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Teacher's competencies for sustainable development

Abstract

Social challenges from 21st century require a major change in people's consciousness, thinking and acting. Because social changes take place thanks to education and through education, it is necessary to pay attention just on education as a way to change people's consciousness, thinking and acting. This can be accomplished through the acquisition and development – in the course of formal, informal and non-formal – key competencies for sustainable development. Education for sustainable development is a model which is still developing, evolving, but it is a way of achieving such social, environmental and economic changes, that will make the world a more just, more friendly place to live for people today and generations to come.

Key words: sustainable development, teacher's competencies, key competencies for the future

Introduction

Education, especially in the developed societies and developing countries, is one of the most important areas of social life. Education takes place in society, and thanks to education, it is possible to achieve common goals; education enables the implementation of social needs. Education is a kind of human action, which allows to meet the current needs of the people associated with the preparation of the professional activities, participation in economic life, social participation, shaping the future of an individual. It takes place in a specific time and is directed towards the future¹. The main task of education at every level is to shape the world of tomorrow, equipping individuals and communities with the skills, knowledge, attitudes,

¹ M.J. Szymański, *Socjologia edukacji*, Impuls, Kraków 2013.

and values for the common life and cooperation in a sustainable way². Changes, taking place in the school systems, reveal a very interesting picture – they reject the existing state or modify it in a cumulative, dialog, or evolutionary manner³. The purpose of education is to create the desired social changes and to enable students to follow these changes. The education makes possible the development – of an individual, as well as groups, communities, societies and the world.

Contemporary social and economic changes constantly expand the range of tasks and learning needs. Education is a response to the challenges of the twenty-first century. Currently, the main driving forces in the world's society are globalization, integration of communities in different countries, the development of an economy market, the rapid development of civilization and scientific-technical, cultural changes and progressive democratization of social life⁴.

Therefore, the teachers face new challenges. The teachers of the future, working in constantly changing conditions, will have to master the skills that will make them able to forecast not yet existing situations and to prepare youth for those changes. The task of the teachers is to prepare young people for life in a changing – liquid⁵ – reality in which the only certainty is change.

Education for sustainable development of the individual and of the world

The need for sustainable development has begun to speak in the 70s of last century, when the negative effects of economic development became known. The main problems which led policymakers to take remedial measures, were primarily: increased production, increasing level of (hyper) consumption, and the consequent change – environmental (such as the greenhouse effect, pollution etc.), social (expansion of the inequalities within societies, as well as internationally – privileged countries vs. countries discriminated).

Many important principles of sustainable development have been developed during the conference “The United Nations Conference on

² M. Rieckmann, Future-oriented higher education: Which key competencies should be fostered through university teaching and learning?, *Futures*, 2012, 44(2), pp. 127–135.

³ B. Śliwerski, Wieloparadygmatyczność w ponowoczesnej myśli pedagogicznej, *Rocznik Pedagogiczny*, 2008, vol. 31, p. 7.

⁴ Ibidem, pp. 9–10.

⁵ Z. Bauman, *Płynna nowoczesność*, Wydawnictwo Literackie, Kraków 2006.

Environment and Development (UNCED)”, held in July 1992 in Rio de Janeiro. UNCED – the process prepared lots of important documents, which became the basis for the initiation and implementation of a new policy already formulated. The result of the summit were, among others documents: *Rio de Janeiro Declaration on Environment and Development*, *Agenda 21*, the *Declaration on the management and protection of forest resources*, the outline of the treaty on climate change and biodiversity treaty. Two treaties were signed at UNCED, the rest have been generally accepted.

Rio Declaration *Environment and Development* contains 27 principles that form the basis for policy development and are the basis for *Agenda 21*. *Agenda 21* is a program of action in the twenty-first century, and it has many different areas of interest. Its 36th chapter relates directly to education⁶.

