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Magdalena Łuczak-Trąpczyńska
Poznan University of Economics
trapczynska.magdalena@gmail.com
Piotr Trąpczyński
Poznan University of Economics
piotr.trapczynski@ue.poznan.pl
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Fostering a Multi-Level Approach to Entrepreneurial Pedagogy: The German Experience

ABSTRACT

RESEARCH OBJECTIVE: The aim of this paper is to analyse the case of entrepreneurial pedagogy in Germany at the level of primary and secondary education and to identify good practices in the development of entrepreneurship skills of pupils.

THE RESEARCH PROBLEM AND METHODS: The paper uses a systematic review of literature with relation to entrepreneurial education, as well as the German literature of the topic, in order to descend to the analysis of secondary data related to the German education system and its usage of entrepreneurial pedagogy.

THE PROCESS OF ARGUMENTATION: In the first part, the paper clarifies the notion of entrepreneurial pedagogy and introduces modern didactic approaches, particularly process-oriented teaching. Subsequently, the German case is used to analyse how entrepreneurial pedagogy can be implemented at different interrelated levels. In the recommendation section, the success factors of the implementation of such an approach are discussed. The paper ends with some concluding remarks.

RESEARCH RESULTS: The analysis of entrepreneurial pedagogy in German literature and practice highlights the relevance of an interplay of solutions at different levels: the level of the state (or, in the case of decentralised educational systems like the German one, at the regional level), the level of school initiative, as well as the individual level of educators who are in charge of implementing entrepreneurial teaching methods.

CONCLUSIONS, INNOVATIONS AND RECOMMENDATIONS: According to the concept of process-oriented didactics presented in this paper, the aspect of making mistakes is an important engine of learning, as well as teaching itself. However, it can be observed in Germany that in teaching reality more

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attention is devoted to the errors themselves than to the tolerance of errors, according to the principle that the teacher does not commit mistakes. Hence, this issue should be raised in appropriate teacher training. The German experience can be a starting point for discussion related to other countries, as well.

→ **KEYWORDS:** **ENTREPRENEURIAL PEDAGOGY, ENTREPRENEURIAL EDUCATION, GERMANY**

Introduction

Entrepreneurial education is perceived as one of the most important challenges of modern educational systems and socio-economic development (Marques & Albuquerque, 2012; Tasnim & Yahya, 2013). In fact, education, and particularly entrepreneurship teaching and entrepreneurial education shape the attitude of the young generation towards entrepreneurship, especially attitudes and entrepreneurial intentions (Wach, 2013; 2015; Moreno & Wach, 2014). Although entrepreneurial education in the world literature of entrepreneurship is currently at the peak of its popularity, in Poland it is still a rising topic, even if it is increasingly being taken up by researchers from various research institutions, related and unrelated to economics. In the last decade of the twentieth century, there was debate in the literature of the subject whether entrepreneurship can be learned (Wach, 2016a; 2016b). Entrepreneurial attitudes and intentions, innovativeness, creativity and initiative are the main attributes desired by the labour market, thus university education should shape its programs so as to equip its graduates not only with the relevant expertise and skills, but also the desirable entrepreneurial attitudes (Wach, 2014a; 2014b). In this spirit, entrepreneurship education is much broader than business or economics education.

However, while attention has traditionally been paid to the importance of academic education in shaping an entrepreneurial approach (Kwieciński & Młodzińska-Granek, 2014; Wach 2002; 2016b), the possibilities and limits of implementing entrepreneurial pedagogy at the level of school education are being discussed to a lesser extent. If the possibility to learn entrepreneurial attitudes is limited, because there is still considerable uncertainty as to whether individuals are born entrepreneurs or become entrepreneurs (Henry, Hill, & Leitch, 2005), then it seems reasonable to develop entrepreneurial attitudes as early as possible.

The aim of this paper is to analyse the case of entrepreneurial pedagogy in Germany at the level of primary and secondary education and to identify good practices in the development of entrepreneurship skills of pupils. The choice of this education system is due to the following conditions. In December 2016 the Organisation for Economic Co-operation and Development (OECD) published its highly anticipated PISA report for 2015, comparing the aptitudes of around 540,000 15-year-olds from 72 different countries in the fields of science, reading and mathematics. According to its findings, Germany is among the top ten European countries in a survey of student performance, but still shows larger than average achievement gaps in certain areas (OECD, 2016). Thus, the German example can not only be a source of good practices for the development of entrepreneurial abilities but also the imperfections of this system and possible approaches to dealing with them.

