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DIFFERENT PATHS, ONE GOAL: AMERICAN PEDAGOGY AS A SCIENTIFIC DISCIPLINE IN THE FIRST DECADES OF ITS DEVELOPMENT

INTRODUCTION

The issues related to the beginnings of pedagogy being shaped as an independent scientific discipline in the United States have been discussed by a relatively small group of researchers. The papers by Ellen Condliffe Lagemann, who devoted several papers to this issue, should be considered the most comprehensive. Among them *An Elusive Science: The Troubling History of Education Research* (2000) and the following papers: *Contested Terrain: A History of Education Research in the United States, 1890–1990* (1997) and *The Plural Worlds of Educational Research (1989)* are the most extensive. Holly Knox, the author of the report ordered by the National Institute of Education entitled *A History of Educational Research in the United States* (1971), due to the form of her study, presents these issues somewhat more synthetically.

In order to analyze the course of the process of 'making pedagogy a scientific discipline', first of all it is noteworthy to refer to the papers of researchers and scientists, as well as practitioners whose activities played a fundamental role. To present the approaches and concepts formulated by them, for the purposes of this study a selection was drawn up according to the disciplines considered by these researchers as desirable taking account of the theoretical foundation that they were supposed to create for the pedagogy being crystallized as an academic discipline at the end of the 19th century and in the first decades of the 20th century.

On the one hand, the visions of pedagogy as a science shaped in close connection with philosophy turned out to be significant – this topic was commented on, i.a. by Josiah Royce in his essays. Above all, however, a certain distance

of intellectual research and investigation from this field was visible in the United States. It seems, however, that the concepts connecting pedagogy with psychology should be considered more influential. Here G. Stanley Hall, the author of *The Contents of Children's Minds on Entering School* (1893), and the spokesman for the Child-Study Movement, should be referred to. In Europe, however, John Dewey and his achievements seem to be the most recognizable. He raised the problem of the position of pedagogy in the science system, i.a., in *Pedagogy as a University Discipline* and *The Sources of the Science of Education*. In addition to psychology, references to sociology can be found as well, which gives Dewey's vision a multidisciplinary character. From the point of view of the role of psychology in pedagogical research, the concepts presented by William James (1842–1910), associated with Harvard University, and Edward Thorndike (1874–1949), representing Columbia University, also seem interesting. The achievements of these two researchers in the discussed field, however, deserve a separate, in-depth study.

1. UNIVERSITY EDUCATION OF AMERICAN TEACHERS

The development of American education and the gradual process of professionalization of the teaching profession initiated in the first half of the nineteenth century opened the university gates to young students of this profession in the 1970s. The process was not deprived of obstacles and difficulties – there were tensions arising out of the increasing competition between institutions specializing in providing education to teachers: regular schools and increasingly expansive universities, which sought to attract as many applicants as possible. At the same time, the educational offer was also diversified. In normal schools, candidates, and usually female candidates, were prepared to work in elementary schools, while universities were focused on educating future secondary school teachers or educational management staff (Wojniak, 2021, p. 45).

While making references to the organization of the beginnings of the university education of American teachers, another aspect should be mentioned. Faculties of education were founded somewhat outside the basic university structure, which meant that they functioned as affiliated institutions of a given university, without being formally its integral part. Such an organizational formula was adopted, i.a., by Columbia University, which in the 20th century became one of the leading centers in the field of training teachers – in the initial phase of its existence, the Teachers College was not recognized as an equal faculty of this university. Such organizational conditions influenced the development of American pedagogy as a scientific discipline (Sears, Henderson, 1957, p. 58).

The reasons for this can be found, i.a., in the strong tendency, not only in the USA, to feminize the teaching profession. Women predominated among the candidates interested in taking up teaching studies, which was largely influenced by the views on their social role that was well-established in 19th-century societies. The

woman's life goal, or even, as some wanted it to be called, 'calling', was to become a wife and a mother, to take care of family and care for its weaker, dependent members. The teaching profession, due to its specificity, including childcare, was therefore an extension of a woman's "natural calling" and extended the level of its implementation beyond private and home zones. One can add to this the conviction that personality and moral characteristics of women in a special way predestine them to develop and strengthen virtue and morality in the young generation, and this should be considered one of the duties performed by teachers (Beecher, 1845, p. 54–56). However, despite the passage of time, work done by teachers, and their skills and competences were depreciated, and often among representatives of the educational administration or university lecturers themselves there were opinions and voices undermining their intellectual predispositions, directly describing them as "unwise" (Mann, 1855, p. 72–75).

