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Innovations in education: High demand, low efficiency?

The rate and the scope of changes in education are reasons to take up the subject of innovation, which is more marked in the outside environment than within school walls. This indicates the problem of a mismatch between the skills attained within the educational system and employers' needs. OECD experts see a solution to this problem in creating an innovative environment at school and justifying the central place of innovation in political and educational debates. The assessment of conditions that have built up the existing demand for innovation has become a basis for viewing innovation in education as a scientific category, including the distinction between innovation and change. The analysis of definitions was made here through the prism of utility and relevance to school reality. The analyses carried out in the article answer the question of whether we are dealing with an excess or a lack of innovation within school reality.

Keywords: change, effectiveness of education, ICT, innovation, innovation in education

Innowacje w edukacji: Wysokie zapotrzebowanie, niska skuteczność?

Przyczyną do podjęcia tematu innowacji w edukacji jest tempo i zakres zmian, który silniej zaznacza się w otoczeniu szkoły niż w jej murach. Zwraca to uwagę na problem niedopasowania umiejętności wynoszonych z systemu edukacji wobec potrzeb przedsiębiorców. Eksperci OECD rozwiązanie tego problemu widzą w tworzeniu w szkole środowiska innowacyjnego i uzasadniają centralne miejsce innowacji w debatach polityczno-oświatowych. Ocena uwarunkowań, które zbudowały istniejące zapotrzebowanie na innowacje stała się podstawą do oglądu innowacji w edukacji jako kategorii naukowej, w tym rozróżnienia innowacji i zmiany w edukacji. Analize ujęć definicyjnych dokonano tu przez pryzmat jednej z podstawowych jej cech – użytecz-

ności i odniesiono do rzeczywistości szkolnej. Przeprowadzone w artykule analizy prowadzą do odpowiedzi na pytanie, czy w szkolnej rzeczywistości mamy do czynienia z nadmiarem czy brakiem innowacji?

Słowa kluczowe: zmiana, efektywność edukacji, TIK, innowacja, innowacja w edukacji

References

Dudzikowa M. (2001). *Mit o szkole jako miejscu wszechstronnego rozwoju ucznia. Eseje etnopedagogiczne*. Kraków: Impuls.

Fullan M. (1993). *Change Forces: Probing the Depths of Educational Reform*. London: Falmer Press.

Fullan M., Hargreaves A. (2016). *Bringing the profession back in: Call to action*, Oxford, OH: Learning Forward.

Fullan M., Quinn J. (2016). *Coherence: The right drivers in action for schools, districts, and systems*. Corwin Press: Thousand Oaks, CA.

King N., Anderson N. (2002). *Managing Innovation and Change: A Critical Guide for Organizations*. London: Thompson.

Główny Urząd Statystyczny. (2017). *Społeczeństwo informacyjne w Polsce. Wyniki badań statystycznych z lat 2013–2017*. Szczecin: Urząd Statystyczny w Szczecinie.

Kirkland K., Sutch D. (2009). *Overcoming the barriers to educational innovation*. Bristol: Futurelab.

Kostoff R.N. (2003). Stimulating innovation. In: L.V. Shavinina (ed.), *The International Handbook on Innovation*. Oxford UK: Pergamon.

Kupisiewicz C. (1995) *Szkolnictwo w procesie przebudowy*. Warszawa: Wydawnictwo Żak.

Licht A.H., Tasiopoulou E., Wastiau P. (2017). *Open Book of Educational Innovation*. Brussels: European Schoolnet.

Looney J.W. (2009). Assessment and Innovation in Education. *OECD Education Working Papers*, No. 24. OECD Publishing.

Łabuda J. (2015). *Felieton Jurka Łabudy: Przyrost wiedzy*, „Komputer Świat". Zaczerpnięte 15 września 2018. Strona internetowa https://www.komputerswiat.pl/artykuly/redakcyjne/felieton-jurka-labudy-przyrost-wiedzy/xp4nltv

Mitchell J.M. (2003). *Emerging Futures: Innovation in Teaching and Learning in VET*. Melbourne: Australian National Training Authority (ANTA).

