

# Development of teachers' professional skills in education for sustainable development

*Svetlana Tolstikova*<sup>1\*</sup>, *Larisa Osechkina*<sup>2</sup>, *Elena Tabolova*<sup>2</sup>, and *Galina Travinova*<sup>3</sup>

<sup>1</sup>Department of General and Practical Psychology, Moscow City University, 4 Vtoroy Selskhozajstvenny proezd, Moscow, 129226, Russian Federation

<sup>2</sup> Institute of Advanced Training and Professional Retraining, Moscow State Regional University, Vera Voloshina str., 24, 141014, Moscow region, Mytishchi, Russian Federation

<sup>3</sup> Department of Psychology, Moscow International University, Leningradsky Prospekt, 17, 125040 Moscow, Russian Federation

**Abstract.** The article considers the skills and features of the personal development of a teacher in education for sustainable development (ESD). It contemplates over the influence of age differences on the formation of the professional and communicative culture of a specialist in higher education. Moreover, it describes the necessary conditions for the professional formation of the professional and communicative culture of a teacher in the development and promotion of her or him as a professional that is capable of raise the environmental awareness in students and help them to nourish their sustainable citizenship. In addition, it discusses the role of teacher training in education for sustainable development and stresses the importance of reorienting teacher training to take sustainability into account in the context of education policy and the implementation of the Sustainable Development Goals (SDGs).

## 1 Introduction

The educational processes at universities including sustainable education (or the education for sustainable development or ESD) are systematic and aim to make use of the knowledge acquired in professional and everyday life. University education is a crucial point because it is systematic and aims to develop knowledge in the educational field and its application in the real world that is burdened by contemporary problems such as global warming and climate change [1, 2]. It is aimed not only at students but also at professors who aim to promote their students to higher academic achievement and professional success. In contrast to secondary education institutions, students in higher education institutions have more opportunities because they have the opportunity to choose from a variety of educational institutions such as schools, colleges, universities and colleges [3]. Teaching quality becomes a key component of education plans. Professional development, teacher preparation and research also support the importance of teaching qualities and identify content-specific pedagogy as a key component. This is a good example of how we can integrate best practices in professional development and research in preparation for teaching into our education

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\* Corresponding author: [tolstikovasn@mgpu.ru](mailto:tolstikovasn@mgpu.ru)

systems [4, 5]. For instance, government-funded school-supporting reform programs in the United States are focusing primarily on teacher training. Many universities in that country departments offer a wide range of professional and creative training programs for teachers, administrators and administrative staff [6].

In the age of digital media and personalized content, creative professionals need to master the latest media strategies, understand and harness the power of storytelling, align a compelling creative perspective with the brand's needs for communication, master digital marketing and social media strategy, use the action possibilities and master storytelling to use it [7]. These skills can prepare today's students to become a digital media, digital marketing and social media strategy professional. Communication cultures are university students or interdisciplinary researchers with a special knowledge of languages. This creates an environment in which different departments meet on topics relevant to their respective subjects [8].

In the process of vocational and communicative cultural education, the principles of education and individualization require consideration of the psychological and professional characteristics of the students. The professional teacher is responsible for the development of a professional communication culture in design and design culture [9]. In the context of a diverse society, there is a need for teachers in grammar schools and minority schools to master the contents of a diverse pupil education. Various research associations exist on the educational market that offer teachers with different groups of pupils many vocational learning opportunities. Culturally appealing teaching, also known as culturally relevant teaching, is a pedagogy that recognizes the importance of the cultural references of students in all aspects of learning [10].

In general terms, traditional teaching strategies emphasize the dynamics between teacher and student; teachers adhere strictly to a curriculum that supports standardized tests for student knowledge [11]. No one has students with the same background and experience, so the teaching is different. Teachers are experts, but they adhere strictly to the curriculum, which supports standardized testing as the only measure of the knowledge students receive. For teachers, it is not only important to give a high-quality lecture, but also to deal with difficult people. Students generally learn interpersonal skills in school, both as students and as teachers [12]. These skills are crucial for interacting with other people at the individual or group level, and there are many different types of interactions between students, teachers and other students. The concept of immediacy is the physical, emotional and psychological closeness that arises through the interaction between students, teachers and other students in a classroom or group of students and teachers. The pedagogical content of knowledge is a special combination of content and pedagogy, uniquely constructed by teachers, and thus represents the most important component of the teacher-student relationship in the development of interpersonal skills. It consists of an integrated knowledge that represents the wisdom accumulated, the knowledge of other people's experiences and the experiences of the teacher and the students [13, 14]. The development of the pedagogical content of knowledge is influenced by factors related to the personal background of the teacher. This includes the theory learned during the preparation of the teacher, the experience gained through ongoing school activities, and the context in which he or she works.