The teaching staff in the initial period of the development of university teacher training in the United States stemmed from such disciplines as philosophy, psychology, sociology, and history. Though, the tendency of academic teachers to go beyond the purely didactic role of transferring specific knowledge to their students is interesting. Quite quickly, in line with social expectations regarding the development of universally accessible education, academicians began to speak up as experts in a public debate, formulating guidelines regarding the shape of the public education system. This kind of activity required extended knowledge based on a solid theoretical foundation. It was therefore an important impulse for the development of research activities in the field of education (Lagemann, 2000, p. 20).

2. IS PEDAGOGY A SCIENCE?

The development of faculties of education at American universities was, in a way, the aftermath of the educational aspirations of the American society. The general public was keenly interested in expanding the public system of education, considering it one of the necessary conditions for improving the quality of life of citizens and a key factor in the modernization of the country facing economic, demographic, and social challenges in the last decades of the 20th century. Characteristically, the American society also had a rather strong belief that science and its achievements determine progress and make it possible to solve many important social problems (Lagemann, 1997, p. 6).

The policy imposed by the faculties of education at American universities was in line with these trends, as they tried to acquire students not only of teaching faculties, but also students who could be professionally fulfilled in the administration and management of education in the future. Therefore, it was necessary to provide them with knowledge, based on reliable empirical and logical foundations, about the key elements from the point of view of the educational system, i.e. a student, a teacher and school. As a result, on the one hand, American academicians distanced themselves from the educational deliberations of philosophers,

and on the other hand, this approach encouraged them to explore areas that made it possible to develop practical solutions in the field of education (Lagemann, 1997, p. 6).

The beginning of systematic research in the field of education was accompanied by a certain degree of distrust expressed by the representatives of other scientific disciplines. The impression that the subject or purpose of the research was not clear is well reflected in the title of the essay written by Josiah Royce, *Is There a Science of Education?* The author of the article with a somewhat provocative title referred to the views of Dilthey who rejects the "universally valid doctrine of pedagogy" (Royce, 1891, p. 16). Here, he accepted Dilthey's stance as justified, according to which scientific pedagogy should stay as far as possible from the schemas describing what human nature is, why it is like that and how it should be shaped. No specific educational problem can be solved based on universal assumptions. There is no place for them in pedagogy – to be effective, one should take account of the specificity of a historical moment, a given nation, family, or a child. Taking this approach into account, pedagogy should not be referred to as a science, but as an art (Royce, 1891, p. 20).

However, the author cited above does not deny the need for scientific preparation of practitioners in the field of education, and thus primarily teachers, whose role is to direct the moral and social development of their pupils. This requires appropriate knowledge – Royce mentions psychology as one of the desired areas of this knowledge – and in this sense he is willing to approve the scientific dimension of pedagogy (Royce, 1891, p. 21). The author's approach seems interesting, as he rejects the scientific nature of pedagogy understood in terms of universalism, replacing it with the postulate of adopting one universal principle. In line with this principle, it should be assumed that a teacher should be reflective enough to reject rigid rules at a given moment and adapt his/her style of action to a particular situation and its requirements: "There is no universally valid science of pedagogy that is capable of any complete formulation, and of direct application to individual pupils and teachers" (Royce, 1891, p. 24). So, scientific knowledge is necessary, but should not be treated as a substitute for the "teaching instinct", but as its support: […] "when you teach, you must know when to forget formulas; but you must have learned them to be able to forget them" (Royce, 1891, p. 24).

3. PEDAGOGY AS PHILOSOPHY

At the end of the 19th century, the debate on the theoretical context in which pedagogical research should be situated naturally focused on philosophy. It was particularly justified as many European philosophers representing various epochs devoted much attention to issues related to the process of upbringing. The above-mentioned Josiah Royce (1855–1916), a philosopher associated with Harvard University, considered as one of the founders of American idealism, also perceived pedagogy and research in this field from this perspective (Robinson, 1968, p. 9).

Royce analyzed issues related to education and pedagogical practice in his two-volume dissertation entitled *The World and the Individual* (1899–1900). Although this paper and other papers by this author discuss the development of pedagogy in the context of the philosophy of education, while reading them it can be concluded that the foundation in the form of philosophy should be a key element of pedagogical education. Therefore, the rooting of scientific research in the field of pedagogy in this discipline of knowledge seems completely justified. As one researcher noted in his analysis of Royce's achievements, idealism should be "culmination of educational training" (Horne 2000, p. 246), and "any philosophy worthy the name forms the background of educational practice" (Horne 2000, p. 245).