Nietzsche F. (1999). *To rzekł Zaratustra*. Przeł. S. Lisiecka i Z. Jaskuła. Warszawa: Państwowy Instytut Wydawniczy.

OECD (2016). *Innovating Education and Educating for Innovation: The Power of Digital Technologies and Skills*. Paris: OECD Publishing.

OECD (2013). *The Teaching and Learning International Survey* (*TALIS)*. Paris.

OECD/Eurostat (2008). *Podręcznik Oslo. Zasady gromadzenia i interpretacji danych dotyczących innowacji*, Wyd. 3. Warszawa: Ministerstwo Nauki i Szkolnictwa Wyższego, Departament Strategii i Rozwoju Nauki.

Przyborowska B. (2013). *Pedagogika innowacyjności. Między teorią a praktyką*. Toruń: Wydawnictwo Uniwersytetu Mikołaja Kopernika.

Redding S., Twyman J.S., Murphy M. (2013). *What is an innovation in learning?*. In: M. Murphy, S. Redding (eds.), *Handbook on innovations in learning*. Center on Innovations in Learning, Temple University. Philadelphia: Charlotte, Information Age Publishing.

Schleicher A. (2004). *Das Humankapital*. In: R. Kahl (hrsg.), *Treibhäuser der Zukunft*. Archiv der Zukunft.

Schumpeter J.A. (1942). *Capitalism, Socialism and Democracy*. London and New York: Routledge.

Schumpeter J.A. (1960). *Teoria rozwoju gospodarczego*. Warszawa: Państwowe Wydawnictwa Naukowe.

Schumpeter J.A. (1912). *Theorie der wirtschaftlichen Entwicklung*. Leipzig: Duncker & Humblot.

Śliwerski B. (2008). Oświatowy remanent, czyli o ideologicznym majsterkowaniu polityków oświatowych w latach 1989-2006. In: M. Dudzikowa, M. Czerepaniak-Walczak (red.), *Wychowanie. Pojęcia – Procesy – Konteksty*, 4. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.

Yashin-Shaw I. (2016). 3 *Leading in the Innovation Age: Unleash knowledge, talent and experience to create an innovative workplace*. BookPod.

Introduction

The pace of changes we experience in everyday life prompts us to adopt Alan Moore's metaphor of the *Culture of Steam*,[1] which is not about steam engines, but the nature of our civilisation, culture, institutions, and symbols that have become similar to steam: dynamic, changeable, elusive, and hot. 'Fixed role models, established institutions, authorities, and the established hierarchy no longer work. Ideas, revolutions, values — they appear, explode and ... disappear, like hallucinations. It is a time of risk and uncertainty, but also of freedom and opportunity' (Moore as cited in Łabuda, 2015). In 1995, Czesław Kupisiewicz wrote 'humans have found themselves under pressure from a rapidly growing number of messages' (p. 12). As a result of the technological revolution, some twenty years after his voicing of this concern, we are all in personal touch with this phenomenon.

The increase of knowledge draws our attention to the potential and span of the change. However, despite the onslaught of information, knowledge has maintained its strong position. It is 'around the inventors of new values that the world revolves, revolves invisibly' (Nietzsche, 1999, p. 66). According to Alvin Toffler, the winner will be the one who has access to information and the ability to process and use it. One can even say that knowledge has become the most important value of modern civilisation. Advantage in the world will be gained not by those who are able to produce, but by those who are able to invent new products and benefit from knowledge. This in turn, draws our attention to the potential of innovation, which, based on knowledge, is able to transform the world. The emphasis on 'discovering what is possible' reflects the transition from the age of *information* to the age of *innovation*. These are exciting times, characterised by rapid change and interdisciplinary cooperation, in which new ideas break through the value of knowledge and become the most valuable commodities.