The paper is structured as follows. In the first part, it clarifies the notion of entrepreneurial pedagogy and introduces modern didactic approaches, particularly process-oriented teaching. Subsequently, the German case is used to analyse how entrepreneurial pedagogy can be implemented at different interrelated levels. In the recommendation section, the success factors of the implementation of such an approach are discussed. The paper ends with some concluding remarks.

Conceptual background

The reasons for the interest of researchers, especially economists, in the field of entrepreneurship education seem obvious. Entrepreneurship is recognised as one of the important factors influencing the socio-economic development processes (Daszkiewicz, 2014; Wach 2016b). The aim of the education system, implemented at all levels of education, including the academic level (Urbaniec, 2014), should be primarily the formation of entrepreneurial attitudes among the youth and students (Wach 2016b; Wach & Wojciechowski, 2016; Wach, 2013), determining their full and satisfactory participation in socio-economic life (Wach 2015; Rachwał & Wach, 2016). The departure from the dominance of large enterprises in the economy, and thus the perception of the economic phenomenon of small and medium-sized enterprises, has resulted in changes in the processes of internationalization of enterprises and the globalization of the world economy, and has also highlighted entrepreneurship as a key factor in economic development (see Figure 1). Further economic development now requires a paradigm shift and the establishment of a business

economy, which in turn requires appropriate entrepreneurial education (Othman & Nasrudin, 2016).

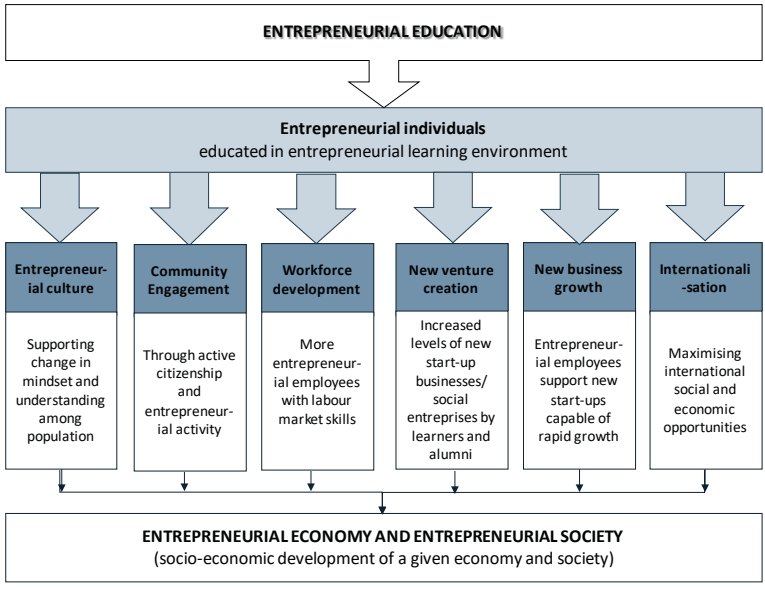

Figure 1. The impact of entrepreneurial education on socio-economic development.
Source: adapted from Wach, 2016b, p. 17.

Entrepreneurial pedagogy (*or entrepreneurship pedagogy*) deals with teaching methods that encourage the formation of entrepreneurial attitudes (Wach, 2014a) (see Figure 2). Unlike the conventional approach to learning that involves learning from the teacher, this approach assumes learning from one another, so the role of the learner is no longer passive, being replaced with learning by doing. Unlike learning from the written sources by reading, this approach involves learning through debate and personal exchange of information. Instead of learning as instructed by the teacher as a focal expert, the entrepreneurial approach to learning takes place through self-discovery through the use of teacher advice. Similarly, instead of learning in a well-structured environment using a fixed schedule, developing entrepreneurial skills should foster learning in a flexible, informal environment (Gibb, 1993).