Philosophy as the foundation for the pedagogy postulated as an art by Royce seems to be necessary also in the light of his deliberations on science per se. The topic developed by this author in his essay entitled *Is There a Science of Education?* appeared in his earlier paper called *The Possibility of Error* of 1885. He pointed out that "science does not counsel individual, unchangeable, and infallible "methods" […]. [S]he corrects our error; but she also shows that there is no royal road to the true method […]" (Royce, 1885, p. 389). As for Royce, the risk of error and fallibility should not be used as an excuse for departing from intellectual exploration and rational discourse – on the contrary, it should rather be seen as a stimulus for further investigation. Failures and errors should only indicate and signal that research should be developed further, continuing to seek the truth (Privitello, 2011, p. 311).

It is important in the context of pedagogy, as a teacher educated in this spirit should be a model of behaviour for his/her students, not only guiding their individual intellectual development, but also shaping a critical attitude towards information and phenomena present in their environment. Education means developing a sense of one's own identity and building self-awareness in everyday life. Pedagogy, on the other hand, in parallel with philosophy, performs the task of systematically examining the leading historical ideas at a given moment. What characterizes both of those areas is also debate, sharing doubts and striving to achieve full individual development (Privitello, 2011, p. 313).

4. PEDAGOGICAL RESEARCH IN THE ERA OF PROGRESS

Despite the attachment to philosophy, which found its supporters i.a. among educational decision-makers, and as a representative of this position, William Torrey Harris, the federal Commissioner for Education in the period 1889–1906[1] can be mentioned, one could observe in the USA a distance from philosophical sciences as the foundation for educational research. Academicians employed

[1] Philosophical views positioned Harris within Hegelianism, but he shared Herbart's beliefs about upbringing. He emphasized the importance of discipline and formalized education, which he considered to be crucial from the point of view of social stability and order (McCluskey, 1959, p. 149–153).

in faculties of education at American universities pointed out that philosophy implies debate and discussion, which in turn may lead to a conflict between the followers of Pestalozzi, Froebel and Herbart. Meanwhile, science, if it is to contribute to the implementation of important social needs or interests, and thus constitute a determinant of progress, should open the field for the broadest possible consensus. Giving the views presented by academicians a scientific dimension was to be tantamount to objectivity and a distance from individual views. These factors, in turn, were supposed to contribute to the creation of an educational reality, order and hierarchy as part of which the entities creating this reality, i.e. the educational administration, school authorities, teachers and students themselves, were to function (Lagemann, 2000, p. 21).

It was undoubtedly also the aftermath of the intellectual currents that characterized this era, namely the period known as the Progressive Era, which emerged in the last decade of the 19th century and went back to the beginning of the 1920s. This period was characterized by reforms, visible both in social and political life, initiated by successive presidents of the United States: Theodore Roosevelt, William Taft, and Woodrow Wilson (Flanagan, 2007, p. 10). In the field of education, just like in other fields of study, the determinant of their university status was to emphasize their empirical nature and the use of laboratory methods, which meant the domination of expert knowledge and hard data over "amateur" investigation and seeking answers to questions that brought researchers closer to discover abstractly understood truth (Reese, 1999, p. 2). Such views encouraged to conduct theoretical research and consolidate pedagogical research in the area of research other than philosophy.

This approach was manifested in the growing popularity of school questionnaires prepared by academic staff of faculties of education at the request of the federal and local educational administration as the basic method of determining the direction of education reforms[2]. The survey became a tool that was used by school management, teachers, and education superintendents to analyze the strengths and weaknesses of local educational solutions. This type of research was conducted by the local educational administration also in other counties or states when searching for an inspiration or a model helpful in implementing reforms, or when educational authorities striving for changes were looking for arguments and excuses to initiate them. At the school level, it was also used by the citizens themselves, who criticized the educational methods and demanded quality improvement. Here, intelligence tests and school achievement tests conducted among students came in handy and proved useful. The research commissioned, e.g., by the federal educational authorities and conducted by faculties of education, focused

[2] The Act establishing the Department of Education was adopted by the United States Congress in 1867. According to its provisions, the overriding goal of this institution was to collect information and statistical data that would show the condition and directions of educational development in individual states and dependent territories. The second goal was to popularize information on the organization and management of schools and school systems, as well as on the teaching methods (U. S. Congress, 1867, p. 434).

on issues such as higher education for black people, secondary education, teacher training, and funds for education (Knox, 1971, p. 5).

