



CONSIDERATIONS ON ‘NEW’ WORK AND CHALLENGES FOR CAREER COUNSELLING

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Abstract. In this article, the author presents selected changes in the area of work, taking place as a result of the fourth industrial revolution; emphasizes the importance of modern technologies, including artificial intelligence, as well as the category of “new” work as the subject of research in modern work pedagogy. The text also focuses on the Chaos Theory of Careers as a challenge for career counselling – an important problem area of work pedagogy.

ROZWAŻANIA O ‘NOWEJ’ PRACY I WYZWANIACH DLA DORADZTWA ZAWODOWEGO

Słowa kluczowe: praca, rewolucja przemysłowa 4.0, doradztwo zawodowe, kariera, teoria chaosu karier

Streszczenie. W artykule autorka przedstawia wybrane zmiany w obszarze pracy, zachodzące w wyniku czwartej rewolucji przemysłowej; podkreśla znaczenie nowoczesnych technologii, w tym sztucznej inteligencji, a także kategorię ‘nowej’ pracy jako przedmiotu badań współczesnej pedagogiki pracy. W tekście skupiono się również na Teorii Chaosu Karier jako wyzwaniu dla doradztwa zawodowego – ważnego obszaru problemowego pedagogiki pracy.

*For beauty is meant to enchant,
to work – labour, to rise again.*

Cyprian Kamil Norwid, *Promethidion*

Introduction

In the dynamically changing reality, Zygmunt Wiatrowski's words remain relevant: "Human work and qualifications will continue to hold the greatest significance, although the basic categories of work pedagogy will acquire a somewhat modified interpretation. The enduring value for *work pedagogy* lies in the actual and effective work of human beings, particularly in qualified work that requires a high level of competence and professional responsibility. However, the variable value lies in the situational interpretation of such work" (1994, pp. 9-10).

Given the constant societal changes and in light of the 50th anniversary of work pedagogy, it is worth considering the current challenges facing this sub-discipline. Some of these challenges are the subject of the following reflections.

The 'New' Work as an Object of Study in the Pedagogy of Work

According to the subject of work pedagogy research, the aim is to educate and prepare individuals for professional work. From this perspective, humans can be seen as situated in a world of values, including as working individuals. The mission of contemporary work pedagogy, as stated by Waldemar Furmanek, primarily involves supporting the development of all dimensions of the individual while also preventing difficulties that may arise due to dynamically changing life and work conditions (2012, p. 129).

Work has evolved throughout the centuries. Researchers now often write about the so-called 'new' work, as the end of the first decade of the 21st century has witnessed the development of the *fourth industrial revolution*, which is based on the integration of humans and machines. The use of automation and robots is becoming increasingly common, with computer systems controlling production processes. In the face of rapid changes in the content and forms of work, the critical factor is the knowledge capital, skills, and social competencies of workers, as well as high expectations, particularly for those directly involved in implementing new technological solutions. It is important to be aware that in the case of the fourth industrial revolution, all employees directly employed

in production and services, as well as those responsible for the broad organization of work, should be creative and innovative (Kwiatkowski, 2020, pp. 22-24).

A new stage in economic development is based on a ground-breaking invention – *artificial intelligence*. This concept refers to the field of study that deals with creating machines equipped with selected characteristics of the human mind, such as language understanding, image recognition, problem-solving, and learning abilities (*Artificial Intelligence*, 2021). Humans, in their quest to create intelligent structures, design solutions that closely resemble human thinking and behaviour. The goal is to develop solutions that behave like humans, including:

- “Natural language processing: reception, interpretation, and formulation of both audio and text-based expressions.
- Knowledge representation: the ability to gather acquired information and generated knowledge.
- Automated reasoning: identifying patterns in recorded information, utilizing accumulated knowledge to answer questions and generate new insights.
- Machine learning: learning from their own experiences and adapting to new conditions.
- Image analysis: recognizing and identifying the location of objects.
- Physical object manipulation” (Tomaszewska, 2021a, pp. 71-73; Wodecki, 2018, pp. 68-70).

The aforementioned areas of competence of intelligent systems form the foundation of contemporary artificial intelligence methods and technologies. Increasingly, machines constructed by engineers possess capabilities surpassing those of humans (Tomaszewska, 2021a, p. 73; Wodecki, 2018, p. 70).

Progress in this indicated scope not only changes the way work and organizations function in the economic history of the world but also transforms all aspects of human life.