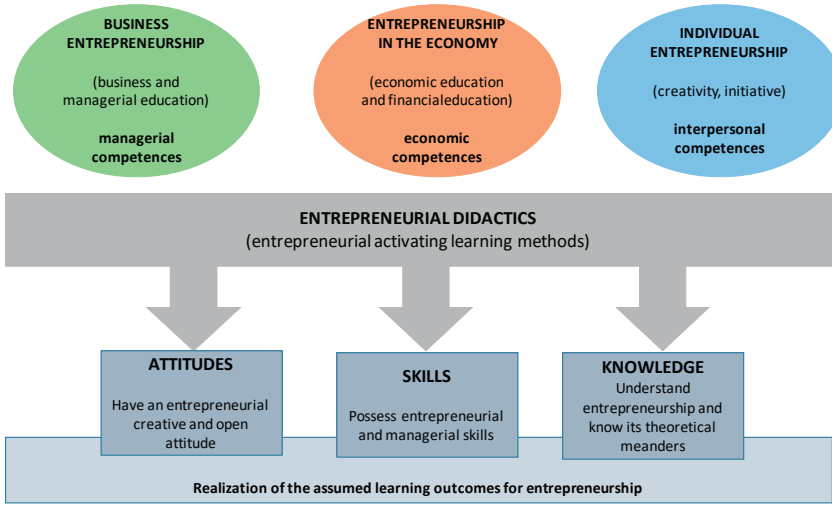

Figure 2. Conceptualisation of entrepreneurial pedagogy.
Source: adapted from Wach, 2016a, p. 17

While traditional theories of instructional design were mostly based on the knowledge-transmission model, today many such theories find their inspiration in the knowledge-construction model (Vermunt & Verschaffel, 2000). One reason for this change is epistemological in nature: research results have made it clear that the quality of knowledge gained by active knowledge construction is more accessible and usable than knowledge acquired by the passive intake of knowledge. Hence, in recent years there have been several scholars raising the importance of process-oriented approaches to teaching (Abdous, 2011; Brown, 2010; Chen, Chen, & Chen, 2014; Vacek, 2011). Mutual appreciation between teachers and learners and a good teacher-pupil relationship are the foundations of process-oriented didactics (Apelojg, 2016).

Every teacher, and every learner, possesses special characteristics which make him or her an important part of the class community. Process-oriented didactics are centred around the pupils' learning process with regard to learning objectives which have been defined together. Process-oriented didactics welcome learning resistance and try to transform it into development processes in cooperation with the learners. In the context of process-oriented didactics, learners are clearly aware that making mistakes is part of the learning process. The pupils are highly responsible for the achievement of their individual objectives (overcoming challenges). Process-oriented teachers consider themselves to be

learning guides and therefore try to develop their own concept of teaching and learning continuously, cooperatively, and reflectively. Focusing on the learning process involves constantly questioning teachers' and learners' progress and recognising new development objectives. Process-oriented didactics provide plenty of space for both teachers and pupils to practice, in order to attain individual learning objectives.

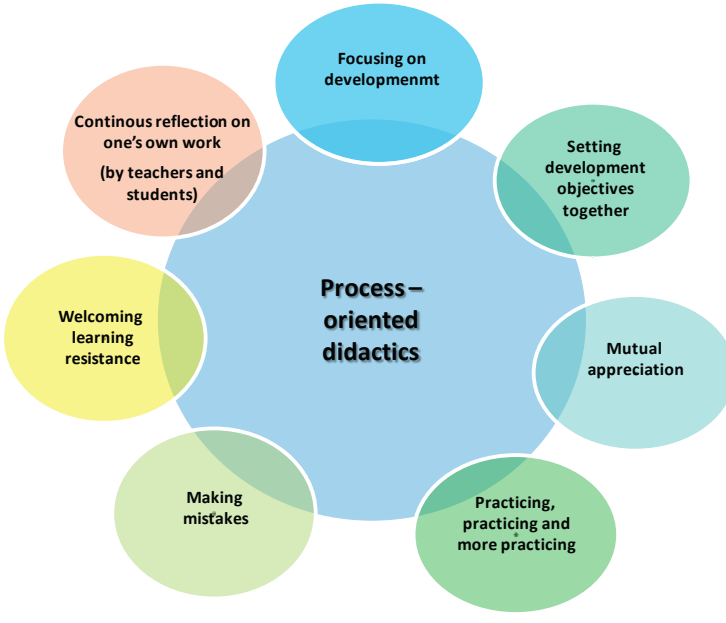

Figure 3. Elements of process-oriented didactics.
Source: Apelojg, 2016, p. 2.