Ten years after the conference in Brazil, there was another UN summit, this time in Johannesburg. During the congress, the progress in implementing the principles of sustainable development, including in the field of education, has been rated as unsatisfactory. This prompted the UN to intensify their efforts and to announce The Decade of Education for Sustainable Development (DEZR) for the period 2005–2014. UNESCO controls all the initiatives involved with the Decade⁷.

Sustainable development gives equal rights to the needs of the present and future (without limiting the latter) and includes three dimensions: social, including cultural, economic and environmental. Cooperation in these integrating areas is to ensure sustainable and harmonious development of man and the world for a sustainable future, taking into account the principle of intra- and intergenerational justice. That means, on the one hand – just distribution of goods within a single generation, on the other – to allow the next generation to use the goods that are available today. Therefore, four priority, international initiatives have been stressed:

- to improve the quality of life (poverty reduction, strengthening health etc.),
- to promote human rights (the equal rights of men and women; the autonomous development of societies; childcare and elderly care; perception of education as an autonomous right of every human being etc.),

⁶ <http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>, access: 16.10.2014.

⁷ J. Kostecka, Dekada edukacji dla zrównoważonego rozwoju – wizja, cel, strategia, *Problemy Ekorozwoju / Problems of Sustainable Development*, 2009, vol. 4, no 2, pp. 101–106.

- to promote education as a key to development, way allowing people to use their potential, to take responsibility for the decisions they make,
- to focus on the quality of education and learning how to learn (the participation of all people),
- to focus on the quality of education and development – initiatives are not only for the government sector and government organizations, but also the private sector, communities, individuals⁸.

In accordance with the principles of sustainable economic development, it is proposed that all projects should bring the greatest economic benefit – for both: today and next generations. Economic efficiency must ensure a good life today and the prospects for the future. This means that the development must be determined by the quality of economic performance, protection of natural resources, participation in economic development and consumption of goods and services. One of characteristic trends in sustainable economic development is cost-effective, rational management of natural resources and the use of renewable energy sources. The aim of this action is to prevent the degradation of natural resources while ensuring the growth of GDP. What is needed is a change in the direction of development of the national economy, improving the quality of life and changing patterns of human behavior.

Management of the economy in line with the objectives of sustainable development means taking such action in the present, which do not limit the possibilities for the future. By this we mean the prospects for economic benefits for future generations. When we plan economic development we should thus take into account the cultural heritage and the environment. Components of sustainable economic growth are therefore: using technology which does not require the use of large amounts of raw materials, subsidizing and investing in organic products, as well as tax policies supporting environmentally friendly initiatives.

Social sustainability is one that will allow people to keep more control over their lives, by allowing all social groups to take an active part in decision-making. It is postulated perception of the development of society as a whole, the involvement of all social groups in the development of the surrounding reality so as to be able to work for the sustainable, harmonious development. It is necessary to care about environmental ethics, quality of life, as well as concern for the welfare of future generations and other cultures. Social development, understood as a common aspect of sustainable development, is the search for answers to the question about the role

⁸ B. Kędzierska, A. Czekaj, *Wokół założeń edukacji dla zrównoważonego rozwoju*, http://inow.up.krakow.pl/edukacja_dla_zr.php#tutaj, access: 11.11.2014.

of man in the universe; it contains a discussion of ethics and morals. Its aim is to move away from disturbing the natural balance in the direction of harmonious cooperation of all social groups, communities and societies occurring ecosystem and its dependencies⁹.

Cultural sustainability means to engage in activities for sustainable development of all cultural groups, because when taking action for development, we must take into account the values shared by all people, which will feel an impact of those actions. Absolutely all cultures of the world should be involved in the activities. Their heritage, core values and traditions must be known in depth. Culture must be understood here as a way of being of people, their behavior in their relations, their history, traditions and customs. Knowledge of customs, values and cultural identity of the people plays a very significant role in the common setting trends and making commitments. People's lives are largely determined by the cultural heritage and relationship to their environment. People express themselves through culture. Sustainable development requires knowledge of cultural, protect and ensure the possibility of the development of culture and traditions, which are, after all, a direct relationship with the entire history of civilization. Cultural identity is much more durable than the shape of the economy, because if there is a market crash, the collapse of the government or political doctrine, cultural identity of the country or region will not change. It is a guarantee of the survival of the people, the state and the economic system¹⁰.

