ROZPRAWY
STUDIA Z TEORII
WYCHOWANIA
TOM XVI: 2025 NR 1(50)

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Knowledge as a constitutive component individual educational capital

Wiedza jako konstytutywna składowa indywidualnego kapitału edukacyjnego

Abstract: The article defines the concept of individual social capital as an individual level of knowledge, skills and social competences. Then, attention was focused on knowledge, attributing to it the features of a constitutive component of the aforementioned capital. Next, the basic definitions of knowledge along with its typology were presented, and then the distinguished types of knowledge were characterized and the importance of integrating everyday knowledge with scientific knowledge, as well as integration between scientific fields and disciplines, was indicated. The specificity of acquiring knowledge in the process of formal, non-formal and informal education was also discussed.

Keywords: individual educational capital, every day and scientific knowledge, knowledge integration.

Introduction

In the social space, the concept of "educational capital" is still underrepresented, interpreted and used. The concept of "human capital" is more rooted, but it has clear references to economic theory, according to which a person (employee) is the most valuable component of an enterprise's resources. The very use of the word "resource" in relation to an employee deprives him of subjectivity and situates him on an equal footing with material resources, such as machinery, equipment, buildings or means of transport. In addition, limiting the understanding of a person's potential

to his productivity, which affects the creation of income in the company, is an unjustified simplification – reductionism that takes into account only the economic goal of the company.

The introduction of the concept of "educational capital" allows a person to be detached from one, admittedly important, but not the only, form of existence – the function of professional work.

If we define "individual educational capital" as an individual level of **knowledge, skills and social competences,** then we extend the concept of "human capital" to all spheres of human activity. At the same time, focusing attention on the individual side of this type of capital does not mean marginalizing its impact on group capital, and in a broader perspective on the capital of entire societies. On the contrary – it makes it possible to indicate that individual educational capital is the foundation on which it is possible to build, thanks to appropriate relations, the capital of various social and professional groups, creating national and global configurations.

It is not without significance that individual educational capital is a specific property of a given member of society, which can be constantly multiplied as a result of one's own systematic activity (lifelong learning). Unlike economic or health capital, it does not erode, it does not lose its value under any conditions. However, this requires continuous work on oneself – education, further education and improvement in school and academic forms (formal education), as well as outside of them (non-formal and informal education).

A separate issue is the transfer of educational capital, i.e. sharing it in various situations – during learning and work, as well as during play, professional and social meetings. Intergenerational and intercultural transfer, which has already been analysed in my earlier publications, is of particular importance (Kwiatkowski, S. M., 2022, pp. 414-424). This time we will focus on knowledge - the main component of individual educational capital, which is the basis for all transfers in the area of interest to us.

Knowledge – basic definitions from a pedagogical perspective

When thinking about **knowledge,** we recall colloquial terms that identify it with the information we have. By taking a step back, we mean information as processed **data**. A typical source of data are statistical yearbooks describing various aspects of economic and social life in numbers. If the data concern, for example, the population of Poland in 2024, then a comparison with the population in 2020 may be the information. From this information, we will learn about the demographic changes that took place between 2020

and 2024. The processed data are not only a description of reality, but also indicate observable trends. The sequence: **data, information, knowledge** can be supplemented with one more link, which is **wisdom**. We intuitively define wisdom as knowledge enriched by professional and life experience (cf. Zhang, Shi, Wang and Ferrari, 2022, pp. 15031-15036; McKee and Barber, 1999, pp. 150-153).

In further considerations, let us assume that knowledge is a set of reliable (true) information (including contextual) about the past and present, as well as justified beliefs about the future (hypothetical knowledge). The latter result from a logical analysis of the knowledge accumulated so far and, of course, may be burdened with error (is it possible to have real information about the future?). It is a kind of forecasting knowledge (we would like it to be knowledge with the highest possible degree of probability), necessary in all kinds of planning activities, without which it is difficult to imagine rational formulation of short-term, and above all long-term goals (cf. Audi, 2005).

For pedagogical practice, it is important to state that knowledge is the totality of structured content collected and consolidated in the mind of a pupil/student/employee as a result of learning and gaining experience. In different periods of life, knowledge can take a static form (potential knowledge "waiting" to be used) or dynamic (knowledge used in various professional and life situations). Static knowledge becomes outdated after some time, becomes obsolete and outdated – it is gradually forgotten. Dynamic knowledge, on the other hand, is systematically updated, in accordance with the needs resulting from changing situations.