Still, however, there was a strong need to create a coherent context for pedagogical research. The development of pedagogy as a separate scientific discipline also became an important factor which made it possible to create a community of researchers dealing with didactics and analyzing data and information on education collected on the basis of the results of surveys or tests commissioned by the above-mentioned federal authorities. A characteristic feature of the Era of Progress is the fact that representatives of almost every field in which education at the university level was conducted, tried to emphasize their influence and role in the process of development of American society. Academicians were looking for some legitimacy for their activity, and in the case of pedagogy, it was equally important to give scientific seriousness to the proposed and implemented reforms, both in the area of the didactic process and issues related to education management (Reese, 1999, p. 7). It was also desirable from another, very prosaic point of view – namely the fact that employment in the educational sector remained a profession that was not associated with a particularly high social prestige or a material status, which was largely influenced by the feminization of the teaching profession.

The discussion as to whether pedagogy should be situated within the social sciences or the humanities, and a kind of competition, from what substantive positions the professional development of employees in the education sector will be controlled, who will be considered an expert and who will be considered an amateur, what procedures or methodologies will be considered as scientific ones, also became a characteristic element of this period (Reese, 2011, p. 7).

Meanwhile, the growing popularity of the post-Darwinian concept of science, emphasizing the importance of the mechanisms of evolution, favored the development of the conviction about the importance of human activity instead of the previously dominant views on the role of divine intervention in phenomena occurring in the world of nature and men. This approach changed the emphasis in defining what was to be called scientific investigations and explanations. Innovation and progress started to be identified as specialization and experiment (Lagemann, 2000, p. 23).

This kind of change in the manner of defining and perceiving a scientific activity also affected philosophy, which from the discipline that was largely dominated by clergymen, became an area of interest for lay people and an academic field. At the same time, some changes could be observed within the discipline itself – namely a visible tendency to divide it within the previously broadly understood field of study. And in that way natural philosophy began to evolve towards the natural sciences, and moral philosophy – towards the social sciences: economics, sociology, and political sciences. The specificity of mental philosophy was also noticed, and the study of processes related to states of mind combined this field of research interests with psychology (Lagemann, 2000, p. 23).

5. TOWARDS PSYCHOLOGY

As Ellen Condliffe Lagemann noted, the divisions within philosophy and the emergence of psychology affected the educational research and academic studies in this field. As psychology focuses on the mind functioning and examines its structures, this clearly shows its importance for pedagogy. On the other hand, unlike philosophy, which undertakes considerations of a theoretical nature and operates on a certain level of abstraction, in the case of psychology, its empirical character should be emphasized, which gave it a more measurable dimension, identified with scientific objectivity. Psychology therefore began to attract increasingly more attention from academicians dealing with educational issues and education reformers, creating a scientific basis for their theoretical considerations and practical activities. This approach also brought some benefits to psychologists as it made it possible for them to establish their presence in the academic world while broadening their research perspectives (Lagemann, 2000, p. 23–24).

The beginnings of psychology as an independent scientific discipline in the United States should be linked with G. Stanley Hall (1844–1924), who as the first person in the country obtained a doctoral degree in this field. Having spent several years at German universities and research institutes, he became involved in research with Johns Hopkins University, where he taught a course in psychology and pedagogy at the Faculty of Philosophy[3]. Hall often gave lectures during meetings with teachers and in the National Education Association (Hulse, Green Jr., 1986, pp. 28–32), which could undoubtedly become an inspiration for deepening his educational issues, and due to his scientific interests, it became natural to include these issues in the mainstream of psychological research.

As he admitted in one of his papers, he did not consider himself a precursor of research on the child and his/her mental and physical development, as courses covering these issues were conducted in the so-called normal schools, which prepared teachers mainly for work in elementary schools. Nevertheless, he was one of the first to criticize the old-fashioned and out-of-date educational methods used in the family, the teacher's mechanical approach to working with the student and the general approach of ignoring the child's nature and individuality (Hall, 1911, p. V–VII).

Hall published the results of his research into the manner of child's functioning in his essay of 1883 entitled *The Contents of Childrens' Minds*, the extended version of which was included in his book of 1893. These publications discuss the results of the research conducted by the author in Boston kindergartens, based on surveys containing questions for children. The children were asked which points available in the survey were experienced by them, so they were supposed to indicate what animal they saw in the drawing. The next questions concerned more detailed characteristics of the animals viewed, including colors or elements of their anatomical

[3] At the Hall's initiative, the first psychological laboratory in the USA was founded at this university, he was also the founder of the journal "American Journal of Psychology".

structure. Based on the answers, Hall concluded that mind can absorb those elements that are related to the knowledge already possessed by the individual. In the case of children, the educational process should therefore start with what the child already knows and then gradually this knowledge should be developed – so that it proceeds in an appropriate manner, it is necessary to know the basics of psychology and anthropology, and thus to include them in educational studies (Hall, 1893, p. 25–26).

