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Using Innovative Teaching Methods to Promote Sustainable Development among Students of Economics and Management

Abstract. The article discusses main challenges in teaching adults and focuses on selected educational methods viewed as paths for effective learning. We review results of numerous studies conducted by different authors aimed at examining students' educational preferences, needs and expectations. The main objective of the article is to analyse selected methods that can be used in academic settings, such as world café, design thinking, micro-learning or games, and describe ways of applying them in education for sustainable development in faculties of economics and management.

Keywords: education for sustainable development (ESD), students, teaching methods

1. Introduction

Education for sustainable development is a particularly sensitive area of teaching work. Both the issues taught and the attitude of teachers are often critically evaluated by students. The area of environmental problems and sustainable development frequently become the subject of public (unjustified) criticism, the space for the promotion of pseudoscientific facts, false beliefs, demagogical opinions or the area of political battle [Czaja & Becla 2011; Lippert 2010; Hickel 2015; Janczura 2017]. In practice, it also has a significant impact on people's convictions and attitudes. It relates to the purchasing decisions people make, the habits they

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have and the preferences they declare. The implementation of the teaching process is thus of key importance. Teaching should be based on facts and evidence, which are at the same time referred to everyday life. The aim of education for sustainable development is not only to pass the information [Bernaciak 2016: 36]. It is laborious teaching practice, which should persuade students to modify their attitude. This goal may be accomplished thanks to the presence of a few key factors. They include: teachers' high competence (both professional and methodological), communication, interpersonal and organisational skills, and the awareness of students' needs and expectations as regards the teaching process. Each of these spheres is the subject of interest of different fields, in which a number of proposals are put forward and tools to support teaching are offered.

The aim of this paper is not only to prepare the key methodological accomplishments in the field of teaching adults, but also to discuss the examples of selected teaching methods and their practical application in education for sustainable development. In the first part of the article, we thus undertake to indicate a few areas that influence the academic teacher's work and which pose specific challenges for this profession. The next part is a kind of a repository including the descriptions of teaching methods based on students' activity. They constitute the answer to the question what methods of working with students will address challenges for the academic teacher in the best possible way. The third part discusses case studies which illustrate good practice when it comes to the application of the described methods in education for sustainable development.

2. Main challenges in the field of teaching adults

In 2009, Professor T. Baumann conducted a survey among academic teachers of the University of Gdansk focusing on their needs as regards teaching skills [Baumann 2011]. Although the author does not find its results to be representative, it may be an inspiration for some reflection. The answers supplied by the respondents (academic teachers with the Master's degree and PhD degree of the University of Gdansk) indicate the lack of awareness how complex the job of an academic teacher is. The research shows that faculty members do not fully realise how complicated the profession of a university lecturer is.

Given the above in mind, a list of areas that are particularly important for building skills needed to teach students has been drawn up, together with their key premises, challenges related to them and the tools they offer. These areas include: andragogy, teaching methodology, students' attitudes, students' preferences, interpersonal competence, neuroscience, educational models, teaching

competence and the labour market. The above list is only a set of elements that are not arranged in a hierarchy. It is also an open list, which may constitute a starting point for further deliberations and research.

As far as andragogy is concerned, Malcolm Knowles observed that one needs to remain vigilant when thinking about adult education. Knowles indicates the difference between the goals that autonomous individual learners set themselves and the goals that an educational institution formulates for them [Knowles, Holton& Swanson 2005: 172]. Outlining new prospects in andragogy, Knowles discusses people's right to search for solutions to the problems they face [Knowles et al. 2005: 173]. Translating it into the language of the academic teacher's everyday work, one should pay attention to the fact that a teacher can make a professional mistake of perceiving students as a homogenous community pursuing the single goal of achieving educational targets established by a university. The academic teacher faces a challenge of confronting a heterogeneous group of learners only a part of whom are deeply interested in the subjects they study and perceive them as a resource desired in life.