This direction of technological progress, as highlighted in the article, has significant implications for *education*, *upbringing*, and *work*, making it a particular subject of interest for work pedagogy. Given the changing reality, especially in the areas of individual functioning, organization, mechanization, and digitization of life, there is a need to ‘rediscover’ work as the subject of work pedagogy research and explore the contexts in which it is performed (Pietrulewicz, 2017).

When writing about work today, it seems appropriate to use the term ‘new work.’ ‘New’ in terms of the essence of globally occurring changes, such as the emergence of a globalized world of work and a hyper-connected

workforce, the rise of the gig economy, the development of artificial intelligence and machine learning, and changes in the time and space of work execution. The global Sars-CoV-2 pandemic has further accelerated the development of employment-related phenomena that have resulted in work increasingly being characterized by instability and discontinuity (e.g., remote work). These are just a few examples of the numerous transformations taking place. Therefore, it is fitting to write about the 'new' work and, consequently, the 'new' subject of work pedagogy research (Gerlach, Tomaszewska, 2021).

One manifestation of the 'new' work is the 'new' spatiotemporal dimension described in the literature by Renata Tomaszewska:

1. Work is a type of human activity that has traditionally taken place in physical *spaces* with defined boundaries and has been interpreted as the location of its performance. Work is also a socially constructed concept that shapes and reconstructs the identity of individuals and social groups. However, the social and psychological space of work does not necessarily have to be tied to physical space, i.e., the place of work (Rychlicka-Marszałek, 2016, pp. 7-8). Changes driven by the development of information and communication technologies result in the relaxation of the principles of physical presence at the workplace through the establishment of new, dispersed networks of teams and branches, the introduction of remote work, and the development of virtual forms of modern organizations (Tomaszewska, 2020a, pp. 51-53).
2. As a result of the development of flexible forms of employment and organization of *working time*, work has become dispersed in both time and space (Tomaszewska-Lipiec, 2015, p. 49; Frese, 2003). The significance of time and place in work provision diminishes (Morawski, 2003, p. 17). Consequently, we can increasingly work wherever and whenever we choose.

With great conviction, it can be stated that the essence and the previous mode of work execution are undergoing complete transformations. In the face of these merely indicated changes, there is a threat of objectification of the human being that may occur in the processes of 'new' work. Creating a sense of subjectivity in the context of professional work is therefore an essential task of education, including work-oriented education. Undoubtedly, the disruptions in the sphere of work are reflected in the educational needs of the new generations. Young people want to work in a completely different way than before. Therefore, they must be prepared for professional functioning in the conditions of the fourth

industrial revolution characterized by the presence of artificial intelligence and a different ‘spatiotemporal’ dimension of work (Tomaszewska, 2021b, p. 197).

Work pedagogy, including one of its foundations – the idea of *work-oriented education* – cannot remain indifferent to the ongoing civilizational changes, especially those in the realm of employment. The aforementioned transformations of human work inspire a broad scientific reflection on preparing individuals for work, for the ‘new’ work, and for functioning in the conditions of the 4.0 economy (Tomaszewska, 2021b, p. 200; Skrzypniak, 2010, p. 301). Above all, it is necessary to raise awareness among the subjects of education/work about the indicated phenomena, including the relationship between ‘new’ work and the working individual (Kubiak-Szymborska, 2017, p. 179). In the context of the mentioned technological progress, it is also important to prepare individuals to function in the so-called *tech-life harmony model*, where we divide our time and energy between innovative technology and family life and personal time (Tomaszewska, 2020a, p. 53; Gajdzik, 2018, pp. 2-3, 10).

Given the breakthrough transformations in work associated with this process, the challenges for work pedagogy, education, and work preparation should be seen as an urgent need. As rightly pointed out by the education theorist Ewa Kubiak-Szymborska, “the education of contemporary individuals is linked to their activity, including professional activity, which involves coping with an increasingly complex labour market through making educational and vocational decisions and building a career” (2017, p. 164). Importantly, in the world of ‘new’ work, we are dealing with ‘new careers.’ Other concepts and paths of career development are increasingly functioning, taking into account online work and project-based criteria (Tomaszewska, 2020b, p. 13). In the field of career issues, categories such as individualism, reflexivity, and consumptiveness must also be considered. The ideology of individualism, as a logical complement to the pluralization of lifestyles in the postmodern vision of the world, among other phenomena, can be seen as the background for transformations in career patterns (Solarczyk-Ambrozik, 2015, p. 22; Marody, 2014, pp. 160-161), for which changes in the realm of work play a fundamental role. They imply fundamental shifts in the course of careers, their theoretical explications, as well as social experiences directed at addressing the problems that arise in this field (Solarczyk-Ambrozik, 2015, p. 2).