It can be assumed that there are three fundamental, interrelated forms of learning, which are experience (conscious and unconscious experience), imitation and trial and error (Apelojg, 2016). These three fundamental learning modes provide relevant indications as to the learning process. Firstly, teachers and learners, apart from their conscious experiences, also have a lot of unconscious learning experiences. Secondly, the role of negative learning experiences should be addressed seriously. Thirdly, it should borne in mind that learners need to experience success to be rightly motivated for learning.

Case study: Entrepreneurial pedagogy in Germany

Context of the German educational system

The German primary and secondary education system consists of four major areas of study: the elementary area, the first area, the first phase of the second area, and the second phase of the second area (European Commission, 2016). Each of these areas encompasses different types of schools, which vary greatly across the Federal States (*Bundesländer*). The Conference of the Ministries of Education of the Federal States sets the guidelines and standards of education, but the Laws on Education differ between the 16 Federal States, which results in 16, sometimes very divergent, education systems. Schools generally have autonomy in shaping and implementing their curricula in which they define their particular focus (Deutscher Bildungsserver, 2017).

The education ministries develop guidelines for education policy, science and the arts, issues legal and administrative regulations, communicate with the highest federal authorities and control the lower authorities, subordinate corporations, institutions and foundations. To assist ministries, the Federal States have established their own institutes for higher education, education and vocational training.

It should also be added that responsibility for the creation of a directory of further training courses also rests with the ministries of education of the Federal States. Through a network of vocational counselors who attend classroom activities in schools and discusses with teachers about the needs of education, teachers have an indirect impact on the development of catalogs of further education courses.

First level: solutions of Federal States and national organisations

Programs supporting youth in their ability to develop new ideas involve a number of activities. Firstly, in the course of literature research, competitions fostering entrepreneurship and business start-ups were identified. The “Youth Creates a Company” program fosters innovation, responsibility and entrepreneurial thinking in tenth graders who have not started university education and not completed their vocational education. Alone or in teams of six students they are given the opportunity to virtually create a company. Similarly, the German company founders contest is targeted at student teams that have come up with new sales strategies, financial

plans, marketing tactics, or product innovations. Likewise, the State of Baden-Württemberg promotes a “Creative and Competent” program, which financially supports the implementation of projects in collaboration with other institutions, such as businesses, trade unions, social organizations, universities, chambers of commerce, religious communities and the arts community. In Bavaria, there is a JUNIOR program supporting entrepreneurship in schools in Bavaria. Within the program, students set up their own venture with a one-year limited time. During this time, the students take responsibility for the success of their company, which is similar to real-life business (Bayerisches Staatsministerium, 2017b).

Similarly, the Rock it Biz Foundation supports the creation of companies by students in dedicated projects where participants need to develop an idea for a business, gain funding, create a product, and think about ways to market it. As a result, young people discover their predispositions and interests in teamwork, by meeting real entrepreneurs. The ifex initiative of the Ministry of Finance and Economy of Baden-Württemberg, in cooperation with the local Ministry of Education, plays a similar role. The purpose of these school-oriented activities is to promote entrepreneurship among students and to identify them as alternatives to other professional pathways. Likewise, since 2012 there is a program of JUNIOR student companies aimed at secondary school pupils. Within the program students run an own company throughout the year, whereby they must define milestones, such as the idea, business concept, establishment, share capital, or sales of their actual products.

Apart from initiatives ensuring a realistic experience, entrepreneurial skills are also developed in more simulated conditions. One of such programs implemented in schools in Bavaria is the responsible running of the bank by student teams under the aegis of the Federal Association of German Banks (Bayerisches Staatsministerium, 2017c). Similarly, a business game contest entitled “Play the Market” is targeted at 10th grade students who can use their prior knowledge to run a virtual enterprise in triple teams. They must reconcile decisions in areas such as sales, staffing, finance, or procurement planning. Participating teams are divided into different markets and directly compete with other companies in their respective markets.

On top of explicit contests supporting business formation, there are prizes to support independent thinking, such as the Klaus Hildebrand Prize in Bavaria, in the field of brilliant work in the areas of economics and finance in secondary schools in the year 2016/17 (Bayerisches Staatsministerium, 2017d). Another example is the KISSIS project, organised since 2007 by the Wissensfabrik organisation for pupils of all

Federal States. As part of the project, classes take place in companies, allowing students to confront their acquired knowledge with processes that actually take place in business practice, exploring the various areas of business and their interrelationships that together form the whole for the achievement of specific objectives (Bayerisches Staatsministerium, 2017e).