Environmental sustainability is the need to acknowledge the fact that none of the above-mentioned aspects would be possible without the normal functioning of other species and natural processes. Environmental sustainability is the development of the concept of moral development and responsibility for other living organisms and the relationships between them. It operates according to certain rules, regulating its operation itself and all its elements are extremely important. This system must survive, it must be protected.

Practical measures for sustainable development require the promotion of this type of thinking, as well as attention to the development of environmental awareness in our societies and their participation in public life and promotion of environmentally-friendly lifestyle¹¹.

⁹ G. Jutvik, I. Liepina, *Edukacja ku zmianie: podręcznik edukacji na rzecz zrównoważonego rozwoju*, Gandrs, Riga 2008.

¹⁰ Ibidem.

¹¹ Ibidem, pp. 9–10.

Education for Sustainable Development (ESD) is the projection of education that seeks a balance between the human world and the environment, and economic welfare, along with respect for cultural traditions and natural processes that occur on Earth. One of the tasks of ESD is applying in education transdisciplinary educational methods, which aim is to be the promotion of lifelong learning.

The aim of education for sustainable development is to promote attitudes of respect for human needs, which are consistent with the sustainable use of natural resources while respecting the needs of our planet. An important task of education is to promote global solidarity, which means that in their daily choices people should be guided by the principles of fairness, empathy and equality.

The key objectives of ESD include:

- making students able to reflect on their own and other people's situation;
- finding interrelations and determinants of these situations;
- encouraging a critical evaluation of the facts and circumstances;
- forming a reflective look at the capability of individual and collective responsibility;
- the development of critical reflection on the possibilities of changing the current (unsustainable) situation;
- implementation of the responsibility for decisions made individually and socially¹².

To make the changes that are occurring in our reality have chosen the right direction, we should build our society in line with the sustainable development.

With the aim of achieving sustainable development we must turn to education. Education, being responsible for the development of key competencies and preparing graduates to actively enter the labor market, is the best approximation of the assumptions and the importance of sustainable development.

The main goal of education for sustainable development is the formation of competencies that will make students able to create the future – the ability to analyze the current situation, predict the direction of development and threats (both in terms of environmental, social and economic), and find solutions to ensure that future generations can live in a more just and ecologically friendly environment than the current.

¹² B. Kędzierska, A. Czekaj, *Wokół założeń edukacji...*, op. cit.

Education for sustainable development should also take into account and widely promote the ideas of sustainable development, namely:

- intergenerational justice;
- gender parity;
- social justice;
- tolerance;
- provide and promote sustainable consumption;
- protection of the environment;
- protection of biodiversity;
- prevention of extreme poverty, natural disasters and climate change, as well as;
- prudent management of financial resources.

Thus, it is education, that indicates the complexity and interdependence of the environment, social conditions and economic resources¹³.

Teacher's competencies in the 21st century

In modern society, shaping up as a result of various processes of globalization, the condition of keeping up with the development is to have competencies that make people able to meet the needs of a changing world. Competencies are, in fact, a key determinant of human activity in the modern world¹⁴.

According to Marco Rieckmann, competencies are individual disposition to self-organization, which involves cognitive, affective, volitional and motivational elements, that are interactions of knowledge, skills and abilities, motivation and affective tendency, therefore, the competence is the ability to act¹⁵.

The key competencies are absolutely necessary competencies to implement social objectives defined in the standard plan of action (e.g. to achieve a state of sustainable development) and which are important for every individual. Possession of key competencies should ensure a satisfying, great life in well-functioning community. Key competencies consisting of knowledge, skills and attitudes appropriate to each context are fundamental for each individual in a knowledge-based society. They provide

¹³ Ibidem.