Hall developed this research and teaching stream in the field of pedagogy primarily at Clark University, which he headed in 1887. Pedagogy was then incorporated into the Faculty of Psychology, which also included philosophy, neurology, and anthropology. During this period, Hall planned to develop psychological research in a direction other than research on the mentality and development of children, but the financial situation of the university forced him to seek support from private sponsors who, however, were interested in the possibilities of using the results of scientific research in a practical manner. From their perspective, research the results of which would contribute to the education reform and development was desirable (Lagemann, 2000, p. 30).

At the Hall's initiative, "Pedagogical Seminary" journal was established in 1891, which published data collected through surveys, observations, and measurements, covering hundreds, often even thousands of children. The subject of this research included issues such as Thoughts and Reasoning of Children or Imitation in Children. A year later, he launched a summer school of pedagogy and psychology at Clark University Hall, where he taught a course in the study of children. This initiative was addressed to parents, teachers, school heads, and its participants, along with academic lecturers, became part of an informal team collecting data on emotional states in children (anger, fear, laughter, crying), games and toys, self-awareness, and religious experiences. A network of discussion clubs associating mothers or local activists involved in education was created around the summer school – one of such groups, operating in New York, transformed over time into the Child Study Association in America (Young, 2016, p. 202–205).

As Hall declared himself, the goal was to refer to the achievements of psychology, philosophy, ethics, and related sciences to provide the broadest theoretical background for child studies. He believed that it was not only "in accordance with evolutionary tendencies increasingly dominant […], but it will […] place education for the first time on a scientific basis, and be the center around which the education of the future will be organized" (Hall, 1984, p. 5).

6. JOHN DEWEY AND THE MULTIDISCIPLINARY NATURE OF PEDAGOGICAL RESEARCH

John Dewey (1859–1952) is an example of the personality who had a profound effect on the direction of the scientific process of American pedagogy. Noteworthy is the fact that his research interests and didactic activity placed this scientist at the crossroads of several disciplines: philosophy, psychology, and pedagogy.

This interdisciplinary approach was already visible at the stage of Dewey's doctoral dissertation entitled *Kant's Psychology* (Dykhuizen, 1961, p. 112)[4].

Dewey's activity and his contribution to the development of a pedagogical thought are commonly associated with his research work at the University of Chicago and the concept of Laboratory School. Meanwhile, one should mention the decade of work at the University of Michigan (1884–1894) that preceded this period, which dates back to the beginnings of his interest in educational issues. It was also there that Dewey met Alice Chipman, his future wife, who played a significant role in the creation of the idea of Laboratory School and its subsequent activities (J. M. Dewey, 1939, p. 21). During this period, as a researcher and a lecturer, Dewey dealt with philosophy, but as he pointed out, what he cared most about was the translation of theoretical and abstract philosophical ideas into practice and specific actions. As he emphasized, a philosopher is a social being and his/her work consists in articulating his/her ideas, testing them on others and trying to influence others' actions through them (Savage, 1950, p. 65).

The way to implement Dewey's vision of a scientific activity was his involvement in educational research, which opened the prospect of implementing his theoretical concepts. The circumstances directly related to his university duties came forward here. According to the regulations in force in the state of Michigan, the university was part of the state public educational system, and the academic staff was obliged to monitor the quality of education in secondary schools from the point of view of the implementation of academic standards at this level. It was justified by the fact that a significant number of the graduates of these schools was enrolled by the state university, hence the concern of the state authorities and the university itself to maintain an appropriate level of education in secondary schools was an obvious matter and was justified not only from the formal point of view. In this field, Dewey and his associates were actively involved in the cooperation with representatives of the school administration – with his participation, an organization called the Michigan Schoolmasters' Club was established in 1886 which was supposed to be a forum for inspiration, discussion, and exchange of experiences for school managers, teachers, and academic staff. It overlapped with the private experiences of Dewey as a father, who, raising his own children, tried to search for the best solutions and methods (Lagemann, 1989, p. 188–189).

Dewey was looking for the scientific foundations of pedagogy, asking a question, whether it was possible to identify, as in other sciences, rigorous methods leading to the achievement of specific results. While in exact sciences, and above all in mathematics, such a mechanism can be observed, but for example in social

[4] Dewey's doctoral dissertation of 1884, unpublished, is considered to have been lost. The information about its title and some insight into its contents come from Dewey's correspondence exchanged i.a. with the above-mentioned federal Commissioner of Education (US Commissioner of Education) and the former education superintendent in Missouri – William Torrey Harris, the co-founder of the Journal of Speculative Philosophy, where Dewey published his articles (Dykhuizen, 1961, p. 112).

sciences or psychology – it is more questionable. Therefore, Dewey proposed a more flexible approach – the use of specific methods, adequate to the study subject, instead of methods understood in a universal manner. It leads to the conclusion that any field offering a possibility to investigate knowledge about facts in a systematic manner, will be of a scientific nature, leading to their understanding and creating mechanisms of intelligent control of facts, devoid of randomness on the one hand, and routine on the other. As an illustration of this way of understanding science, in relation to education, Dewey suggested that a question should be asked about the criteria applied, for example, to select materials for the curricula, choose teaching methods or the principles of the schoolwork organization. The next question was whether, as a result, we can speak of subjecting these mechanisms to systematic controls, allowing not only to understand them, but also to correct them, if necessary (J. Dewey, 1929, p. 8–9).