The outlined issues of ‘new’ work, as well as the mentioned ‘new’ careers, pose a challenge for work pedagogy, including one of the problem areas of this sub-discipline – vocational guidance.

'The Chaos Theory of Careers' and its significance for the issues of work pedagogy and career counselling

The legal regulation of *vocational guidance* is found in the Act on the Education System, which ensures the preparation of students for choosing a profession and an educational path (Law, 1991, Article 1). One of the leading forms of educational activities defined in this Act is the provision of psychological and pedagogical assistance, including vocational guidance (Law, 2016, Article 109, paragraph 1, points 5 and 7). Vocational guidance activities are carried out in the seventh and eighth grades of primary school, in the first-degree vocational school, general high school, and technical high school, in addition to activities in the field of psychological and pedagogical assistance in choosing an educational path and profession (Law, 2016, Article 109, paragraph 2a, points 6 and 7). The details of these activities are specified in the regulation on vocational guidance, which indicates the program content and its implementation. The program content is prepared for a specific stage of education and includes the following thematic blocks:

- Discovering one's own resources.
- The world of professions and the labour market
- The educational market and lifelong learning
- Planning personal development and making educational and vocational decisions (Regulation, 2019, § 1)

Each of these thematic blocks is equally important as they form a cohesive whole in the process of preparation for work. However, due to the chosen topic, the author will focus more attention on those directly related to work.

The first educational and vocational choices are made by students completing primary school, where they choose a profession – in the case of vocational schools or technical high schools – or decide to specialize in certain subjects in high school. As part of the exploration of their own resources, the curriculum includes topics related to interests, competencies, vocational predispositions, and recognizing one's own abilities and limitations in performing professional tasks. Topics related to the educational market focus, for example, on analysing the educational offerings of post-primary schools and higher education institutions in terms of further educational opportunities, as well as emphasizing the importance of lifelong learning. In accordance with the provisions within the domain of the world of professions and the labour market, students, among

other things: search for information about occupations, describe selected professions, understand the requirements and trends of the contemporary labour market, and employers' expectations, justify the importance of work in a person's life and the possibilities of experiencing it, and identify values associated with work (Regulation, 2019, Annex 3, points 1, 2, 3).

The second important decision occurs at the threshold of early adulthood, upon completion of post-primary school, and it involves choosing further education or preparing to enter the labour market, i.e., finding employment. One way to explore one's own resources is by creating a portfolio and identifying one's own value system, including values related to work. The section regarding the educational market defines issues related to seeking new professional qualifications, vocational education, and professional development. The program content within the scope of the world of professions and the labour market is extensive. According to these guidelines, students:

- Analyse information about the local, regional, national, and European labour markets and the prevailing rules therein.
- Determine occupations and job positions based on their qualifications, taking into account future professions and the labour market demand.
- Compare employment forms and opportunities for career mobility as an employee, employer, or self-employed person.
- Analyse labour law provisions, including types of employment contracts, methods of termination, and rights and obligations of employees.
- Compare their own resources with identified employer needs and labour market requirements (Regulation, 2019, Annex 4, point 2; Annex 5, point 2; Annex 6, point 2).

Pursuant to the education law, young individuals are guaranteed certain preparations before becoming active participants in the labour market/'new' work. They should acquire knowledge about changes occurring in the labour market, including modern technologies, as well as changes in the content and form of work, flexible forms of employment, and employer requirements, including qualifications and competencies sought in job candidates. This is crucial because the labour market in the digital transformation era is shaped by processes of automation and platformization, and there is a demand for employees with advanced skills that differentiate human work from the work of IT systems and artificial intelligence (Tomaszewska, 2020b, p. 310), individuals who possess the ability to work as part of a virtual team (Gerlach, 2017, p. 122). Students also receive support in setting goals and developing educational and vocational

plans at the primary school level, and in creating an individual action plan at the post-primary school level, which involves planning various educational and vocational pathways based on information about the labour market (Regulation, MEN, 12.02.2019, Annex 4, point 4; Annex 5, point 4; Annex 6, point 4).