¹⁴ B. Kędzierska, *Kompetencje informacyjne w kształceniu ustawicznym*, Instytut Badań Edukacyjnych, Warszawa 2007.

¹⁵ M. Rieckmann. *Future-oriented higher education...*, op. cit.

added value for the labor market, social cohesion and active citizenship by offering flexibility and adaptability, satisfaction and motivation¹⁶.

Wacław Strykowski believes that competence is the ability and willingness to perform tasks at a certain level. This is a learnable ability to do things well; competencies are the efficiencies needed to deal with problems¹⁷. Maria Czerepaniak-Walczak says that the competence is a particular feature, expressed in demonstrating – at the standards set by the social level – skills for adequate behavior in the awareness of the need and what are the consequences of such behavior and to take responsibility for it¹⁸.

Barbara Kędzierska notes that:

[...] Competence is a combination of knowledge, skills and attitudes appropriate to the context. They remain [competencies – ed. A.M.] in close interaction with the psychological profile of the man. Our needs, emotions, motivations, certain personality traits, values, the possibility of creative thinking and the development of knowledge have a direct impact on the extent of our competencies, and the ability to shape their development. On the other hand, having more competence develops our personality, broadens view, affects the perception and analysis of reality, which may have an impact on further, lifelong process of our development, updating of existing and development of new competencies¹⁹.

In the cognitive concept of human, competencies are considered as indications of the activity of the individual²⁰. The term *competence* appears as a determinant of human activity; to be competent means being able to identify own activity as a rational and objective. Competence refers not to the activity itself, but rather to practical knowledge and skills for reflective action. The concept of competence should be referred to the “stand-mover”, that means having such level of knowledge, practical skills, attitudes, and emotional involvement, which guarantee the effective implementation of a specific type of order or task at any time²¹. Competence therefore means feature that allows a person to function well in a variety of

¹⁶ http://europa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11090_en.htm, access: 21.11.2014.

¹⁷ W. Strykowski, J. Strykowska, J. Pielachowski, *Kompetencje nauczycieli szkoły współczesnej*, Wydawnictwo eMPI², Poznań 2003.

¹⁸ M. Czerepaniak-Walczak, *Aspekty i źródła profesjonalnej refleksji nauczyciela*, Edytor, Toruń 1997, pp. 87–88.

¹⁹ B. Kędzierska, *Kompetencje informacyjne...*, op. cit., p. 110.

²⁰ Ibidem.

²¹ Ibidem.

situations. It enables the implementation of tasks in an efficient manner and at the appropriate level. Competencies are revealed by persons acting in specific situations, and with competencies human action becomes more effective. Depending on what sphere of human action concerns the activity, we can distinguish relatively broad categories of competencies, for example: cognitive competence, emotional, interpersonal, or professional school competencies, or narrow, specialized competencies, like managerial competence, effective managers competencies, or “good teachers” competencies²². With competence, it is possible to achieve success. Having competence is also an achievement in itself. Competencies are a higher stage of development of human potential and innate aptitudes and abilities. Acquired and developed – are developed and improved in the learning processes, both: individual (based on someone’s own experience) learning and directed learning – in a particular educational system²³. Competence development lasts a lifetime and is then placed on the path of reconstruction-augmentation, by enriching existing skills and characteristics of the new – and not by replacing the one by the other.

Therefore, the specific role of teachers who, in the course of their work, are obliged to continuously update and acquire new competencies, is to encourage their students to shape the ongoing development needs by acquiring new competencies. It is worth noting that the acquisition of competences is not the same as process of acquiring knowledge. Competencies can be learned (are learnable), but the teacher cannot teach them (they are not teachable). This raises the question of how they can be acquired through curricula.

Among the competencies that teachers – working with students at every level of education – should possess, the most important are: language, communication, cognitive, interpretative, auto-creation, interpersonal, social, informative and professional competencies.