Another area, concerning the methodology of teaching, is described by T. Bauman, who "reproaches" academic teachers for understanding and conducting university classes as the unidirectional transfer of logically structured portions of information.[1] What could be an alternative proposal to this way of preparing and teaching classes is a set of the following questions: "what will I teach?," "why will I teach this?," "how will I teach this?," and "how will I know that I succeeded?". Thanks to these questions, academic teachers could develop a habit of reflecting on the nature of their work. What poses the biggest challenge first for institutions employing university teachers is to establish a creative environment that would make it possible to work through the above questions and design classes in accordance with the resulting inspiration.

The area of students' attitudes, in turn, refers to their revealed preferences and their motivation to gain education[2]. The findings of M. Nowak-Paralusz's research show that among factors that motivate students to learn are: the desire to obtain a university diploma, discovering one's life path, fulfilling one's ambitions, and searching for tools that will be useful in one's professional work.[3] Depending on the age group, students' motivation was as follows: the younger the respondent, the lower the awareness of how the studies they have undertaken will prove to be useful in future; the older the respondent, the more aware they are of their own

[1] A speech at the scientific-methodological conference at WSB University in Torun held on 29-30 September 2016, entitled *An Achilles' heel of academic teachers*.

[2] In addition, the motivation to study is not the same motivation for learning a particular subject or attitude, the same attitude is not limited to the motivation. See: Gorard, See and Davies [2012].

[3] A speech at the scientific-methodological conference at WSB University in Torun held on 29-30 September 2016.

development goals. The academic teacher faces a challenge of taking into consideration the variety of reasons, among which the desire to obtain knowledge provided by a lecturer is not even formulated by the surveyed students themselves. Students at the age of 41 and older emphasise factors such as self-development, ambition and prestige, while younger students (below 25 years of age) perceive studies as the opportunity to find direction in life.

As far as students' preferences are concerned, the abovementioned T. Bauman's research indicates what methods are especially preferred by learners [Bauman 2011: 140]. What they find particularly useful and interesting is work in small groups, trying to solve a problem or accomplish a task they have been given. In the surveys prepared by the researcher, they also marked moderated forum discussions, discussions in small groups and individual work. What students perceived as the least interesting teaching method was the presentation of the subject by a lecturer, although they accepted this form as well. The academic teacher must thus make use of the advantages of all methods in order to achieve particular purposes.

Another area, which refers to interpersonal skills, is connected with the challenge of perceiving the teaching process as a specific human relation. The ability to develop this relation is mentioned by M. Spitzer, who does not indicate any particular skills though, but compares the so-called good teacher (we assume that this also refers to the academic one) to one's beauty, which everyone sees and appreciates, but finds it difficult to define it [Spitzer 2007: 258]. It was the circle of coaches, such as A. Niemczyk [Niemczyk 2012], and psychologists, among others F.S. von Thun [1981], who took an effort to identify and develop interpersonal skills crucial for the job of a teacher of adults. The academic teacher must be aware of the importance of interpersonal relations and of the personal models of designing them and one's educational needs in this respect.

As regards the field of neuroscience, we should mention the issue of attention as defined by D. Goleman [2013].[4] It refers to the concept of the default mode, which is characteristic of the human brain, described by Goleman as an "autopilot". It is contrasted with the intentional thinking, which requires, as the title of his book says, "focus" (concentrating on a given stimulus). Goleman believes that the ability to concentrate is crucial to understand, remember and recognise one's own emotional state and to develop relations. The thesis of concentration as the key to learning is confirmed by the experiments described by Spitzer [Spitzer 2007: 111 ff.]. Spitzer's deliberations allow us to conclude that what is the essence of effective teaching – learning is the environment which stimulates the appropriate areas of the brain to act, which ensures better memorising (learning).

[4] In this study were presented deliberately chosen clipping area of neuroscience, from which a whole range of issues leading researchers eg. Koch [2004] or Kahneman [2013] describe.