Innovations are, or at least should be, largely developed through education. The intense pressure to create an innovative environment in schools prompts us to take a closer look at this phenomenon, and such is the purpose of this article. To this end, we will scrutinise the present demand for innovation in education and prop our scrutiny on foundations constructed from definitions, including the distinction between innovation and change. Joseph Schumpeter's assumption that one basic feature of innovation is functionality has been adopted to refer to schools. Such targeted analyses have led to answers to the question, 'Are we dealing with an excess or a lack of innovation in schools?'

[1] Allan Moore mentions three eras: ice (a rigid patriarchal system), water (fluid reality, the transformation started in the 1960s), and steam (a structure in which old and permanent institutions will disappear, and the pace and intensity of change will assume a new, intense dimension).

Demand for innovation in education

If we look at school through the prism of Jack Welch's formulation, which maintains that the end is near, the moment the pace of external change in an organisation exceeds the pace of the change at its core (Welch as cited in Yashin-Shaw, 2016), educational institutions which are far behind the external world will come to light. This was aptly formulated by Andreas Schleicher, who says that in the-day-before-yesterday's schools, yesterday's teachers teach today's pupils to solve tomorrow's problems (2004, p. 95). The striking incompatibility of schools becomes apparent when we realise that they still have much in common with the classroom system of the nineteenth century and with teacher training developed in the twentieth century, but they aspire to provide pupils with a productive life in the future and to solve tomorrow's problems. 'The problem of the mismatch of skills derived from the educational system to the needs of entrepreneurs is visible in research on the labour market and the fate of university graduates' (Przyborowska, 2013, p. 16). This draws attention to the scale of the initiatives necessary to solve problems and answer questions, such as the following: 'Which competences do pupils need in the 21st century? What teaching and learning processes are able to develop and nurture them, and which assessment models can significantly strengthen them and monitor their acquisition of these competences? How can pupils be involved in learning outside of school? What should school's role be now and what sort of social organisation should it adopt? How can policies and practices be created to support changes in values, patterns, roles, methods, and practices introduced by the Third Digital Revolution and its penetration into education? How do we best use new technologies to support education in meeting all of these challenges?' Once we have answered these questions, there remains the last one: 'What is the role of head teachers and teachers in this new educational environment?'

This small group of questions draws our attention to the need to strengthen new solutions which have not been previously practised in the school environment but will help revitalise the economy. A change of the paradigm is suggested, which would be interpreted as 'moving away from a system focused on providing knowledge towards a system that provides skills, attitudes, and knowledge' (Ibid). The change would be to free up new opportunities in various areas and at different levels of the educational system, so that it would adhere to the cycle of the external world. Such a demand to change education views innovation and creativity as an inevitable cure-all.

OECD experts believe that the tendency to practice innovation in education is rooted in four main sources:

- social and economic pressure to improve pupils' achievement;
- changes that have taken place in the work environment and social and family life;
- rapidly developing technologies; and
- the need to motivate and engage pupils in order to enhance the effectiveness of the teaching process (Looney, 2009, pp. 4–5).

As a result, the pressure exerted on schools is meant to help develop innovative educational environments adequate to the specific context in which they operate. It is worth noting that nowadays, few categories are assigned such significance as innovation. In the policy of the European Union and its priorities, the importance

of innovation for development has been clearly emphasised for years in various documents (Przyborowska, 2013, p. 17), within such initiatives as *Horizon 2020,* i.e. the world's largest multinational research programme. This is all undertaken to keep Europe at the forefront of innovation worldwide.

According to Joseph Schumpeter, who in 1911 first introduced the concept of *innovation* to the economic sciences, in the classic approach it denotes 'creative destruction'. In other words, 'the destruction of the old system and the implementation of a new one' (Schumpeter, 1912; 1942; 1960). The essence of innovation is reduced to breaking away from routines and developing more effective (and cheaper) processes (of production). These early considerations within economic sciences opened the field for defining *innovation* as:

- creating new goods;
- using new or previously unused production methods;
- conquering new markets, whether they existed before or not;
- acquiring new sources of raw materials or semi-finished products; and
- introducing a new organisation of production (Schumpeter, 1960, pp. 99-101).