Language competencies²⁴ were defined in the 60s of the twentieth century by Noam Chomsky. Linguist described language competence in the category of mental structures: language skills are not something external to man; a knowledge about language means that someone has a certain structures of thought, consisting of a system of rules and regulations.

²² K. Tucholska, *Kompetencje temporalne jako wyznacznik dobrego funkcjonowania*, Towarzystwo Naukowe Katolickiego Uniwersytetu w Lublinie, Lublin 2007, p. 36.

²³ W. Furmanek, *Podstawy edukacji zawodowej*, Wydawnictwo Oświatowe FOSZE, Rzeszów 2000.

²⁴ N. Chomsky, The formal nature of language, [in:] E. Lennberg (ed.), *Biological Foundations of language*, J. Wiley & Sons, Inc., New York 1967, pp. 397–442.

Communication²⁵ competencies are associated with the ability to use language in a way that is adequate to the situation and the social role of speaking person. This is reflected by the ability to “dialogue” way of being – in other words: the ability to be in dialogue with others and with himself. Dialogue is understood as a conversation with another person; a conversation that breaks the anonymity of expression and as an attempt to understand *myself* and what surrounds us together.

The cognitive competencies²⁶ express the ability to perceive the problem situation, its essence, creativity in finding solutions, creative thinking, fresh perspective on situations already known, the ability to make decisions and cognitive curiosity.

Associated with the sphere of emotions, emotional competencies are necessary to thrive in a changing environment. Person who acquired emotional competence²⁷ is better adapted to life, his actions bring better results. These competencies include awareness and the ability to recognize someone's own and others' emotional states, their naming ability, the ability to postpone reactions, coping with negative emotions etc.

Maria Dudzikowa indicates the competencies for interpretation²⁸ as important, especially in the teacher's everyday work. This kind of competencies is responsible for “making the world intelligible”. Thanks to them, a person can find and read the meaning of what surrounds him, and what he is experiencing. Competence for interpretation means the ability to understand the world.

Competencies for self-creation²⁹ are associated with self-development and self-improvement processes, and expressed, inter alia, in the individual's ability to initiate and carry out tasks, in order to achieve such changes in the psyche, which person intends to comply with those desired at a given stage of development standards.

Interpersonal competencies³⁰ are critical when it comes to effectiveness in establishing and maintaining relationships with others. Their expressions is – inter alia – the ability to take the initiative, ability to work in a heterogeneous group, understanding the emotional states of others, the ability to resolve disputes and conflicts.

²⁵ D. Hymes, Socjolingwistyka i etnografia mówienia, [in:] M. Głowiński (ed.), *Język i społeczeństwo*, Czytelnik, Warszawa 1980, pp. 41–79.

²⁶ K. Tucholska, *Kompetencje temporalne jako wyznacznik...*, op. cit., p. 54.

²⁷ D. Goleman, *Inteligencja emocjonalna w praktyce*, Media Rodzina, Poznań 1999.

²⁸ M. Dudzikowa, *Praca młodzieży nad sobą*, WSiP, Warszawa 1993.

²⁹ S. Dylak, *Wizualizacja w kształceniu nauczycieli*, Wydawnictwo Naukowe UAM, Poznań 1995.

³⁰ J. Raven, *Competence in modern society: its definition, development and release*, Oxford Psychologist Press, Oxford 1984.

Each teacher must have social competencies³¹, which are understood as conditioning efficiency skills to cope with different types of social situations³². They are acquired in the course of everyday social contacts.

Professional competence³³ assume having qualifications, which are considered as interdependent, confirmed by obtaining the proper certification, systems of knowledge, skills and psychophysical features necessary to perform specific tasks, which entitle the person responsible for issuing opinions and judgments in a particular area. They consist of the skills necessary to work at a given position and those that affect the increase in the level of tasks. These include, for example, ease of learning new things, organizing jobs, saving effort and materials, teamwork and building the team.

Information competencies³⁴ allow teachers to operate information more effectively. Information has always been important to human, thus determining the fate of individual people and societies. Its value lies in the strength and extent of the changes they cause in the surrounding human reality. With the possession of information literacy it can be easier, faster and more efficiently to pursue goals and the tasks³⁵.