Academic teachers should thus give up verbal presentation, which is a relatively easy form of teaching, and activate students, providing them with the opportunity to focus on selected goals through guided action.

Another area is the field of educational models. The personalised education model as pursued by the universities of Oxford and Cambridge [Czekierda, Fingas & Szala 2015: 255] is also followed in Central and Eastern Europe, including Poland. Collegium Wratislaviense is the centre for training tutors and promotes the idea of tutoring in Polish education (including academic education) [Czekierda et al. 2015: 224]. Coaching, which seeks its pillars in various spheres of science [Rock & Page, 2009], or mentoring, which dates back to ancient times and is very well known in the world of business, are also present in the academic environment (project "Game for the Best" implemented at WSB University in Poznan). Each of these models, based on the conviction that participants of the educational process should be treated individually, requires a range of specific competences (knowledge, skills and behaviours). Academic teachers face the challenge of obtaining awareness of how many different forms of the educational process there are – and thus – how important it is to revise one's own teaching competence in the light of this diversity.

The next area refers to teachers' didactic competence. Bauman points out that competence gaps in the academic teacher's skills are an Achilles' heel of the whole higher education in Poland. Analysing the results of her research, she depicts the profile of a lecturer, who – when it comes to his or her own professional competence – is dangerously inclined to cognitive optimism, which is undesired in academic circles. It means that, being unaware of their own incompetence, academic teachers rank themselves highly or very highly as professionals [Bauman 2011: 28]. This conclusion helps us to identify another challenge for academic teachers: a call for humbleness regarding their didactic knowledge, a desire to establish its level and motivation for formal self-development.

The last area relates to students' activity undertaken after completing the educational process (or increasingly often during its course). This area is related to the labour market. This is where the needs and skills of graduates prepared by teachers in the teaching process (demand side) clash with the needs and offer of employers (supply side). On 23 April 2012, "Gazeta Wyborcza," a Polish newspaper, published the open letter of the then chairman of the insurance company PZU, Andrzej Klesyk, in which he criticised university graduates' inability to think independently [Klesyk 2012]. This opinion is shared by other employers, who expect Polish universities to train professionals that will have specific competences needed in the labour market. According to the unofficial report of Wavin Poland, businesses seek capabilities such as the ability to present data in an interesting way (storytelling), the selection and maintenance of communication channels, IT skills, prioritising, task management, critical thinking and problem

solving.[5] Therefore, academic teachers should be aware of these expectations and should design their classes in a way that would allow students to practise skills sought in the labour market as often as possible. Given the above considerations, we may conclude that inadequate teaching skills might make it difficult or even impossible to select the right teaching methods.

3. Selected teaching methods as the components of the effective didactic process

The determinants of the academic teacher's work addressed in the first part of the paper provoke reflection on what methods of working with students will match the needs of adult learners and at the same time meet the challenges of the outside world. Therefore, we purposefully selected the teaching methods that are briefly discussed below. What they all have in common is the fact that they allow learners to act, which results from all the determinants described earlier. Whether they are the concepts of andragogy, the study of students' behaviour, or labour market expectations – each of these methods involves, to a different degree, encouraging students to build their knowledge or practise a skill through their own action. The methods we selected include: brainstorming, world café, design thinking, peer learning, microlearning, games.

The first method is **brainstorming** [Osborn 1953; Jablin & Seibold 1978]. Our experience shows that it is often confused with an academic discussion or a conversational lecture. The classic brainstorming session consists of at least three stages. All of them are necessary if the final decision is to be made and the plan of action is to be outlined at the end of the meeting. For the sake of classes with students it is enough to conduct only the first phase – the stage of generating ideas. The teacher acts as the moderator; he or she formulates a problem (e.g. in the form of an open question) and encourages students to come up with all kinds of solutions, whether they are possible or impossible to implement. Any solutions and any ideas are welcome in this method. What the moderator may find the most difficult part is to refrain from commenting. The participants, in turn, cannot claim the authorship of an idea as it is assumed that all members of the group work together to work out their joint solution. Trying to prompt the