## **2 Historical challenges in education climate change issues**

Today's challenges in higher education should reflect the key issues of our time. It is important to give students the opportunity to make informed decisions about the future of their own lives and the society in which they live. To give a few examples of classroom activities, it is essential for teachers to design a curriculum that is coherent, reflects continuity, builds on students' ideas and experiences, and is guided by scientific consensus

[15]. The time needed to teach about global warming and climate change, as well as the curricula and educational policies associated with the subject, make this teaching even more difficult. However, we must recognise the impact of climate change and support teaching about it for the betterment of our students and the future of the planet. Studying programme should aim at helping people understand the effects of global warming today and improve climate literacy, especially among young people. In addition, they should aim to make climate education a central part of today's education system [16, 17].

Although the involvement of countries is crucial to solving these problems, we must call on all people and governments to recognize the seriousness of the threat of global warming and to develop effective strategies to reduce the potential consequences of global climate change [18]. World's superpowers like the United States should lead the developing world in promoting sustainable economic development in poor countries and in building global consensus on the need to mitigate climate change. If climate change undermines educational performance, it could have a worsening effect, exacerbating the direct effects of climate change over time. The measures we are taking today could make a significant difference to our descendants, and they could be measured by the impact on our children and grandchildren, as well as on other generations. Climate change and its effects on human health and human capital are associated with changes in utero and early childhood climate. We have to focus on climatic conditions during childhood and uterus, as they can negatively affect long-term human capital outcomes, including educational attainment and income [19].

The IPCC warns that to avoid a catastrophic global warming, we must achieve or exceed a minimum temperature increase of 2 degrees Celsius above pre-industrial levels by the end of the century, and this is concentrated in the tropics [20]. The longer we take, the more we will be dependent on costly technologies that could have a detrimental impact on human rights. For this reason, tackling climate change may well be one of the most pressing challenges of our time, even in the face of overwhelming scientific evidence, not only for the future, but also for our future. The planet's climate is changing, and it has become clear that humanity has caused most of the warming of the last century by releasing heat - the separation of gases commonly referred to as greenhouse gases into the force of modern life. However, the current warming phase is occurring faster than previous events [21].

Scepticism is a right-wing ideology that has joined the argument that it should not exist, because climate change requires coordinated collective action - the kind of ideology that is repugnant to that ideology. Carefully organized campaigns have used such scientific uncertainties to create political uncertainty, because those who fund the case against the reality of climate change have a massive interest in the fossil-fuel economy.

More insidiously, scepticism can also lead to the notion that it enables ordinary people to question the claims of the scientific elite. The belief that global warming is caused by human activity, that climate change is beginning to take effect and will soon pose a serious threat, has increased in recent years. Some studies conclude that more than 90 percent of the world's climate scientists actively publish believe that human activities contribute to rising global temperatures [22]. Although many people are sceptical of the arguments and evidence of climate scientists, the overall belief in a global warming in the twenty-first century has grown steadily in the recent years.

### **3 Building cultural relationship with the environment**

To promote environmental and climate awareness in the classroom, teachers must understand the individual students. This strategy will foster cultural awareness and strengthen students' sense of identity. To do this, the students must be introduced to each other, each individual must be included in the lessons and be taught what makes them unique [23].

To promote students' cultural awareness, we must take into account the various aspects of our culture that can influence the perception, attitudes and behaviours of the students. It is important to recognize the impact skin colour has on broader culture and how it can affect a student's perception of other students. Although ethnicity is sometimes used as a synonym for race, it can also be defined as a culture derived from a nationality. Personal identity is shaped by the lived experiences shared with people of their own culture during the development of an individual, as well as by the people and environment with which they interact throughout their lives. Questions related to identity development, which are important in psychology, sociology and anthropology, are central to our understanding of who we are. When personal identity emerges, our study of the various forms of human behaviour can be improved by identifying the social processes that influence identity formation and the ethical principles that underlie individual action. Given the importance of education for identity development and the role of teachers in this process, students must be aware of their own school experience and their relationship with the environment. The goal of school psychology is to work with parents, teachers and students to promote healthy learning environments that focus on the needs of children. Psychology includes the term "procedural memory" as a synonym for implicit memory [24, 25].

The High School Personality Questionnaire deals with the relationship between the teacher's personality and the behaviour of his students in the classroom. It is important that teachers are aware of the impact of evaluations and increased accountability, which help to create a more progressive educational environment [26]. People with different cultural traditions may have an educational approach that differs from the mainstream approach of schools. Although the education of pupils is the main objective of schools, teachers have different ways of achieving this goal. For example, there are differences between the traditional approach of the Catholic Church and the modern approach, according to which younger children are generally taught by older children and not by adults. This is a different approach to what might be considered when a Polynesian student attends an American school. For this reason, a school's subculture is different from that of the classroom, where colleagues are not allowed to share a teacher's preferences. Culture has a crucial impact on educators in the field of teaching, as student bodies in many developed are going to be overwhelmingly non-white within a couple of decades [27].