Robert Kwaśnica³⁶ notes that for the proper functioning of teachers, they should acquire two types of competencies: practical–moral and technical. The first group of competencies (practical–moral) is associated with empathy, understanding of the situation of the student, and above all, self-reflection and continuous verification of the quality of teacher’s work, which in turn implies the moral responsibility of the teacher as a person supplying the students not only with knowledge, but also with the skills and attitudes. Moral competencies mean the ability to conduct – necessary in teaching – moral reflection. Their participation in the life of every human being is expressed in questions about the justification of moral reflections. Having practical–moral competencies enables the development of technical competencies, which are understood as a part of teacher preparation. Without practical–moral competencies, and therefore in isolation from reflective skills and experience of the student’s own situation (empathy), technical

³¹ A. Matczak, Różne oblicza inteligencji: funkcjonowanie intelektu a osobowość, *Studia Psychologica UKSW*, 2001, no 2, pp. 157–170.

³² W. Furmanek, *Podstawy edukacji zawodowej*, op. cit.

³³ B. Kędzierska, *Kompetencje komunikacyjne...*, op. cit., p. 46.

³⁴ *Ibidem*, p. 45.

³⁵ *Ibidem*, p. 110.

³⁶ R. Kwaśnica, Wprowadzenie do myślenia o nauczycielu, [in:] B. Śliwerski, Z. Kwieciński (eds.), *Pedagogika*, vol. 2, PWN, Warszawa 2008, p. 197.

competencies can be a tool to threaten the development of the individual and society, and not the educational method.

Wacław Strykowski³⁷ notes that the teacher's competencies are considered in three dimensions: substantive competencies, didactic–methodical and educational competencies. This division corresponds to the classification of the teacher's competencies proposed by the OECD, in which the authors present three of the most important – in their opinion – groups of competencies necessary for the efficient work of the teacher at every level of education:

- subject competencies – primarily related to knowledge;
- methodological competencies – related to the way of transfer of knowledge and action;
- social competencies;
- personal competencies – related with attitudes, beliefs, motivation³⁸.

Competencies for the future as key competencies in teacher's workshop

In the view of the need to implement the demands of sustainable development, both for the individual, and for social, researchers began to seek solutions that will ensure sustainable and harmonious human development. This solution may be the acquisition of competencies for the future as a key to achieving sustainable development of the individual and the world.

So far, a number of concepts of competence for sustainable development have been created. The most valuable of them have been developed by research teams of Gerard de Haan and Marco Rieckmann, and detailed in the works of, among others, Maik Adomßent and Thomas Hoffman.

The shaping competence, according to the creator of the concept, Gerard de Haan, is composed of twelve sub-competencies³⁹:

- competency in anticipatory thinking,
- competency in interdisciplinary work,

³⁷ W. Strykowski, Kompetencje współczesnego nauczyciela, *Neodidagmata*, 2005, no 27/28; W. Strykowski, J. Strykowska, J. Pielachowski, *Kompetencje nauczyciela...*, op. cit.

³⁸ D. Rychen, Key competencies: Meeting important challenges in life, [in:] D. Rychen, L. Salganik (eds.), *Key competencies for a successful life and well-functioning society*, Hogrefe&Huber, Cambridge/MA., Toronto–Bern, Göttingen 2003, pp. 63–107.

³⁹ G. de Haan, The BLK 21 programme in Germany: a Gestaltungscompetenz-based model for education for sustainable development, *Environmental Education Research*, 2007, 12(1), pp. 19–32; G. de Haan, The Development of ESD-Related Competencies in Supportive Institutional Frameworks, *International Review of Education*, 2010, 56(2–3), pp. 315–328, <http://www.springerlink.com/content/ek411m104jwq7728/fulltext.pdf>.