[5] The summary of the report presented on 17 November 2016 at the lecture entitled *The role of shared services centres in shaping future finance sector specialists in the labour market in Poznan*, in the office of Wavin Poland S.A. (version available in the Bureau of Careers and Internships at WSB University in Poznan).

students to make new suggestions, the teacher may use simple questions, such as: What else? What should there be less of? What should there be more of? What instead? What if… ? At the second stage of a brainstorming meeting, the lecturer is still the moderator, but this time he or she proposes the criteria for the evaluation of ideas and helps to arrange them in order. At the third stage, the teacher is the decision-maker since he or she chooses a person that will implement the idea generated by the whole group. The planning and implementation stages will be more likely to be conducted in enterprises than at university classes, thus we suggested that only the first phase should be practised with students.

The **world café** method serves the purpose of building collective wisdom, sharing knowledge, exchanging ideas and working out concepts [Brown & Isaacs 2005]. It makes the whole group and each participant individually involved. It consists in laying out the classroom to make it look like a café, with tables as workstations among which the teams of participants move when they are instructed to do so. Each table has its host, who introduces the subject, animates the discussion and summarises the main points. The time limit for one team is 10 minutes at one table, after which each team moves to another table. The host puts the team members in the picture and encourages them to add new threads, create and record ideas, and develop the recorded concepts. When all teams go through all stages, the hosts present the results of collective work, followed by a discussion on the adopted solutions.[6]

The next method – **design thinking** is the most complex one.[7] It originates from Stanford University and although it is used in management and engineering, it is also an interesting tool applicable in the educational process. It consists of a series of consecutive elements of the process which should lead to finding a group solution to the problem or generating a creative idea. It involves the following stages: *empathising, defining, ideating, prototyping and testing*. Its application in an interdisciplinary group (students of different majors or specialisations) brings a number of added benefits, related to transferring ideas, confronting different viewpoints and ways of perceiving problems.

The **peer learning** method follows a similar principle [Boud, Cohen & Sampson 2014; Boud 1999]. It is based on contacts between peers or people of a similar age or social status. It departs from the teacher-student relation, focusing on sharing knowledge in one's own environment. It is founded on the assumption that each of the participants of the teaching process, especially adult learners, has

[6] The teacher should put some writing materials on the "tables". In the original version, the whole table is covered with a paper cloth, on which the participants can freely write down or even draw their ideas.

[7] Application possibilities and a detailed description of its stages are discussed in a number of practical publications. One of the more interesting works is the book by Plattner, Mainel and Leifer [2013].

a specific store of content-related knowledge, experience or formulated opinions. Friendly peer surrounding is conducive to sharing this store with others. Students are given time to discuss a problem by exchanging their own experiences.

The peer learning method may be supplemented by **microlearning**. It consists in providing students with small portions of content, so called "learning pills", which they are given not only during classes. The application of available technologies makes it possible to create educational mementos. Microlearning tends towards push technology through push media, which reduces the cognitive load on the learners. Practical applications of this technique together with explanations are discussed by, among others, S. Mosel [2005] and E. Masie [2006], as well as by T. Hug [2007] in the first book about this method.

The last of the presented methods is the **educational game**. Its popularity is connected with the dissemination of technology and an increasingly wide choice of games (e.g. the latest playbook by Sweeney, Mehers & Meadows 2016). Among the most popular types of games used at classes for students are virtual games combining decision-making games and role playing games. Playing them, students act in a virtual world, based on real relationships and regularities, in which they assume specific roles. Their effectiveness thus relies on the arrangement of a friendly learning environment. Their internal motivation is stimulated; students become goal-oriented and are encouraged to interact and get emotionally engaged [Bernaciak & Brańka 2015].

The presented methods do not represent the whole catalogue of available teaching tools to be applied in the educational process. We believe, however, that their specific nature meets students' expectations and the related didactic challenges on the one hand, and, on the other hand, enables the implementation of the assumptions of education for sustainable development.