Today, in the interpretation of innovation data, the authors of the *Oslo Manual* adopt four types of innovations that cover a wide range of changes in the activity of companies/organisations, i.e. product innovations, process innovations, organisational innovations, and marketing innovations (OECD/Eurostat, 2008, p. 19). This understanding of *innovation* adopted by the OECD is widely used in the private sector, but they believe that with minor modifications it can also be adopted to describe education (Ibid). Educational organisations, such as schools, universities, and training centres, can introduce

- new products and services, such as new curricula, textbooks, or educational resources;
- new processes, such as the use of Information and Communication Technologies (ICT)[2] in e-learning services;
- new ways of organising activities, such as using ICT to communicate with pupils and parents; and
- new marketing techniques, such as differentiated prices of post-graduate courses. These new practices aim to improve education in one way or another and should therefore be considered an improvement.

Educational innovations generally fall under these categories and include a new or significantly improved approach to classroom teaching, learning and assessment, as well as changes in the organisation or management of the school as a system. A common approach to teaching and learning is described as 'pupil-centred' or 'constructivist'. It exhibits the development of thinking and 'learning' skills and the synthesis of knowledge from the entire curriculum (OECD, 2013).

[2] ICT is a term which covers technologies that process, collect, or transmit information in electronic form, as cited in: *Społeczeństwo informacyjne w Polsce. Wyniki badań statystycznych z lat 2013–2017*, Główny Urząd Statystyczny i Urząd Statystyczny w Szczecinie, Szczecin 2017, p. 11.

Innovations in education — On definitions

What is innovation in education? The answer may or may not be obvious, depending on who we ask. Teachers are aware that they practice it. For them, innovation at school is ubiquitous in their school, specifically in their classroom. If teachers are asked whether they use innovation, they will answer a clear 'yes', whether they are able to name some areas and they easily do so. They do not even have a problem explaining what innovation is. For them, it comprises all of the new aspects in their immediate school environment that they believe they introduce.[3] In this sense, *innovation* is basically whatever change has been, is being, or will be introduced. One might get the impression that in schools there is a real drive towards innovation, and that schools themselves are passionate about its intensity. Every little discovery and change is by definition an innovation. The personal aspect and meaning of any change is crucial here. However, are we clear about the nature of the concept before we take a closer look at its definitions?

Creativity, initiative, unconventionality, alteration, ingenuity, and inventiveness, i.e. terms which in the colloquial sense clearly lead to progress and activity of its implementation in everyday life, are all more or less synonymous with the concept of *innovation*. Its practical application, as pointed out by Schumpeter, has been a key aspect when identifying innovation. This clearly distinguishes it from invention, because not every invention may become innovation, but only those that find their application in everyday life. Nowadays, the understanding of 'creative destruction' has been improved. Innovation is an application of an idea or invention adapted or refined for specific purposes or in specific contexts (Redding et al., 2013, p. 6). Researchers also note that the implementation of innovation occurs over time as it is adapted to the context (Przyborowska, 2013). As a result, it replaces a standard product, a programme, a practice, or a process with something better, and because it is predominately accepted, it becomes the new standard.

Innovation in education / Innovation in learning occurs in the specific context of the teaching and learning processes, improving standard practices or introducing new ones, thanks to which pupils (schools) accomplish more and improve their learning efficiency (Redding et al., 2013). The need for improvement, as demonstrated by Kieron Kirkland and Dan Sutch (2009, p. 10), stems from characteristics which states that 'innovation is the use of a new resource or approach that changes social practice by creating a certain value'. This means that a new achievement is better or more effective than a previous one (Licht et al., 2017, p. 15). In relation to school, this better or more effective achievement must be related to the improvement of pupils' school accomplishments, which is a non-negotiable condition indicated by OECD experts when referring to innovation in education. Adopting the condition of improving school accomplishments can be read as a reference to Schumpeter's application of a given solution (product/invention) in practice, in this case in educational practice, in line with the mission of schooling and with the meaning of education.

[3] The study was based on a diagnostic survey conducted on a group of school and preschool teachers as part of postgraduate studies at the University of Zielona Góra from 2015 to 2017 (a targeted selection).