- competency in cosmopolitan perception and change of perspectives,
- competency in handling incomplete and complex information,
- participatory competency,
- competency in cooperation,
- competency in dealing with individual decision dilemmas,
- competency in self-motivation and motivating others,
- competency in reflection on individual and cultural models,
- competency in independent action,
- competency in ethical action,
- capacity for empathy and solidarity.

Marco Rieckmann used the *Delphi method* to examine the opinion of scientists – experts from Western Europe and Latin America on the competencies needed for shaping the future. At the second stage of the study, of the 19 most frequently occurring proposals researcher – on the basis of proposals of experts – has identified 12 sub-competencies that make up the competence of creating the future. Those are:

- competency for systemic thinking and handling of complexity,
- competency for anticipatory thinking,
- competency for critical thinking,
- competency for acting fairly and ecologically,
- competency for cooperation in (heterogeneous) groups,
- competency for participation,
- competency for empathy and change of perspective,
- competency for interdisciplinary work,
- competency for communication and use of media,
- competency for planning and realizing innovative projects,
- competency for evaluation,
- competency for ambiguity and frustration tolerance⁴⁰.

In March 2013, Maik Adomßent and Thomas Hoffman in document entitled *The concept of competencies in the context of Education for Sustainable Development*⁴¹, described the concept of competencies for the future in more detailed way. In their view, having shaping competencies is exceptional willingness to act and solve problems. Those who have the competencies for the future, can build new world, through active participation in modifying and shaping society of the future, which will be sustainable world. Shaping

⁴⁰ M. Rieckmann, *Future-oriented higher education...*, op. cit., pp. 127–135.

⁴¹ M. Adomßent, T. Hoffman, *The concept of competencies in the context of Education for Sustainable Development (ESD)*, <http://esd-expert.net/assets/130314-Concept-Paper-ESD-Competencies.pdf>, access: 20.11.2014.

competence is a set of sub-competencies, which aim is to enable active, reflective and cooperative learning towards sustainable development.

The proposal prepared by these authors includes the following competencies:

1. Competencies in forward-thinking

Competencies in forward-thinking are the crucial points in the ESD approach. In spite of the 'human gap', we – as humans – have to learn how to deal with the future problems and therefore with uncertainty and expectations, as the future is definitely open. The analysis of the last decades taught us that we have to 'think beyond the present', as de Haan formulates. This means considering the future consequences of our actions taken at any time and everywhere in a global context. In contrast to concepts of learning from former generations, we can't be sure that our traditions ensure that we will behave correctly. Our living conditions are not only globalized, but – at the same time – highly dynamic and still showing an upward trend. Instead, we have to understand that learning in the context of globalization and global challenges means preparing people to be able to cope with situations that might surprise us, that are different to what we have expected. This includes also the ability to estimate and value risks, danger and uncertainty, as well as creativity and imagination.

2. Competence to create knowledge in an open-minded manner and while integrating new perspectives

Here, the focus lies on the dimension of space and the manifold of cultures. As we have to consider far-away times in our daily decisions and actions, we have to consider the consequences of our daily decisions for the planet as the base of our existence (and therefore for people all over the world).

3. Competence in interdisciplinary work

It is very important that ESD is not a new subject at school, but a way of thinking and acting, a certain perspective of thinking and understanding above all subjects and disciplines. This approach includes the analytic, problem-solving scrutiny that considers the complexity of the global challenges, as well as the simple daily practice. In particular, the complexity of most of the challenges causes the necessity of a wide interdisciplinary understanding and therefore learning. You cannot find solutions to global problems regarding them only out from one single point of view, like economics, politics, biology or geography. To be able to recognize behavior as sustainable or not, you need an interdisciplinary understanding in general, including systemic thinking. All this requires the development of corresponding skills.

