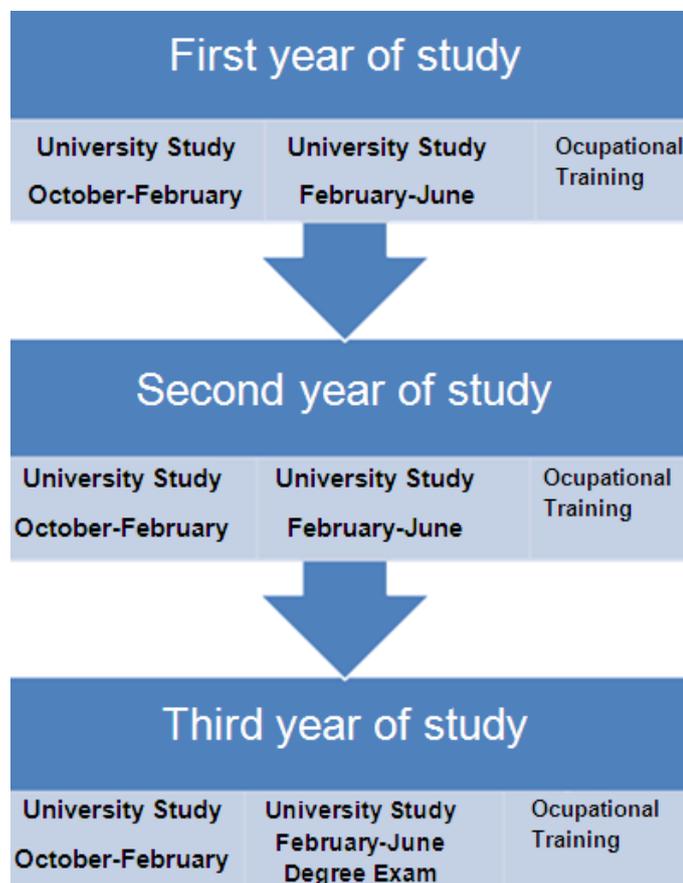


Figure 14: Bachelor study and company training with Romanian acknowledged degree exam

The vacation in February/March and in the months of July and September, are used by the students, as shown in Figure 16, for company internships. The possible additional theoretical learning content of the industry test could be worked out during the study period or crossed with the academic learning objectives. Following this proposal students complete the examination offered by the Romanian Industry Institute after the bachelor examination offered by the university.

The work in the companies and the bachelor courses leads to an increased learning load for the students. Through the described advantages the dual bachelor study will prove for some highly motivated students to be a very interesting study proposal.

10 CONCLUSIONS – THE THEORETICAL UNIVERSITY EDUCATION NEEDS MORE PRACTICE

The theoretical education in universities should not be shortened because with the help of theory the students learn to think in complex contexts. The traditional bachelor program should not be changed; however the Romanian students could additionally complete the exam of a skilled worker and thus meet the demands and wishes of both the managers and the students. These proposals can only be achieved through close cooperation and coordination between the university and industry. Therefore in the future contacts between university professors and managers in industry need to be strengthened.

Only a few Romanian companies feel responsible for academic education. There is no German dual vocational education and a vocational qualification enjoys little or no recognition. While in Germany many high school leavers try to gain a professional training with a vocational qualification, (only 35 to 43% of the adolescents studied between 2007 and 2012 at universities) (Schmoll July 14, 2012), in Romania 63.8 percent of young people studied during the academic year 2007/2008 at universities. (OECDiLibrary 2009) The total numbers of students in Germany and Romania show very clearly the trend that an increasing number of young people in Romania want to complete their education at university. On the other hand young people in Germany choose both university study and the dual vocational education. In 2008 in Romania, 4.78% of the total population studied at universities (907.353 out of 19 million Romanians), but in Germany

only 2.34% (1.941.763 out of 82 million Germans) (OECD Comparative Education 2008)

Due to demographic changes in almost all European countries (the reduction of the European population and an increase of the world population), the work of all young people will be needed in the future and every teenager has a good chance in the professional world. Therefore it is necessary to remedy weaknesses of the European educational system. On the one hand the transition between school and work and between school and university through improved professional advice and guided internships, on the other hand the study at universities needs to be complemented by internships. To reduce the unemployment of skilled workers, lifelong learning should be complemented by practical and theoretical training opportunities. Only through these advanced measures can Europe maintain and improve its prosperity and competitiveness in the global economy. So this call to young people in Europe could motivate them: "For your future life you need a qualified and practice-oriented university education and our European society needs your work."