The decisiveness of pupils is further encouraged by initiatives at the interface between business practice and schools. For example, business@school, an initiative of the Boston Consulting Group, where students' teams conduct analytically large businesses from a business analytics perspective and then move to small and medium sized businesses. With this basic understanding of business models, listeners make decisions about shaping their own business plan and present their business ideas to a broader audience.

Second level: solutions of educational institutions

Within the initiative of primary and secondary schools of different types, a number of activities can be identified. In a number of German schools, pupil firms are run with functions such as personnel management or capital management (investments, loans, dividends, etc.). Moreover, there is a growing trend of cooperation between schools and business. This can take the form of pupil internships, including foreign experience. For instance, pupils at the boarding school at Schloss Hansenberg are preparing for several weeks of foreign practice. The partner company Linde, as well as other companies, support the implementation of four weeks internship within and outside Europe (Ruah, 2017). Another example are specific problem-oriented projects in partnership with companies, such as the cooperation of secondary school students in Baden-Württemberg, who had to face the question of whether the Margarete Steiff company should invest in China (Lehrerinnen for bildung Baden-Württemberg, 2017). Moreover, cooperation with business may also play the role of professional orientation of pupils, such as in St. Jakobus Gymnasium in Abtsgmünd, where local business partners remain in constant contact with the school to develop the entrepreneurial spirit of pupils and also draw attention to the relevance of responsibility and values in doing business (St. Jakobus Gymnasium, 2017).

Another category of activities promoting the risk-taking attitudes of youth are extracurricular activities. For instance, in the school centre Wilhelm-Raabe-Schulzentrum Eschershausen (Niedersachsen) since

October 2015, students of the school had been working every Wednesday on the construction of a new wooden building. During the construction, the students not only did technical work but also carried out planning activities in a careful manner. As part of their work, they were responsible for preparing sketches for wall and roof construction. At the same time, they had to determine the quantities and costs of the materials needed to carry out the project (Haupt- und Realschu, 2017a). In a similar vein, interest groups have traditionally played an important role in developing the passion and initiative of pupils in Germany (Gerhart-Hauptmann-Schule, 2016).

Further, an essential determinant of independent thinking of pupils in Germany is the design of timetables and learning activities. For instance, since 2000 the Thomas-Mann-Grundschule (Berlin) primary school has introduced an internal list of competences for the development of pupils of an autonomous learning ability. For example, the goal at the end of the fourth grade is to define the sequence of tasks on a pupil's own weekly schedule. Students themselves choose their own tasks for self-development, thus shaping the ability to independently think and plan their own resources (Czerwanski & Solzbacher, 2004). Also, the so called Jenaplan approach is gaining popularity in Germany, whereby pupils at different age work in project teams, jointly solving problems, learning from mistakes and supporting each other (Czerwanski & Solzbacher, 2004). Project work is increasingly raising attention of German educators as a means of developing the autonomy of pupils. In a vocational school in Tübingen, pupils learn to show initiative and fulfil self-defined objectives, while understanding that the realisation of objectives may require deviations from the original plan (Gewerbliche Schule Tübingen, 2017). Once in three years, the pupils of the Raphael-Schule in Recklinghausen participate in a project week regardless of their usual allocation to specific classes, whereby they prepare contributions to pre-defined key topics of the week by recurring to means of communication, such as role play, songs or movies. Likewise, once in two years there is a project week in the primary school Boy Lornsen Grundschule Brunsbüttel, whereby pupils not only have to meet a tight deadline to present an interdisciplinary contribution, but also present the findings to the parents and the local community (Raphael-Schule, 2017).

Finally, an essential role of schools is increasingly related to supporting pupils in their professional orientation. For instance, in the school centre Wilhelm-Raabe-Schulzentrum Eschershausen (Saxony) within the module "work-economy-technology" pupils prepare themselves for the challenges of the job market and realise the need for further training

after graduation. They can perform an assessment of own strengths and weaknesses and benefit from job advisory at school, in order to follow a more profiled program of education in the ninth and tenth grade. What is important, if the desired specialisation reaches beyond the offering of the school, pupils can attend classes in partner schools, e.g. more technical or professional ones (Haupt- und Realschu, 2017b). Another peculiar example is provided by workshops organised in classes 10-11 of the school Ludwig-Bölkow-Schule with focus on the necessity to manage and evade debts as an important determinant of consumption and investment behavior (Eckhardt, 2017).