4. Competence in cosmopolitan perception, transcultural understanding and cooperation

The global perception is central for this sub-competence. In a globalized world, we need the capacity to identify, localize and understand the manifold phenomena we permanently perceive in our daily life. The regional or national perspective has definitely become too narrow to cope with that new situation. So the horizon-expanding perception is the indispensable assumption to make the grade (with our globalized reality, our complex societies and structures, and all the other phenomena of our world). But this sub-competence not only covers the question of local versus global perception. It also includes the attitude of being interested in other cultures and the readiness to learn from each other all over the globe.

5. Learning participatory skills

This sub-competence could be interpreted as the democratic learning dimension of ESD. It summarizes the ability to plan and act with others but also to find collective decisions in a democratic and fair way. Sustainable development cannot be implemented by a governmental act, the allocation of technical innovations or the existence of efficient economies. It rather requires active and passive support from all societal groups to be durable. In this regard, all over the world we can observe the increasing drive of people to participate and act towards sustainability.

6. Competence in planning and implementation skills

The core of this sub-competence is the awareness to learn that we have to take into account the rapid changeability and temporary nature of knowledge relevant to planning. This means that we have to cope with permanently and rapidly and dynamically changeable conditions and structures instead of the much more static natural and social environment faced by former generations. The permanent readiness to learn, to prove, to correct and to adjust one's individual decisions, actions and behavior is required. Only if we manage these challenges we can successfully develop the implementation skills we need for collective and permanent development with regard to sustainability and transform desire into action. Central elements are the ability to create cooperative networks and the willingness to learn from mistakes.

7. The capacity for empathy, compassion and solidarity

There will be no sustainable development if we do not find a much fairer balance between rich and poor, the privileged and the disadvantaged. Repression must be overcome. 'We' must become a global dimensional term. And this will not work without empathy, compassion and solidarity. a global 'we' is the assumption of a common strategy of future-oriented

solutions aiming for more justice. Therefore, the development of empathy and its relative values, as well as a widened perception of time and space in our consciousness, are central sub-competencies within the scope of ESD.

8. Competence in self-motivation and in motivating others

Over the last twenty years, we learned that there is neither a lack of understanding of the global challenges, nor a lack of solution strategies – but a lack of action. To overcome this fundamental problem (and bridge the human gap), we have to move motivation into the focus of one of the ESD sub-competencies. The realization of shaping competence has both an individual as well as a collective or social dimension. Accordingly, we have to develop the ability to motivate ourselves and encourage others to realize action towards sustainability. We need to reflect individual, as well as social actions in different cultural structures. The ability to reflect on different dimensions of culture, society and space must be interlinked with the sub-competencies of empathy, compassion and solidarity⁴².

Methods and forms used by teachers in their everyday work should enable students to acquire the competencies for the future. A competent teacher, by taking conscious action, and so the choice of methods and forms of work, should help students in the acquisition and development and constant updating of competencies that will enable students to shape their own future and the future of the environment in which they live. Teacher's professional experience, as a part of his competencies, enables continuous verification of the effects of their own work. This, in turn, allows to determine whether and to what extent the methods and forms used by teachers in their daily work support the development of future competencies among students. Using the knowledge, skills and experience, the teacher should know how to choose the learning content as to enable students to raise their awareness of sustainable development priority areas. In this way, students can acquire future competencies necessary to develop in a harmonious manner and promote sustainable development of the world.

Conclusions

To achieve a state of sustainable development is a priority for all countries around the world and the requirement for better development of mankind.

⁴² Ibidem.

Presented in the text considerations on the issue of teachers' competencies in the context of sustainable development are recommendations that should be further explored, and then the research should be done, aimed at further exploring of the notion of shaping competencies. Scientists should work on creating such a concept of competencies for sustainable development that takes into account the skills of teachers acquired in the course of education and training, appropriate to the social context and the culture in which research is done. Key competencies for sustainable development must be purchased by teachers and through education (formal, informal and non-formal), and also by students. This is a necessary condition for achieving sustainable, harmonious development of individuals and – in a broader perspective – societies around the world. If the world should develop in a sustainable way, each person must have and develop competencies to shape his or her own future and influence the future of the environment in which he or she lives, and through it – the whole planet.

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