4. The practical application of the selected teaching methods for the promotion of sustainable development issues

In the Polish academic reality, the areas of sustainable development or climate change are not considered to be separate fields of study. They are not obligatory at the studies in management or economics, either. It seems, however, that regardless of the formal curriculum of subjects, these issues can be implemented at almost any kind of university classes. The application of the teaching methods described above improves the efficiency of their implementation and makes it possible to affect attitudes and beliefs. Although it is a lengthy and not always

successful process, the aim of education for sustainable development is not only to pass knowledge, but also to work on students' attitudes, for example, through stimulating reflection. Below we present the specific examples of the practical application of the particular teaching methods in the studies of economics and management. They are based on our professional experience and may become an inspiration for those wishing to undertake their own teaching "experiments."

The first of the methods we discussed – brainstorming - meets students' need to work in groups in order to solve a problem. It is thus extremely important to remember that the teacher should act as the moderator. He or she should not interfere with the sphere of idea generation, but can only develop the consecutive stages of the analysis by asking supporting questions and providing additional information. If this method is used for teaching subjects not related to sustainable development, it may add a broader perspective to the issues under analysis. When pointing at the possible solutions of a particular case, students may also evaluate the formulated proposals – by assessing their social or environmental consequences, indicating the ways of risk mitigation, or varianting solutions in the context of saving resources. The search for non-standard solutions, the collective generation of ideas and the positive effects of group work may lead to interesting proposals. It is also possible to stage the application of this method. In the first part, students seek solutions, according with the boundary conditions specified by the teacher, while in the second one – these solutions become subject to critical evaluation from the angle of their social or environmental context. This is particularly important at business universities, where economic efficiency, profitability or low costs are the dominant criteria. An alternative look at these issues may give rise to further studies in the area of sustainable development.

When the next method – world café – is used, the value-added concerns interpersonal competences and the application of positive effects of changing the learning environment (the field of neuroscience). It often happens that the layout of space itself – a friendly room with a few tables with chairs, suitable for holding informal meetings – may stimulate and encourage students. What may be an interesting thing to do is to combine this method with a quasi role playing game, in which the particular groups of participants represent different interest groups (stakeholders) and analyse the situation from the angle of their needs and expectations. It helps to distinguish different viewpoints, as well as different interests and desires of each participant of the decision-making process. Vacancies in city centres and proposals concerning their efficient development may serve as a good example of an issue to be evaluated. In this case, the stakeholders will include: local authorities, investors, city residents, the homeless.

The design thinking method is mostly dedicated to project-based classes and should be implemented in a complex, purposeful and organised way. Its methodology is thoroughly discussed in the literature and what is its benefit is the fact

that it is applicable in interdisciplinary groups. It makes it possible for students to obtain competences that are valuable from the point of view of a potential employer and to develop interpersonal and communicative skills. The traditional educational model is thus modified. This method is also more effective owing to students' emotional engagement in the problem and a sense of having actual influence on reality (if this is possible). Therefore, it is recommended that local authorities or social organisations should be contacted so that students could face real problems demanding instant solutions. The examples include issues of property development, social inclusion, local investment projects and programmes, social participation, etc. The more related to the participants' daily activity a given issue is, the more involved they become.

The use of the peer learning method, just like in the case of brainstorming, requires the minimisation of the teacher's participation. At the same time, it is a kind of challenge, because its aim is to create conditions for students to share acquired knowledge, which is not always effective or may not even be possible (students have neither knowledge nor experience in this area). From the point of view of education for sustainable development, this method may be effectively used, though. It helps to verify stereotypes and widely-held beliefs which may be rooted in the learners' minds. It is the issues of climate changes or alternative energy sources that are vulnerable to this kind of incompetence. By making such issues the topic of discussion we create the foundation for formulating solutions based on students' knowledge, which is gradually verified by the teacher through information, data and source documents he or she provides. It is also recommended that students are given materials presenting different viewpoints before classes, and then encouraged to share the knowledge they have acquired and reach consensuses.