The interviews with the managers, academics and students prove that a strong link between university teaching and professional practice is wanted and the introduction of practical modules is deemed essential.

To improve education in Romania and to increase the number of internships for future employees in the Romanian economy, the benefits of practice-oriented trained academic staff in industry, commerce and trade need to be more actively discussed.

The message for the future of the Romanian economy must be: Romanian companies benefit from a practice-oriented university education. That is why industry and commerce are also responsible and accountable for the training of university graduates.

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12 ANNEX

12.1 QUESTIONNAIRE TO DIRECTORS AND ENTREPRENEURS ON
"SKILLS OF GRADUATES" (GERMAN, ENGLISH AND ROMANIAN)

Prof. h.c. Dr. Dieter Grasedieck
den 20. Februar 2011

46244 Bottrop,
Oberstudiendirektor a. D.
Küferstraße: 3

Sehr geehrte Damen und Herren,

Die theoretischen Kenntnisse und praktischen Anforderungen im Handwerk und in der Industrie verändern sich permanent. Professoren an Universitäten und Lehrer an Berufskollegs müssen sich in Vorlesungen, Seminaren und im Unterricht auf diese Herausforderungen einstellen.

Deshalb ist uns Ihre Meinung und Beurteilung sehr wichtig, da wir in den Universitäten und in den beruflichen Schulen neue Lerninhalte und Lehrverfahren stärker auf den Beruf bezogen einführen wollen. Zu diesem Zweck führen wir eine Befragung deutscher und rumänischer Akademiker und Akademikerinnen in unterschiedlichen Branchen durch. Ziel dieser Befragung ist es, einen systematischen Überblick über die Einschätzungen von Ihnen zur Qualität der universitären Ausbildung in Deutschland und Rumänien zu erhalten.

Zunächst möchten wir Sie bitten, uns einige grundlegende Merkmale Ihres Unternehmens mit zu teilen. Diese Informationen ermöglichen uns, Ihre Ansichten mit denen anderer Unternehmerinnen und Unternehmer aus anderen Branchen und Regionen systematisch zu vergleichen.

Wie viele Mitarbeiter beschäftigt Ihr Unternehmen?

.....

Wo hat Ihr Unternehmen seinen Hauptsitz?

.....

Hat Ihr Unternehmen Standorte in anderen Ländern?

Ja	Nein
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Beurteilen Sie bitte die notwendigen Fähigkeiten und Kompetenzen der Akademiker und Akademikerinnen nach folgenden Kriterien – Trifft voll zu, Trifft mittelmäßig zu und Trifft gar nicht zu-. Kreuzen Sie bitte an.

	Trifft voll zu	Trifft mittelmäßig zu	Trifft gar nicht zu
Die Universitäten bereiten auf die notwendigen Team- und Sozialkompetenzen für den Beruf vor.			
Die Studenten/innen benötigen in ihrem Leben und im Beruf vertiefte Theoriekenntnisse.			
Es werden keine praxisorientierte Seminare oder Vorlesungen von den Universitäten angeboten.			
Das selbstständige Lernen wird an Universitäten gefördert.			
Das selbstständige Lernen ist im Berufsleben eines Akademikers oder einer Akademikerin wichtiger als Fachwissen.			

Vielen Dank für Ihre Mitarbeit!

Prof. h.c. Dr. Dieter Grasedieck

February 20, 2011

Oberstudiendirektor a.D.

Küferstraße 3

46244 Bortrop

Dear Sir or Madame,

The theoretical and practical requirements of trade businesses and industry are continuously changing. Professors at universities and teachers at vocational training schools alike have to adapt their lectures, seminars, and other courses to this challenge.

Since we seek a stronger connection between practical and theoretical knowledge in courses at universities and schools of vocational education, we are very much interested in your views and opinion. Hence, we survey academically educated personnel in different industry sectors in both Germany and Romania. We aim at receiving a systematic overview over your views on the quality of academic training in Germany/Romania.

First, we would like to kindly ask you to provide us with some information about the basic features of your company. This information will allow us to systematically compare your opinion with those of employees of other companies in different industry sectors and regions.

How many employees does your company have?

.....

In which country is your company's headquarter located?

.....

Does your company have branch offices in other countries?

Please evaluate the necessary skills and competencies

Yes	No

of academic personnel on a scale from (strongly agree) to (strongly disagree).
Please check-off the respective boxes.