Typology of knowledge - characteristics

Among the basic types of knowledge, we can distinguish (cf. de Jong and Ferguson-Hessler, 1996; Boshoff, 2014):

- theoretical knowledge (resulting from theorems and theories),
- empirical knowledge (based mainly on observation, experiments and experience – someone else's and one's own; it is knowledge acquired on the way: from the results of experiments, through the creation of models of phenomena and processes, to structural descriptions),

And:

- factual (descriptive) knowledge describing objects, events or processes,
- structural (cause-and-effect) knowledge showing the relationships between facts, events and processes,

- procedural (algorithmic) knowledge showing "step by step" how a given problem/task should be solved, but also how it was solved in the past and how it can be solved in the future (this is important in the process of shaping the competences of the future, competences that are likely to be necessary to use the emerging technologies),
- semantic knowledge explaining the sense (meaning) of terms, concepts and expressions (dictionary interpretations).

Important in the modern world, full of threats and indeterminacy (cf. Kwiatkowski, S. T., 2024, pp. 114-115), is also knowledge about experts – authorities in various fields and disciplines, whose knowledge and experience you can rely on, to whom you can turn with your problems (Kwiatkowski, S. M., 2020, pp. 14-29).

In our scientific activity, we refer to the knowledge:

- specialist, directly related to a given scientific discipline or subdiscipline (in the social sciences, the number of subdisciplines is growing exponentially – this is due to the development of theory and inspiration from the results of empirical research),
- interdisciplinary, in many cases also crossing the boundaries of individual fields,
- abstract, allowing you to operate models of machines, devices, phenomena and processes.

Regardless of the type of knowledge, we can consider it from the point of view of its breadth (scope) and depth (cf. de Jong and Ferguson-Hessler, 1996, pp. 107-108). Usually, width does not go hand in hand with depth. Broad knowledge is generally shallow, superficial. Deep knowledge, on the other hand, requires a narrowing of the field of scientific penetration. This is a serious dilemma in school and academic education, which also occurs during professional work. There is no doubt that scientific discoveries require deep knowledge, but the question arises about the desired level of broad knowledge that should accompany it. In this situation, one can (theoretically) refer to the canon of basic knowledge, regardless of the type of school and university and the professional work performed. An attempt to develop such canons is in the case of schools – core curricula, in the case of universities – syllabi, and in the case of enterprises – descriptions of professional tasks, from the analysis of which it can be concluded what knowledge from various professional areas is necessary to perform them. However, it should be remembered that what matters most to the employer is the specialist knowledge of employees, allowing them to carry out a series of intellectual and motor activities leading

to the achievement of a product or service of the assumed quality. In this situation, the canon of general knowledge – humanistic, social, economic, and often, unfortunately, ecological – recedes into the background.

In addition to the dilemma concerning the breadth and depth of knowledge, we are also dealing with a dilemma: disciplinary or interdisciplinary knowledge? The curricula of schools and universities are a mirror image of scientific disciplines, and degrees are also obtained in specific scientific disciplines. How does this relate to the fact, known from practice, that the most interesting and significant scientific discoveries are created as a result of the cooperation of specialists from various disciplines and even fields of science? Where is there room in school, university and company for the integration of knowledge from related disciplines? These questions are expected to be answered by educational and economic institutions. This is important because, as already mentioned, we observe a tendency to multiply the number of subdisciplines, which causes difficulties in communication between their representatives – already at the level of the language of describing things and phenomena. Abstract knowledge cannot be entirely helpful here, because even the most perfect model does not reflect all the features of the original, which is a serious limitation in the field of e.g. social sciences.

The breadth and depth of knowledge in individual terms can be greatly influenced by the presence in our educational and professional environment of people with a significant potential of tacit knowledge, i.e. knowledge that is not described anywhere, and its source is professional and life experience (cf. Dampney, Busch and Richards, 2002). This type of knowledge is difficult to grasp and formalize, it is often an unconscious wealth of people with long professional experience. The problem is to identify such people and then create opportunities for them to share their hidden knowledge, i.e. many years of experience. Case studies or brainstorming can be used for this purpose. In this way, tacit knowledge has a chance to become explicit knowledge, usually of an interdisciplinary nature, which is a derivative of the experience of people who have solved many theoretical and practical problems in their work. Of course, effective sharing of tacit knowledge requires making its recipients aware of the importance of hidden elements, their originality and uniqueness, as well as the need to correlate this type of knowledge with previously acquired knowledge (cf. Falkowski, Maruszewski and Nęcka, 2018, p. 409).

Broad knowledge, despite its name, is usually fragmentary, fragmentary – limited to a specific area. Its level depends on individual interests that go beyond the core curriculum and the requirements of employers. Despite noticeable shortcomings (superficiality), broad knowledge allows for

a holistic analysis of reality, for a conscious choice of the type of participation in culture or the way of spending free time. Deep knowledge does not have to be the opposite of broad knowledge. Both of these types of knowledge occur together, it is only about individually considered proportions between them. After all, deep technical, medical and legal knowledge does not exist in opposition to broad knowledge of the humanities and social sciences (it must be admitted, however, that the reverse relationship is rare).