Despite the relevant provisions of education law regarding career guidance, an adequate number of hours for its implementation has not been specified, as only ten teaching hours are allocated for the thematic blocks in each educational cycle. Therefore, in a three-year vocational school, four-year high school, and five-year technical school, only ten teaching hours are available for career guidance. Likewise, ten hours of career guidance are allocated for the seventh and eighth grades of primary school (Regulation, MEN, 03.04.2019, Annex 1, Annex 4, Annex 5, Annex 7). A hindrance is the fact that the legislator did not provide schools with dedicated hours for individual career counselling, which undoubtedly would provide additional support to young people in making such important decisions that impact their career paths.

It is a challenge for school career advisors that there are no textbooks or exercise books specifically for career guidance, which means they have to independently create and implement the teaching processes. However, this situation also has a positive side, as the lack of a prescribed content structure allows career advisors the opportunity to conduct classes in their own unique and *constructivist* way. Given the dynamic socio-economic changes, it is important to remember the implementation of a model that fosters openness and adaptability, including openness to change. This encourages the conscious co-creation of a 21st-century citizen who can navigate through constant transformations, especially in the world of work. This model can serve as an effective tool for developing readiness to observe, experience, construct, and reconstruct, as well as equipping individuals with the necessary tools to understand current civilization changes. Therefore, it can be argued, as proposed by Katarzyna Ludwikowska, that the constructivist model of implementing processes in the field of school career guidance benefits students and teachers, namely career advisors, by fostering an attitude of openness to change, proactivity, and creativity (Ludwikowska, 2020).

Taking into account the transformations in the sphere of employment and professional activity mentioned in the article, there is an increasing demand for career guidance that is both theoretically sound and equipped with practical tools to meet the challenges of the “new” work environment. In order to maintain its relevance and adequately respond to the needs of individuals seeking

assistance in contemporary society, career guidance must evolve in terms of concepts and applied methods (Solarczyk-Ambrozik, 2020).

R. Vance Peavy argues that concepts such as narration, symbolic coordination of social actions, self-creation, life space, perspectives, attitudes, ethical assumptions, mental constructs, and meaning-making have the potential to be more useful in understanding human behaviour and the dynamics of social life than concepts such as personality variables, traits, classifications, and behaviour (Solarczyk-Ambrozik, 2020; Peavy, 2014, p. 5).

The Chaos Theory of Careers, which has practical utility, is particularly noteworthy and worth promoting in the field of work pedagogy and career guidance. It aligns with a systems theory approach, applying it to explain natural phenomena with a focus on their structure and order.

Individuals and their environment are perceived through the lens of chaos as complex, open, and adaptive systems that are extremely sensitive to changes. Consequently, these systems are ordered yet unpredictable, as well as adaptive in terms of seeking patterns. The Chaos Theory of Careers provides insights into complexity, adaptability, change, opportunities, non-linearity, creativity, and history as systemic characteristics of individuals and environments. The authors of this theory, Robert G.L. Pryor and Jim E. Bright, emphasize that it encompasses systemic, realistic, constructivist, ecological, contextual, and chaos theory elements. The uniqueness of individuals lies in their ability to construct careers through causal actions, which, however, can be inadequate, poorly adjusted, based on unconscious motives, or rationalized by defence mechanisms. This creates a specific need for guidance in terms of identifying inadequacies in individual constructs of reality that underlie decision-making processes. Furthermore, they argue that incorporating elements such as the complexity of human experience and the social world, variability, dynamics, interactivity, and adaptability of human decision-making processes regarding career choice and development can be enriched by unplanned and unpredictable events and experiences. The Chaos Theory of Careers asserts that both stability and its absence are inherent properties of modernity, and a relatively stable order of the world must confront uncertainty and instability. Additionally, it offers a new perspective on the nature of career development, presenting dimensions often overlooked by contemporary explanations, including new challenges and opportunities emerging against a backdrop of uncertainty, the spiritual dimension in career development, the search for meaning, and the integration of “being” and “becoming.” The assumptions of this theory are illustrated by four

conceptual categories, the “four Cs”, namely: *complexity, change, constructiveness, and chance* (Solarczyk-Ambrozik, 2015; Pryor, Bright, 2003, pp. 12-17).