	Strongly agree	Neither nor	Strongly disagree
Universities provide the team and social skills necessary for professional careers.			
Students need theoretical knowledge in both their professional and private life.			
Practically oriented seminars or lectures are provided by most universities.			
Universities promote self-organized learning.			
The ability to learn in an autonomous fashion is more important for an academic than substantial knowledge.			

Thank you very much for your kind support!

Profesor h.c. Dr. Dieter Grasedieck

20 februarie 2011

Oberstudiendirektor a.D.

Küferstraße 3

46244 Botrop

Doamnelor și domnilor,

Cunoștințele teoretice și cerințele practice în comerț și industrie sunt în continuă schimbare. Profesorii de la universități și profesorii de la colegiile profesionale trebuie să se adapteze în cursuri, seminarii și lecții cu privire la aceste provocări.

De aceea opiniile și evaluările dumneavoastră ne sunt foarte importante, deoarece vrem să introducem în universități și școli profesionale în programele școlare noi metodele de predare mai relevante pentru profesie. În acest scop efectuăm un studiu cu ajutorul antreprenorilor germani și români din diverse industrii. Scopul acestui studiu este de a obține o imagine de ansamblu sistematică a estimărilor antreprenorilor despre calitatea formării profesionale și universitare în Germania și România.

Unde are firma dumneavoastră sediul central?

.....

Vă rugăm să evaluați aptitudinile și competențele necesare pentru personalul cu studii academice pe o scală de la (se aplică în totalitate) la (nu se aplică deloc): vă rugăm să bifați.

Se aplică în totalitate	Indecis	Nu se aplică deloc
--------------------------------	----------------	---------------------------

Universitățile transmit competențele sociale și cele legate de munca în echipă necesare meseriei.			
Studenții/ele au nevoie în viața și meseria lor de cunoștințe teoretice aprofundate.			
Cele mai multe universități nu oferă cursuri și seminarii orientate spre parctică			
În universități este promovată învățarea independentă.			
În viața profesională a personalului cu studii academice învățarea independentă este mai importantă decât cunoștințele.			

Vă rugăm să evaluați aptitudinile și competențele necesare pentru muncitorii calificați pe o scală de la (se aplică în totalitate) la (nu se aplică deloc): vă rugăm să bifați.

	Se aplică în totalitate	Indecis	Nu se aplică deloc
Școlile profesionale transmit competențele sociale și cele legate de munca în echipă necesare meseriei.			
Muncitorii calificați au nevoie în viața și meseria lor de cunoștințe teoretice aprofundate.			
Cele mai multe școli profesionale nu oferă metode de predare orientate spre parctică, în colaborare cu companii de formare profesională.			
În școlile profesionale este promovată învățarea independentă.			

În viața profesională a muncitorilor calificați învățarea independentă este mai importantă decât cunoștințele.			
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Vă mulțumim pentru colaborare!

12.2 QUESTIONNAIRE FOR STUDENTS ON "SKILLS OF GRADUATES "

Prof. h.c. Dr. Dieter Grasedieck

den 20. Februar 2011

46244 Bottrop,
Oberstudiendirektor a. D.
Küferstraße: 3

Sehr geehrte Damen und Herren,

Die theoretischen Kenntnisse und die praktischen Anforderungen in der Wirtschaft verändern sich permanent. Professoren an Universitäten müssen sich in Vorlesungen, Seminaren und im Unterricht auf diese Herausforderungen einstellen.

Deshalb ist uns Ihre Meinung und Beurteilung als zukünftige Akademiker und Akademikerinnen sehr wichtig.

Beurteilen Sie bitte die notwendigen Fähigkeiten und Kompetenzen der Akademiker und Akademikerinnen auf einer Skala von 1 (Trifft voll zu) bis 3 (Trifft gar nicht zu). Kreuzen Sie bitte an.

	Trifft voll zu	Trifft zum Teil zu	Trifft gar nicht zu
Die Universitäten bereiten auf die notwendigen Team- und Sozialkompetenzen für den Beruf vor.			
Die Studenten/ innen benötigen in Ihrem Leben und im Beruf vertiefte Theoriekenntnisse.			
Praxisorientierte Seminare oder Vorlesungen werden von den meisten Universitäten nicht angeboten.			
Das selbstständige Lernen wird an			

Universitäten gefördert.			
Das selbstständige Lernen ist im Berufsleben eines Akademikers oder einer Akademikerin wichtiger als hervorragendes Fachwissen.			

Vielen Dank für Ihre Mitarbeit!

Prof. h.c. Dr. Dieter Grasedieck

February 20, 2011

Oberstudiendirektor a.D.