Teachers cannot control what students are exposed to outside school, and they cannot control what students see in the media. They can promote effective communication by creating a classroom that fosters a positive relationship between students and their teachers and the environment around them [28]. If we create such an environment, teachers will find that they are less likely to engage in class discipline and to spend more time teaching and learning to students. It is important that teachers first explain to their students what discrimination and insensitive behaviour looks like. By creating a classroom atmosphere that encourages conversations about diversity and enforces a zero-tolerance policy for negative language, teachers can teach their students to respect differences. Next, they must develop, explain, and implement strategies that leave room for insensitivity.

## **4 Professional development in education for sustainable development**

While the participation of principals in workshops based on school materials can theoretically address the problems of teaching sustainable development and environmental awareness, a culture change is needed. Teachers who feel intimidated are vulnerable, especially in environments where leaders do not normally teach, and there is therefore a need for professional development of teachers and leaders in the context of sustainable

development [29, 30]. An important message is that we need time to focus on effective teaching and develop a shared responsibility.

School programme represent a response to the government-funded framework which sets out sustainable development opportunities for teachers, school leaders and teacher leaders as part of a wider strategy to preserve development opportunities. It provides opportunities to alleviate the challenges facing the education system in terms of the development of teachers, principals and the leadership of teachers in the education sector. The vocational development programmes and educational materials provide groups, educators and young people with the skills to understand the relationships necessary for sustainability and to find integrated solutions to environmental challenges. The overall objective is to improve the number and quality of teachers in the education sector and their skills [31]. This objective is to be achieved by improving and facilitating school relationships and cooperation between communities, using sustainability as an inclusive force and encouraging schools themselves to become learning communities. Training programs for professionals, including professional development for university teachers and lecturers are needed. This also serves as a resource for organisations, institutions and individuals worldwide that are involved in sustainability education initiatives [32].

As it has been noted, there is a need for a new generation of managers dedicated to training future managers to tackle complex social issues and manage sensitive environmental resources. Since the mid-1990s, a number of researchers and leaders have proposed assessing how environmental education affects teacher training. While the lens of sustainability encourages us to look at innovation within tradition, the learning processes that typically underpin teachers' professional development are paradoxical to the goal we are striving for. This does not mean that there is a lack of knowledge about the development of the teaching profession. It is an opportunity to highlight innovative programmes, as we strive to contribute innovation to teachers' professional learning. Learning can be combined with the transformative power of nature and sustainable learning to make a meaningful contribution to a more sustainable future. There are many teacher trainings programs that provide teachers and school districts with comprehensive support in implementing a sustainable learning approach to teacher development in education for sustainable development [33, 34].

To illustrate the work and transformation approach that is based on the learning process outlined by UNESCO, one can recall the existing programmes that have shown lasting positive changes and results in the form of places of learning and sustainable education. In general, teacher training requires teachers to learn in school with their peers. It also describes the active learning methods that can be used for the professional development of teachers, thus offering teachers opportunities to improve themselves. The native language of the course is also used as a learning material for the professional development of the teacher [35].

Although the time for professional learning is short, not focused and disordered, teachers can receive a great deal of help in developing these activities with sufficient time, which is important for their professional development. To encourage teachers to change their classroom habits, school leaders should allow sufficient time during the school year for teachers to develop their careers.

## 5 Conclusions

Our paper provided an insight into what works for teachers in the context of environmental education and built upon the research on the impact of environmental education on teacher training in sustainability education. When it comes to incorporating sustainable development into the curriculum, higher education has focused on education, which aims to develop specific knowledge and competence for, for example, the climate crisis and renewable energy, and to develop skills for autonomous, responsible and reflective

citizens. Nevertheless, the goal must be to develop skills for sustainable development that combine international and high education in order to move closer to what some scientists call “local citizenship”, which actually means that education that is globally engaged and locally integrated. To achieve the Sustainable Development Goal 4.7, we need an understanding of what is needed to achieve it and how we will train and train. It is clear that global citizenship requires ethical, responsible, and open teachers and students to become responsible citizens of their countries and the world as a whole. In the face of the ongoing crisis of climate change and its impact on the global economy, it is essential that education provides young people with a source of hope and that they envision and implement a more sustainable future by developing the values, knowledge and skills to do so.

We can conclude this article by stating that a central objective of the strategy aiming at developing of teachers’ professional skills in education for sustainable development is to design an educational system for sustainable development based on the principle of life-long learning. The main themes of the strategy are the importance of education as a means of social and economic development and the promotion of sustainable livelihoods.

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