Dewey, using the category of pedagogy as an art, seemed to share the position of Josiah Royce, but his understanding of the concept was specific – namely, pedagogy understood as an art meant that the starting point should be a scientific approach to the subject, in accordance with the previously mentioned criteria, followed by the implementation of practical activities. It was meant to create some room for new educational projects, the innovation of which did not consist in addressing scientific criteria, but in integrating these criteria with creative solutions increasing the quality of the educational system (J. Dewey, 1929, p. 13).

In the paper entitled *The Sources of the Science of Education* Dewey presented an interesting opinion about pedagogy. Namely, he noted that this is not a completely independent field of knowledge, as it is an educational practice that became the source of material for theoretical considerations. Mature sciences, on the other hand, represent the opposite tendency, creating theories on the basis of which specific actions are taken and existing problems are solved. The answer to this "deficit" may be pedagogy reaching for the achievements of other sciences, which can provide it with theoretical tools for solving problems that arise on the basis of educational practice (J. Dewey, 1929, p. 35–36).

Dewey, following Royce's example, listed philosophy as a field in which one can search for a theoretical context for educational research, narrowing its scope to the philosophy of education. At the same time, he indicated that philosophy and pedagogy are connected in a natural way, and their mutual relationship consists in the fact that philosophy determines the goals to be achieved by the educational process, while pedagogy indicates which means and measures should be used to achieve these goals. Should these two areas be separated, the postulated goals or values will become sterile, which, apart from the verbal dimension, will not carry any content – only supplementing them with adequate, effective means of their implementation gives these goals the proper meaning (J. Dewey, 1929, p. 55–59).

In addition to the philosophy of education, Dewey also looked for sources for scientific explanation of problems in the area of education in psychology and sociology. In one of his papers, he demonstrated an interesting relationship

between these disciplines from a pedagogical point of view – namely he applied once again the system of means and goals. In this system, means must be sought within psychology, and goals within sociology, as psychology determines how we learn, and sociology indicates what we learn. Therefore, focusing only on methods that favour the intellectual and personality development of an individual, will not be satisfactory, because in this way we lose sight of the fact that the effects of this development should be desirable from the point of view of the wider community to which the individual belongs. As an example, the author mentioned the skills in the field of reading, writing, and counting – they are not of great value per se and using them by an individual in isolation is pointless. It is much more important what role the ability to put letters or say words plays in the individual's personality development or individual interests, and in the longer term – it translates into their behaviour and attitudes in social life (J. Dewey, 1929, p. 60–64).

With the view of these considerations, the following question should be asked: to what extent did Dewey's academic path correspond to his beliefs about the scientific roots of pedagogical studies? In 1894, Dewey got employed at the University of Chicago, where he headed the Faculty of Philosophy. He then agreed that the courses in the field of pedagogy should be located within the unit he supervised – representatives of psychology got also engaged there. The faculty was staffed by Dewey's former associates at the University of Michigan, as well as his former students. This group included: George Herbert Mead dealing with philosophy of mind and social psychology, James H. Tufts (ethics, social philosophy, and aesthetics), Edward Scribner Ames (functional and experimental psychology), Addison W. Moore (logic and theory of knowledge). Their scientific views and their research created such a coherent system that it came to be referred to as the Chicago School of Philosophy (James, 1904, p. 1).

From the point of view of searching for a scientific inspiration for pedagogical research in psychology and sociology, the mutual relations between Dewey and Mead, both on a professional and private level, were extremely important. Both scientists became friends and cooperated upon the implementation of the Laboratory School project, in which Mead was also deeply involved. They both drew intellectual inspiration from each other: Mead, who began his career as a psychophysiologist, began to see the social dimension of psychological studies under the influence of Dewey. Dewey, in turn, under the intellectual influence of Mead, saw psychological research not as an analysis of simple stimulus and response mechanisms, but as a series of behaviors and actions undertaken by an individual in the context of communication and interaction with the environment, which made it possible to take a deeper insight into the relationships between an individual and his/her environment and their mutual interactions (Lagemann, 1989, p. 192).