Küferstraße 3

46244 Bortrop

Dear Sir or Madame,

The theoretical and practical requirements in the economy are continuously changing. Professors at universities have to adapt their lectures, seminars, and other courses to this challenge.

That is why your views and opinion as future academics are very important to us.

Please evaluate the necessary skills and competencies of academic personnel on a scale from 1 (strongly agree) to 3 (strongly disagree). Please check-off the respective boxes.

	Strongly agree	Partially agree	Strongly disagree
Universities provide the team and social skills necessary for professional careers.			
Students need theoretical knowledge in both their professional and private life.			
Practically oriented seminars or lectures are not provided by most universities.			
Universities promote self-organized learning.			
The ability to learn in an autonomous fashion is more important for an			

academic than substantial knowledge.			
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Thank you very much for your cooperation!

12.3 OPEN QUESTIONNAIRE FOR ROMANIAN AND GERMAN STUDENTS FOR INTERVIEWS AND INTERNSHIP REPORTS

Offene Fragen: Antworten und Antwortkategorien

Frage 1: Halten Sie ein Praktikum während des Studiums für wichtig?

Frage 2: Begründen Sie ihre Antwort und nennen sie Vor- und Nachteile:

Frage 3: Können Sie einen Zusammenhang der Lernziele der Vorlesung oder der Seminare an ihrer Universität und den benötigten Kompetenzen in der Industrie feststellen?

Frage 4: Welche Fähigkeiten benötigen Sie in der praktischen Arbeit besonders?

Frage 5: Welches Fachgebiet und welche Lernziele wurden an der Universität nicht gelehrt?

Frage 6: Beschreiben Sie bitte Vorschläge zur Verbesserung des Praktikums.

Frage 7: Erläutern Sie bitte ihre Vorschläge zur Verbesserung der universitären Lehre.

Open questions: Answers and response categories

Question 1: Do you regard an internship during studying as important?

Question 2: Justify your answer and name the advantages and disadvantages:

Question 3: Can you see a connection between the learning objectives of the lectures or the seminars in your university and the competencies needed in the industry?

Question 4: What particular skills do you need when conducting practical work?

Question 5: Which special fields were not taught at the university?

Question 6: Please describe proposals for the improvement of internships.

Question 7: Please explain your proposals for the improvement of university teaching.

12.4 QUESTIONNAIRE TO DIRECTORS AND ENTREPRENEURS ON "NEED FOR INTERNSHIPS FOR STUDENTS IN THE INDUSTRY"

Prof. h.c. Dr. Dieter Grasedieck

den 20. Februar 2011

46244 Bottrop,
Oberstudiendirektor a. D.
Küferstraße: 3

Sehr geehrte Damen und Herren,

Die theoretischen Kenntnisse und praktischen Anforderungen im Handwerk und in der Industrie verändern sich permanent. Practical experience of the students could facilitate the entry into the profession.

Deshalb ist uns Ihre Meinung und Beurteilung sehr wichtig.

Beurteilen Sie bitte die notwendigen Fähigkeiten und Kompetenzen der Akademiker und Akademikerinnen auf einer Skala von 1 (Trifft voll zu) bis 3 (Trifft gar nicht zu). Kreuzen Sie bitte an.

	Trifft voll zu	Trifft zum Teil zu	Trifft gar nicht zu
Praxisorientierte Seminare oder Vorlesungen werden von den meisten Universitäten angeboten.			
Während des Studiums sind Praktika unbedingt erforderlich.			
Den hochmotivierten Praktikanten/innen würde ich nach Studienabschluss gerne Arbeitsplätze anbieten.			
Firmenbekannte Praktikanten erhalten einen höheren Einstiegslohn.			

Vielen Dank für Ihre Mitarbeit!

Prof. h.c. Dr. Dieter Grasedieck

February 20, 2011

Oberstudiendirektor a.D.

Küferstraße 3

46244 Bortrop

Dear Sir or Madame,

The theoretical and practical requirements of trade businesses and industry are continuously changing.

That is why your views and opinion as future academics are very important to us.

Please evaluate the necessary skills and competencies of academic personnel on a scale from 1 (strongly agree) to 3 (strongly disagree). Please check-off the respective boxes.

	Strongly agree	Partially agree	Strongly disagree
Practically oriented seminars or lectures are provided by most universities.			
Internships during study are absolutely necessary.			
I would gladly give jobs to highly motivated interns after their degree.			
Interns already known by the company get a higher entry salary.			

Thank you very much for your cooperation