Third level: solutions in teaching reality

Finally, at the very level of educational practice, there is a growing trend in Germany to recur to the free form of teaching, whereby students themselves define their learning goals, which they want to achieve in their own work and with a great deal of freedom. The learner is responsible for the choice of forms of work and content, as well as the planning of various activities. In this approach, the teacher is merely a companion and counselor, hence the typical school hierarchy is blurred. All classes should address the interests and abilities of the learner, as another purpose of free learning is independent learning and support of social relationships (Methodenpool Uni-Koeln, 2017a).

Thus, in a way, learning itself can be regarded as an entrepreneurial process. In fact, the concept of open learning implies an alternation between the student's own work, regular weekly work, or project work (Müller, 2006). The use of a multitude of parallel methods is a feature of an open-minded approach to learning, making students accustomed with different ways of solving problems. The problem-oriented approach assumes that learners and learners collectively define the starting point for further analysis. Since the question comes from the learner, they must also work out ways of solving the problem (e.g. laboratory methods in the natural sciences) (Spörhase-Eichmann, 2004).

Choosing the right cognitive structures for understanding complex contents is an important skill that is not a common practice in schools worldwide, but there are examples of practices that favour this type of skills. These include the so called cognitive apprenticeship, which seeks to educate students on the benefits of learning through practical examples, also even for the sake of gaining theoretical background. In this approach, derived from constructivist didactics, competing student teams

learn, for example, the importance of serial production for specific "products" (e.g. cardboard houses), to produce as many chalets as possible. The teams themselves had to work out a "production" methodology, covering the various steps, their sequence and their linkages (Methodenpool Uni-Koeln, 2017b).

As a part of the increasingly frequent project work, pupils work in a goal-oriented manner, and therefore focus on the intended results. Hence, they become directly responsible for actions undertaken in the project (Bauer, 2003). In order to bring pupils closer to the challenges of human management and leadership, it is also a common practice to learn by teaching, whereby pupils take on the role of teachers who are tasked in explaining the content they have learned so far to their peers. The teacher in this process is merely an observer who does not intervene unless it is necessary (Martin, 2010). Likewise, another method motivating pupils to take the responsibility are assignments of well-defined functions for pupils who may represent the interests of the classes in front of the pedagogical board or the school leadership (e.g. "ministers" for specific areas like computer equipment) (Schulgesetz Berlin, 2017).

Finally, an innovative teaching method that is gaining popularity in German schools, just as it has been popular at universities, is didactic simulations, especially business games. An example of such simulations is provided by a three-day municipal policy simulation developed by the Friedrich-Ebert-Stiftung Foundation and implemented within a hybrid design combining the simulation itself and project team work at a vocational school of economics in Nuremberg, involving two banking classes with 48 pupils (Kührt, 2011).

Recommendations

The analysis of entrepreneurial pedagogy in German literature and practice highlights the relevance of an interplay of solutions at different levels: the level of the state (or, in the case of decentralised educational systems like the German one, at the regional level), the level of school initiative, as well as the individual level of educators who are in charge of implementing entrepreneurial teaching methods.

A part of teacher education in Germany is focused on the ability to develop the quality of school teaching, which implies indirectly the need to improve teaching methods. Within internships preparing teachers for their job, one can often find modules dedicated to didactic innovation that encourage young teachers to develop their own competencies and their application

even during their pre-occupational training. This includes, among others, media education that is designed to allow the use of innovative work methods in school curricula. Education and media education is increasingly becoming an integral part of the various compulsory courses in pedagogical studies and preparatory practice. As in the German case, tooling support for the development of problem-solving methods in the educational sector should be offered to schools by universities (especially pedagogical faculties and departments) and institutions under the auspices of the ministry of education. It is, however, a separate matter to translate individual initiatives and curricula formulated at the level of education ministry into teaching methods actually found in schools. Problem solving is an integral part of most curricula, however its implementation practice is very diverse, as even the German case demonstrates. In addition to encouraging schools to diversify their methods of evaluation, the role of the state and its underlying institutions is to create opportunities, especially for active learners, to develop knowledge transfer capacities.