Table 1
Features of innovation according to selected authors

E.M. Rogers	R. Schulz	A. Suchanek
· relative benefit · coordination · complexity of application	· scientific status of innovation · cost · usefulness · complexity · radicality · compatibility · divisibility · transferability	· significance · usefulness · application

Source: compliation I. Nowosad, based on: B. Przyborowska (2013), *Pedagogika innowacyjności. Między teorią a praktyką.* Toruń: Wydawnictwo Uniwersytetu Mikołaja Kopernika, pp. 59–61.

The application of innovation in practice is clearly visible in the list of three selected approaches to its features (Table 1). The authors of these approaches point to the practical dimension of innovation. And this is either 'a relative advantage', i.e. a degree of superiority over the element that is to be overtaken, or 'utility' — satisfying specific needs or values — although also visible in 'transferability', understood as a degree of a given innovation's penetration into the community, or also 'usefulness' — increasing efficiency and 'application', i.e. introduction into usage (Przyborowska, 2013, pp. 59–61). Therefore, it cannot just be any changes introduced by teachers. It cannot even be changes that improve their functioning at school, but only those which translate into improved pupils' achievements, which make it possible for them to transcend themselves and contribute to their future.

We can also interpret innovations such as 'increasing the adaptability of the educational system' (Przyborowska, 2013, p. 58). In this case, the category of the change is an important aspect that should be considered, and any lack of equality between innovation and change should be demonstrated. Although every innovation is a change, not every change is an innovation. In the multilateral and multifaceted transformations that take place in institutional educational practice, it is possible to find many types of changes. Undeniably, intentional changes introduced into school practice can initiate the process of modernisation and introduce innovations, although there is a danger of changes 'which will not cover the foundations of the system and the interpretative schemes will remain out of their reach' or will prove to be 'regressive, understood as regression in the educational system back to solutions from the past (functioning or outdated), as well as adaptive changes …, in which new solutions are added to old solutions or certain old structures are replaced with new,

modified solutions' (Śliwerski, 2008, p. 110). These changes can be considered superficial, in which 'school or education is changed for the sole reason of not letting anything of real significance change' (ibid., 2008, p. 111).

If we adopt Schumpeter's interpretation, a fundamental difference between innovation and change emerges from rationality, reality, and the progressive nature of the former. Innovation in education is by definition supposed to contribute to pupils' achievements and improve the functioning of school (Fig. 1). Most of the literature on the subject defines innovation as implementation of not only new ideas, knowledge, and practices, but also of improved ideas, knowledge, and practices (Kostoff, 2003; Mitchell 2003). Innovation is therefore clearly different from changes that do not necessarily equate to the introduction of something new, nor do they imply the application of improved ideas or knowledge (King, Anderson, 2002). It can be assumed that ignoring this fact, simplification, or equal treatment of innovation and change will bring more harm to school than benefits.

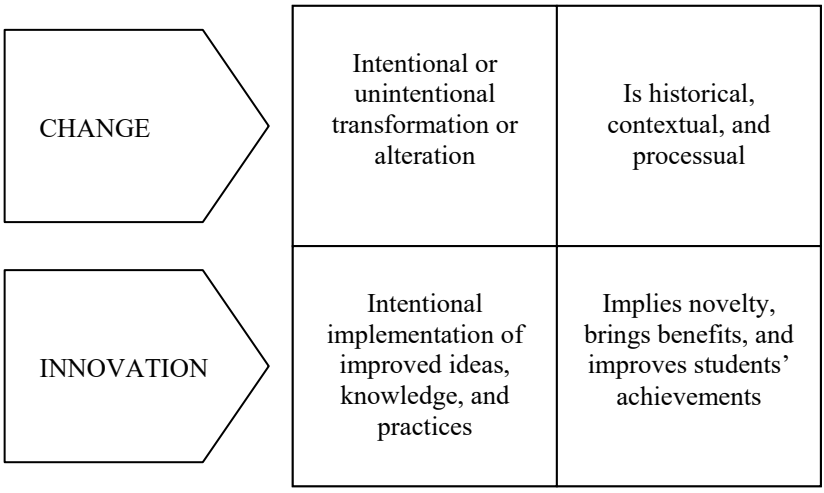

Figure 1. Differences in the interpretation of change and innovation in education
Source: Prepared by I. Nowosad, based on: OECD (2016). *Innovating Education and Education for Innovation: The Power of Digital Technologies and Skills*. Paris: OECD Publishing, s. 16.