Microlearning is a tool that may support all the above forms of teaching classes. In order to use it effectively, the teacher must increase his or her involvement outside working hours. However, it is an efficient tool, which fits in the modern communication model. To maintain the real contact with students and spread certain opinions or beliefs among them, it is worth using the same communication channels as your students use. The classes are by no means traditional lectures based on the lecturer-listener relation. As the research results presented above show, young people do not prefer this kind of communication. The use of community sites (Facebook), micro-communication channels (Twitter), nonstandard tools of information transfer (Instagram, Snapchat) or any other channels of virtual communication (internet websites, blogs, microblogs, videoblogs) allows teachers to enter the world in which their students spend a lot of their time. This requires specific forms of communication, which are more accessible for them (short announcements, visual messages, etc.). Such forms also make it

easier to use everyday situations for passing general ideas connected with sustainable development.

The last of the tools under discussion is the most diverse and complex one. The use of games for teaching, apart from a number of benefits discussed in the literature quoted before, allows illustrating relationships that occur in the real world in a simplified and indirect manner. Games make their participants cooperate effectively in a group; they teach them to make decisions and test their effects in the safe conditions of virtual reality, as well as additionally engaging players, introducing the element of emotional involvement. In case it is not possible to use a specific teaching game, teachers can create such on their own. The simplification of the described phenomena, the attempt to use simple tools (paper, scissors, coloured markers), and the introduction of the element of rivalry, all help to create short game-based teaching activities, which may make classes significantly more attractive. These games may directly refer to the issues of sustainable development, but they might also be used for teaching subjects in the field of management. By carrying out the decision analysis, the evaluation of the results of the adopted solutions or different kinds of effects, students can assess the efficiency of the implemented strategy in a broader context.

5. Conclusion

Education for sustainable development is a complex activity and involves a number of challenges. In order to use it effectively, teachers must constantly broaden their knowledge, increase their involvement and show courage. The inclusion of sustainable development problems in the content of other classes seems to be essential for the completeness of the educational process, not only regarding knowledge, but also social competence and behaviour. The issues addressed in this paper contribute to and stimulate the reflection on the daily teaching practice of academic lecturers. The methods we discussed represent only a part of methodological skills, which should be improved on a regular basis. A question arises whether teachers themselves should undergo additional training in the implementation of environmental content in their everyday practice. Only focused and consistent action in this respect can influence young people's perception of the environmental challenges of the contemporary world.

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Wykorzystanie innowacyjnych metod nauczania w popularyzacji zagadnień zrównoważonego rozwoju wśród studentów (na kierunkach ekonomia i zarządzanie)

Streszczenie. W artykule przedstawiono główne wyzwania w nauczaniu dorosłych, kładąc nacisk na wybrane metody nauczania. Dokonano ich opisu na podstawie źródeł literaturowych oraz ukazano możliwości ich zastosowania w edukacji na rzecz zrównoważonego rozwoju, opierając się na praktyce dydaktycznej autorek. Ponadto przedstawiono wyniki badań prowadzonych przez różnych badaczy na polskich uczelniach, odnoszących się do oczekiwań, preferencji i potrzeb studentów w zakresie procesu dydaktycznego i jego efektów. Sprostanie zgłaszanym potrzebom wymaga od prowadzących zajęcia szczególnej uwagi i świadomego zaangażowania. Głównym celem opracowania jest omówienie wybranych metod nauczania, takich jak: *world café*, *design thinking*, *microlearning* czy gry dydaktyczne, oraz przedstawienie propozycji ich praktycznego zastosowania w edukacji na rzecz zrównoważonego rozwoju, przede wszystkim wśród studentów kierunków ekonomii i zarządzania.

Słowa kluczowe: edukacja na rzecz zrównoważonego rozwoju, studenci, metody nauczania