In the year 2015, the Aris Opinion Research Institute conducted a survey of 500 teachers at the Learntec fair in Karlsruhe. According to research, 81% of teachers use the Internet as part of their classes, as well as use computer equipment and mobile devices, especially in post-primary education. According to the MMB Media Research Institute, teachers continue to use the Internet, however, mainly just to prepare their classes (Dreier, 2012). This fact draws attention to the necessity of teacher training in the field of using innovative teaching methods also in classroom practice.

Examples of initiatives to increase the availability of digital content in German education are the “Netzwerk Digitale Bildung” initiative, where schools can arrange so-called Smart Collaborative Classrooms and try out digital activities in practice. Teachers receive the necessary digital tools along with interactive hardware and software that enable them to implement new didactic approaches in their classes. Intelligent boards and intelligent document cameras, which integrate digital and analog content, are particularly important in this respect. Under the program teachers are also trained in technical and didactic aspects. Teachers working with new media can get help in planning their activities from the National Media Center Baden-Württemberg under the MEP-Online program, which includes direct counseling, implementation assistance, materials and a specific media development plan. Direct help is based on a network of school counselors and media advisers. The Bavarian Radio also organises workshop days and discussions related to the use of the media in school activities.

The relevance of preparing teachers for the challenges of entrepreneurial pedagogy is also relevant due to the fact that the mental frames of

teachers can hinder the realisation of the assumptions behind the various methods discussed in the preceding sections. In fact, in both individual and group work, students cannot always think linearly, in the sense of a sequence of steps described in a given pattern, because in fact the entrepreneurial process does not follow a textbook recipe. Meanwhile, in most German schools the results-oriented approach still clearly prevails, both at the level of teaching methods and the methods of evaluation, which does not support perseverance and ingenuity in overcoming difficulties, which should be inherent to an entrepreneurial orientation. Through continuous problem-solving exercises, pupils must face new challenges, but the role of the teacher is essentially to develop the pupils' internal motivation for learning, because it enables patience in overcoming difficulties. As a weakness of the German education system, and at the same time as a starting point for constructive discussions in the future, one can point out the excessive concentration of both teachers and pupils on accomplishing a given task and reaching a solution considered as the benchmark. This limits the usage of creative methods, such as brainstorming or open work by pupils, as teachers are overly attached to explain the golden ways of solving particular problems, which they had mastered themselves.

Another important aspect pertains to the activation of pupils at the school system level and encouraging them to take the initiative, which is a relatively valued and important aspect in Germany. For example, in Bavaria there is a conference of school pupils from non-urban areas, whose spokesmen and their deputies meet to formulate their problems and seek common solutions. As a result of the present research, it can be said that creative methods of working in schools using metaphors and increasing pupils' awareness should be increasingly practiced by teachers. The development of pupils' orientation for the future can be further facilitated by transnational practical experience exchange programs, such as Comenius projects. By participating in such projects, students can acquire practical skills that enhance their chances in the labour market. Curiosity and exploration of new opportunities stem from discovering new contexts and challenges, hence international programs that provide a wide network of contacts and international exchange opportunities are a particularly important tool in this field.

Conclusion

In the course of the conducted literature review and analysis of the German educational system, it can be stated that there is a growing trend

in Germany to recur to the free form of teaching, whereby students themselves define their learning goals, which they want to achieve in their own work and with a great deal of freedom, which supports the development of their entrepreneurial approach. It can be observed that instruments fostering the entrepreneurial approach already at the level of primary and secondary education exist at the level of the state and its guidelines and programs, the level of educational institutions which take the responsibility of ensuring educational quality, as well as individual educators themselves who ensure the diffusion of recent didactic approaches to the classroom. However, in relation to the latter, curiosity is still not unanimously perceived as an important trait of the teacher himself, as the students' questions disturb the rhythm of the class and answering more questions takes time and diverts the flow from the pre-defined content. In order to practice a truly entrepreneurial philosophy of teaching, teachers should adopt methods that encourage students to take a fresh and open approach to framing phenomena and solving problems.

According to the concept of process-oriented didactics presented in this paper, the aspect of making mistakes is an important engine of learning, as well as teaching itself. However, it can be observed in Germany that in teaching reality more attention is devoted to the errors themselves than to the tolerance of errors, according to the principle that the teacher does not commit mistakes. Hence, this issue should be raised in appropriate teacher training. Some teacher training courses teach the ability to make decisions in complex situations, but this topic is not predominant in the studies that prepare teachers for their role. However, this skill is associated with the ability to independently think and solve problems that teachers themselves need to pass on to the pupils.

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