The use of ICT in practising innovation at school

Undoubtedly, new technologies contribute to the growth of knowledge and the pace of change. For example, the Internet has not only accelerated the process of knowledge growth, but also changed the way people com-

municate. It has facilitated access to other cultures, turned the world into a global village, and information has become readily available, spreading at the speed of light. We certainly experience these effects in all spheres of everyday life, but do we experience them at school?

In 2012, the organisers of the PISA programme supervised by the OECD asked head teachers for their opinions on whether the effectiveness of the teaching and learning processes in their schools was hindered by scarce or inadequate laboratory equipment or teaching aids, as well as computers for learning, computer software and more. The responses were used to create a quality indicator of the educational resources in schools.[4] The resulting image is rather optimistic.

It turned out that in OECD countries in 2012 less than 10% of 15-year-old pupils attended schools whose head teachers considered the insufficiency of their own educational resources to be a serious impediment to achieving efficiency and improving achievements. Such a low rating is typical of Brazil, Greece, Indonesia, Mexico, Tunisia, and Turkey. Moreover, in 2012 schools seemed to be much better-equipped with resources such as computer hardware and software than in 2003, which is recognised as conducive to achieving high-quality education. This position was declared by head teachers from 26 out of 38 countries, expressing an assessment of obvious improvement (OECD, 2016, p. 69).

OECD experts have accepted that the primary indicator of the use of ICT devices at school is pupils' use of computers, especially if they use them regularly, at least once a week. In the 2012 PISA study, as in the 2009 PISA study, pupils were to demonstrate not only if and how often they used computers at school, but also what activities they engaged in when using them. The study distinguished 1) online chat; 2) use of e-mail; 3) browsing the Internet; 4) downloading, sending, or browsing materials from the school's website; 5) posting their work on the school's website; 6) simulation games; 7) refreshing exercises, e.g. when learning a foreign language or mathematics; 8) performing individual schoolwork; and 9) working in groups and communicating with other pupils (creating a social network to carry out educational tasks). In OECD countries, 72% of pupils on average reported using desktop computers, laptops, or tablets at school, although 93% use computers at home. School computers were most commonly used to browse the Internet, with an average of 42% of pupils doing it at least once a week. Simulation games were the least practised at schools, as only 11% of pupils from OECD countries declared taking part in this activity (2016, pp. 70–71).

The combined summary of all nine activities reveals an index of ICT use at school. The countries with the highest average values are Australia, Denmark, the Netherlands, and Norway. In contrast, pupils in Japan, South Korea, and Shanghai, China indicate a much lower level of computer use than their counterparts in other countries. However, it is worth bearing in mind (especially when assessing ICT resources in these countries) that one should not assume that ICT equipment is not used at all. For example, Shanghai pupils reported that they use computers in maths lessons more often than children in other OECD countries, and their teachers report that they make use of ICT in the classroom (e.g. multimedia boards). Similarly, the use of smartphones

[4] The indicator of the quality of school educational resources was derived from head teachers' perceptions of factors potentially hindering the teaching in their schools (SC14, from the 2012 PISA school questionnaire).

in schools was not included in the study, limiting the questions to using computers only. With such large differences in economic and technological development, comparing educational conditions favouring or not innovative in the use of ICT should be more carefully developed.