The employment at the University of Chicago also gave Dewey the opportunity to connect with representatives of other scientific disciplines who presented their vision of pedagogical research. It was a group of sociologists who went down

in the history of science as the "Big Four": Albion W. Small, Charles R. Henderson, George E. Vincent and W. I. Thomas. In the context of shaping the scientific foundations of pedagogy, the position of A. S. Small, who was the founder of the first independently operating faculty of sociology in the USA and played a key role in the process of isolating sociology as a fully-fledged scientific discipline in the USA, seems to be particularly noteworthy (Goodspeed, 1926, p. 10–11).

In his speech delivered during the meeting of the National Education Association in Buffalo in July 1896, Small pointed out, i.a., the common goal of both sociology and pedagogy which is to bring an individual to such a state in which it is possible to directly confront specific conditions in which all the functions of his/her personality can be used and fully controlled by him/her (Small, 1897, p. 840).

From the perspective of a sociologist, the main task of pedagogy is to seek answers to the question of how to develop an individual's ability to adapt to social conditions, both natural and created ones, in which the individual lives. However, as the author pointed out, his goal is not to enter the area described by him as a pedagogical technology, and thus to express his views on the practical aspects of teachers' work. His goal is to make academicians, not only in the field of education, aware of the importance of cooperation, sharing knowledge and experience by representatives of various university disciplines, within which research essential for people and society is conducted (Small, Vincent, 1894, p. 262–264).

Scientific inspirations from Dewey's associates and the practice, which was the source of the activities of the Laboratory School, became for this scientist the basis for the development of several important postulates regarding the adoption of certain standards in pedagogical research. To him, this research should be based primarily on experiment, and institutions such as Laboratory School should become the place for its implementation. Such schools should therefore become an area for presenting, testing, verifying, and criticizing theoretical assumptions, and the effects of these activities should be cumulated as a specific set of principles and facts on the basis of which one can build a base of knowledge about education. As Dewey pointed out, the purpose of this activity was not simply to improve the methods of teachers' work or the ways of managing schools – this role was to be played by training schools or the so-called model schools. The task of laboratory schools was more systemic and involved developing completely new standards and a gradual change in the conditions of teaching and learning. Laboratory Schools were supposed to play the same role in pedagogy as laboratories do in biology, chemistry, or physics. The effect of the work of laboratory schools was to develop a scientific theory for the practical organization of all educational activities (J. Dewey, 1896, p. 289).

The concept of laboratory schools as a source of material for scientific research reflected the tendencies characteristic for this period, related to the emphasis on the importance of development and progress. These convictions became the starting point for searching tips, solutions, or proposals for changes in science

which would accelerate development processes. Hence the practical dimension of science and the possibility of applying its achievements in everyday life were emphasized. It became equally important to discover mechanisms that make it possible to control dynamic social changes. In this context, the Laboratory School project was to provide a connection between the theoretical achievements of science and the real needs of a changing society (Lagemann, 1989, p. 198). Dewey was far from convinced that the scientific nature of pedagogy should be determined by giving educational practices a rigid form of laws or rules. Although he believed that practitioners should take advantage of the achievements of science in their activities, scientific theories only make sense if they can be applied to solving specific problems in the field of education (Tomlison, 1997, p. 377).

Without the use of scientific methods involving observation, experiment, or test, as well as without reference to the achievements of other sciences and without using these elements in practice, Dewey emphasized that it will not be possible for the educational process to achieve the goal which is the proper child socialization through the appropriate construction of curricula or methods of working with students. According to Dewey, it was to educate a citizen who is conscious of the need to serve his/her community and able to self-direct. The implementation of this assumption, in turn, was to serve the overriding goal: building a dignified and harmonious society (J. Dewey, 1900, p. 28). This conviction was also formulated by Dewey in *My Pedagogic Creed*: "I believe that education is the fundamental method of social progress and reform" (J. Dewey, 1897, p. 16).

CONCLUSION

The process of crystallization of American pedagogy as a scientific discipline proceeded in a way parallel to the process of professionalization of the teaching profession. At the same time, the activities of such personalities as John Dewey undoubtedly lent prestige to educational studies and encouraged the university authorities to equate the position of education schools with other faculties. Affiliated before and loosely associated with universities, they became fully-fledged and full status elements of their structures.

The development of didactics and the widespread use of questionnaires or tests to diagnose the condition of American education, and to shape directions for its development, required conducting increasingly more systematic and in-depth educational research. When analyzing the course of the process of making American pedagogy "scientific", a certain twofold approach can be noticed, whose consequences affecting the position of this discipline in the academic world could be observed in the following decades.