In career guidance, the Chaos Theory of Careers appears relevant as a foundation for practice oriented towards assisting individuals in coping with complexity, change, and opportunities. The leading concept for Pryor and Bright's theory is “complexity”, referring to the complexity of processes and factors that shape an individual's life. This complexity poses a challenge to accurately predict career development, especially in the conditions of the “new” work environment mentioned in the text. The Chaos Theory of Careers allows for various unpredictable, significant or minor changes. Rather than predicting outcomes, it assumes the possibility of different influences. In a changing world, the importance of an individual's adaptability to change increases. Therefore, career guidance helps individuals navigate transitions, changes, and adaptations, enabling them to deal with uncertainty in thinking and action. Coping with uncertainty is a fundamental challenge not only related to career development but also a challenge for guidance itself. The focus shifts from teaching individuals how to develop a “good” career plan to equipping them with competencies necessary for planning, such as the ability to create and develop a plan, make corrections, compromise, delay, accelerate, change, restore, and implement (Solarczyk-Ambrozik, 2015; Pryor, Bright, 2003, pp. 13-17). This implies a shift in a particular philosophy of action from planning to planfulness. Diligent and cautious planning based on predictability is replaced by the concept of “emergence”, which refers to the appearance of opportunities, possibilities, difficulties that give meaning to future and potential experiences within the adopted model of “complexity.” In the Chaos Theory of Careers, emphasis is placed on assisting individuals in better understanding their convergent and emergent qualities. Convergent qualities are inherent to every individual and encompass skills, values, IQ, knowledge, and measurable traits. On the other hand, emergent qualities result from complex interactions and numerous diverse factors that shape career behaviours (Solarczyk-Ambrozik, 2015; Pryor, Bright, 2006, p. 4). Describing these qualities is not easy but necessary in the present reality.

The Chaos Theory of Careers enables a more open, flexible, dynamic, and creative approach in guidance. According to its fundamental assumptions, the counselling process should acknowledge that reality manifests in constant changes and is based on self-organization and opportunities, with life appearing as both ordered and lacking patterns and predictability. Order and diversity can coexist simultaneously. Revealing these processes, helping recognize unpredictable

events, raising awareness that increasing complexity of reality leads to reduced predictability of outcomes, illustrating differences between emergent and convergent thinking, and demonstrating the need to make decisions even in situations with limited knowledge about possible influences and desired outcomes—all contribute to the practical guidance search for ways to enhance an individual's creativity in constructing their career path (Solarczyk-Ambrozik, 2015; Patton, McMahon, 2006).

In light of the above, it is worth mentioning that an increasing number of researchers are writing about the postmodern turn in career guidance, which aims to address the preparation needs for the “new” world of work shaped by the global economy and digital revolution, as well as the preparation of individuals for new career patterns (Solarczyk-Ambrozik, 2020, p. 263).

Analysing the changes in the nature of work – as a fundamental research category in the field of work pedagogy – in the context of challenges for career guidance, it is important to emphasize the special role of technology. Currently, there is a strong need for new media literacy, which involves the ability to critically evaluate and utilize new media in communication processes, the increasing significance of virtual collaboration, engagement, and participation in virtual teams. The virtual work environment, as a result of the “new” temporal-spatial dimension of work, is a consequence of the development of communication techniques, making it possible for individuals to work together, share work, and enhance productivity despite spatial distances. From an individual's perspective, transformations in the world of work require everyone aspiring to succeed in their career path to demonstrate skills in predicting dynamically occurring changes. The ability to navigate the landscape of diverse organizational forms, required skills for employees, and continuous self-improvement in the face of new challenges will be crucial. Considering the indicated transformations in work, including the development of the Fourth Industrial Revolution and advancements in artificial intelligence, it is important to highlight the changes in career patterns and new competency challenges, which will result in an increasing demand for career guidance (Solarczyk-Ambrozik, 2021, pp. 4-8).

Conclusions

The idea of education through work, for work, and in the process of work, developed by the field of work pedagogy, remains relevant. However, it needs to be adapted to the changing civilizational conditions. Among these conditions,

which are significant for representatives of this sub-discipline, are the Fourth Industrial Revolution and changes in the “temporal-spatial dimension” of work. Global connectivity and intelligent machines are also factors shaping the realities of the “new” work and “new” careers (Solarczyk-Ambrozik, 2021, p. 3). All of these categories pose challenges for career guidance and expand the scope of problem areas within work pedagogy.

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