The overall increase in computer use can be seen as improving the quality of schools' ICT infrastructure, including the introduction of portable computers. Portable computers and tablets offer much more flexibility than desktop computers, and PISA data show that more and more schools are choosing mobile computers and other mobile devices (OECD, 2016, pp. 71–72). This change seems to be of great importance in the readiness of teachers to use computers in the organisation of their classes, as routines adopted by teachers play an important role in the outcome of the teaching process. However, simply equipping schools with ICT resources will not improve the quality of learning, but using these resources as part of good teaching practice can open new fields for pupils and teachers. It is surprising that although these devices are common in our everyday lives and available at school, in their everyday classroom practice, most teachers from different countries rarely use them (OECD, 2016, p. 73). This is predominately due to insufficiently flexible teacher training. However, at the end of the day, it will aid teachers who decide to unlock the technological potential in improving the effectiveness of education.

Despite the increasing investment in new technologies, the results of PISA and TALIS research show that in their didactic process, teachers fail to systematically use ICT tools. They most often believe that they are not sufficiently prepared to use these resources, and they regard this deficiency as one of most urgent needs in their professional development. On this basis, providing teachers with support to fill these gaps and encouraging the use of ICT tools in teaching should be a priority in both professional development and in the training of future teachers, which would contribute to increased innovation in education (OECD, 2016, pp. 73–74).

Despite the enormous potential of digitisation in supporting and strengthening the sciences, the impact of ICT on education itself seems negligible. The considerable investment in ICT in schools has not yet fulfilled the hopes of transforming educational practices, probably because the overarching focus on hardware and connectivity have stymied strategies to bolster teachers' ICT skills, improving their professional development and developing software and training materials relevant to such long-term goals.

Final remarks

The arguments OECD experts cited in the article justify the central place of innovation in political and educational debates. This is not surprising, because these activities express concern for the effectiveness and efficiency of education responding to the contemporary challenges of globalisation, which destroy the current vision of a well-organised world and direct attention to the requirement to take into account the dynamics and spontaneity of phenomena in the course of their recognition. Indeed, successful innovation depends on human creativity, knowledge, skills, and talents, which are largely developed through education — or at least they should be! So how can schools and teachers better cultivate these abilities? And, more importantly, how can

educational systems develop their own innovation capacity? The answers to these questions seem to be of utmost importance, but also constitute a substantial challenge in terms of their everyday classroom application.

Michael Fullan points out that the attempts to change and improve schools largely by restructuring teachers' attitudes instead of retraining their status, should turn schools into places that stimulate teachers in the art of practising innovation. Restructuring as an end in itself is a process that does not bring about changes or stimulate lasting improvement in the levels of pupils' achievements. The conclusions of the study confirm that restructuring did introduce changes in the participation of school entities, in management, and in other formal aspects of institutions, but in most cases it did not affect the teaching and learning core or teachers' professional classroom routines (Berends 1992 cf. Fullan 1993). A similar case befalls various resources, such as computers, whose arrival at school does not necessarily translate into didactic improvement. This attests to the specificity of changes at schools and to the need for redefining innovation in everyday educational practice. It is worth remembering that not every change is of significance for schools, nor is every change necessary. Fullan (2016; Fullan & Hargreaves, 2016; Fullan & Quinn, 2016) notes that we tend to react to many situations with attempts at reorganisation, and this is often just a great method of creating the illusion of progress. As a result, it leads to doubt and inefficiency, and it causes demoralisation among the teachers and a game of appearances, where novelties are thoughtlessly considered manifestations of innovation.

Without understanding the essence of innovation or change and the potential in the processes of intentional influencing and creating (processes of implementation of innovation and change management), teachers leave the effects of their work to the spontaneity of phenomena. As a result, they attribute the aura of the mythical 'weave of exceptional circumstances' to their successes or failures and do not undertake a thorough analysis of the existing conditions (Dudzikowa, 2001, pp. 13–22). It seems that in the area of institutional education, we have not moved away from the first era of knowledge and we have not yet entered the next era of innovation. A lack of scientific knowledge about innovation and change management can limit teachers' activities. This creates the need to take action in order to increase teachers' awareness of what innovation is, so that they can enjoy a real sense of performed duties (and practised innovation) and assess their effectiveness.