On the one hand, its shape was clearly influenced by those scholars who tended to give educational studies a multidisciplinary character and looked for points of contact in other fields of science. Such a position presented by G. S. Hall and J. Dewey mentioned herein is considered by historians of pedagogy significant

from the point of view of the development of pedagogy and treated as a period of many significant scientific achievements in this field (Lagemann, 1997, p. 7). Child-Study Movement or Laboratory School became milestones in the development of pedagogy and undoubtedly became an inspiration for subsequent generations of researchers, not only in the United States, but also in Europe.

On the other hand, the trend related to surveys and tests, which were often initiated by practitioners in the field of education, often associated with the management sector in this area, turned out to be extremely influential. Academicians, who gradually monopolized this area of research, also joined this type of initiative. With time, the quantitative path of the development of pedagogy was gaining ground and popularity, somehow at the expense of interdisciplinary research. A consequence thereof was the growing tendency in the academic community to close themselves in their own groups, which was fostered by the creation of organizations and associations such as the American Educational Research Association or the National Society of College Teachers of Education. Certainly, on the one hand, it was conducive to the integration of this environment, facilitated efforts to specify research issues or simply helped this group to mark its presence in the world of science. On the other hand, it led to a growing isolation of educational researchers. This phenomenon referred not only to their relations with academicians dealing with other disciplines of knowledge in the field of social sciences or humanities, who for example could be inspirational for their research. The problem of isolating educational researchers was also visible in their contacts with practitioners, especially teachers and educational administration. In the case of teachers, the issue of the feminization of this profession was experienced once again. The academic environment was made up almost entirely of Protestant white males – and as a result they were viewed as "imported experts", often referred to as "measurers" (Judd, 1938, p. 11), strangers in the environment they were to study, who expressed their views about the reforms or solutions they want to introduce, often inadequate to the needs or aspirations of local schools or local governments, in an authoritative manner.

One of the school superintendents put it a bit more bluntly, who not without sarcasm compared school studied with such methods to a clinic which operates not for the benefit of patients, but for the staff employed there (Lagemann, 1997, p. 7). In turn, Ella Flagg Young, a colleague of John Dewey in Chicago and the first female president of the National Education Association, pointed out that this way of conducting research only accelerated the development of bureaucracy and led to limiting the freedom of teachers while working with students. (Lagemann, 1996, p. 178). Moreover: "the young men […] wish to undertake some new line of work, not of instruction, but of investigation" (Flagg Young, 1901, p. 42). And further: "The isolation between the theory of the school and the theory of life is so great that the general consensus of opinion advocates the retention in the school of subject-matter and forms of work which it will not tolerate in the commercial world or home" (Flagg Young, 1901, p. 42–43).

It is difficult not to look for the influence of circumstances external to the education system, i.e. the realities of social and economic life in the discussed period. The Era of Progress and its characteristic tendencies also influenced American scientific life, emphasizing the importance of a pragmatic approach in the field of educational research. Above all, they were supposed to shape the desired direction of changes in the area of education.

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Different paths, one goal: American pedagogy as a scientific discipline in the first decades of its development

Summary

Aim: to present the American concept of the development of pedagogy as a scientific discipline, with particular emphasis on the postulates and arguments of those whose operation and activities shaped the direction of the discussed processes.

Methods: a content analysis presenting the visions and directions of the development of pedagogy as an academic discipline proposed by the creators of the scientific foundations of pedagogy.

Results: the reconstruction of the perception of pedagogy as a field of scientific research and the postulated priorities, with particular emphasis on the cultural and social context for the undertaken research, which not only became its background, but largely determined its direction and course.

Conclusions: In the United States, pedagogy as a field of scientific research was perceived mainly as a basis for searching for specific solutions aimed at improving the quality and effectiveness of the American education system, hence the need for education reforms in line with the trends typical of that period was prioritized. In this spirit, the quantitative research ordered and commissioned by the local and federal educational administration was conducted on the basis of questionnaires and tests with the aim to collect as much information and data as possible. The perspective of supporters of an interdisciplinary approach to pedagogical research, such as John Dewey, focused not so much on the measurable improvement of the quality of education, but above all on what the improvement of the education system is to serve in the individual and social perspective: on developing individuals and building a harmoniously functioning society. Among the researchers representing the faculties of education at American universities, quantitative research was becoming increasingly more popular and gained more supporters, which in turn, led to their gradual isolation, not only in the community of scientists representing social sciences, but also in relations with those who were to apply their scientific achievements in their daily work, i.e. teachers and education administration.

Keywords: teacher education, pedagogy, pedagogical research.