The durability of all the types of knowledge distinguished depends to a large extent on whether it was passed on by someone (teacher, lecturer, co-worker, and earlier – parents) or whether it was acquired independently (it can be discussed whether knowledge can be passed on to someone, it can certainly be done in the case of information). Therefore, the cycle of passivity – activity, referring to the intellectual readiness to assimilate new knowledge and integrate it into existing cognitive structures, is of significant importance. From a research perspective, it is important to capture the moment when there is, individually understood, a transition from acquired knowledge (passive form) to acquired knowledge (active form). An excessively extended passive form leads to dependence on the person providing information, frees from independent search for information and creating the foundations of knowledge from it. In this context, the tasks of educational institutions can be considered to arouse the cognitive curiosity of pupils/students, strengthen their internal motivation and encourage them to critically assess (self-evaluate) the current individual level of knowledge. It can be expected that the proper implementation of these tasks will be conducive to the practical implementation **of the idea of lifelong learning**.

Considerations on the impact of artificial intelligence on the way knowledge is acquired and used in practical situations are very topical. Undoubtedly, thanks to artificial intelligence methods, factual, procedural and semantic knowledge, as well as knowledge about experts, can be easily accessed. The acquisition of structural knowledge is more complex, as the determination of cause-and-effect relationships is related to independent intellectual work, in which artificial intelligence also has a role to play, but it will not replace logical thinking, intuition and individual experience.

Problems of integration of colloquial and scientific knowledge

An important feature of individual knowledge is the integration of its two types: common knowledge and scientific knowledge. Common knowledge is, although it does not have to be, the opposite of scientific knowledge (cf. Łukaszewski, 2008, pp. 20-23, 27-35). It is acquired through more or

less conscious interaction occurring in a variety of professional and social situations. The exchange of information with other participants of our everyday life is a common practice of communication at school, university, company, as well as in the family and in a group of friends. The source of common knowledge is also the observation of the activity of other people, phenomena and processes that we witness. It can also be the result of personal experiences and experiences known to us from the transmission of other people (family transmission plays an important role). Cultural traditions and information provided by modern media are also important. Depending on the assessment of the reliability of the sources used, common knowledge is a collection of more or less scientific information. The place on the scale: colloquiality – scientificity is therefore a derivative of the subjective attitude to the sources of information coming to us. If the source of information is reliable in our opinion, we are inclined to consider colloquial information as scientific (this regularity is often used for propaganda or advertising purposes). Otherwise, even scientifically verified information is considered colloquial. Therefore, in the education process, attention should be paid to the origin of the information that is introduced into the minds of recipients, and then to the analysis of its credibility (cf. Kwiatkowski, S. T., 2021, pp. 75-77). This is a kind of educational challenge in a situation of easy access and mass use of unlimited sets of information obtained from Internet sources.

By granting everyday knowledge its rightful place in the individual body of knowledge, it should be emphasized that it cannot replace scientific knowledge in any case. However, it can complement it with the interpretation of experiences and intuitive threads helpful in making some decisions.

Unlike common knowledge, scientific knowledge is based on research procedures. It should be noted that they vary greatly depending on specific fields and even disciplines. Scientific knowledge is approached differently in the field of technical sciences and differently in the field of social sciences. In the latter, differences can be observed already at the level of fields of knowledge – different research procedures are used, for example, in psychology and in the area of pedagogy.

The basic features of scientific knowledge include:

- empirical (data and resulting information are the result of verifiable observations and experiments),
- logic (use of logical operations, logical inference),
- objectivity (independence from the subjective beliefs of the researcher, as well as from the place and time of research),

- versatility (operating with theories and models, the possibility of application in various situations),
- regularity (logical order, clear and transparent structures),
- repeatability (research that is the basis of knowledge should always lead to the same results),
- criticality (readiness to take into account critical opinions, to continuous verification and possible modifications),
- linguistic precision (use of defined terms, avoiding ambiguity and arbitrary interpretation),
- falsifiability (allowing for the possibility of refuting claims thanks to new discoveries and new research tools),
- cumulative (development through the acquisition of new results and their integration into existing data and information structures) (cf. Zemło, 2022).

These features indicate that scientific knowledge can be considered as a kind of diagnostic knowledge (answering the question: how is it?) and as the foundation of all economic and social forecasts (answering the question: how can it be?).

The integration of colloquial knowledge with scientific knowledge is a natural process, a characteristic feature of all social interactions. Exceptions may be made in situations where a person or groups of people are isolated or self-isolate from people who draw and transform information from other sources. Examples of such situations are beliefs, based on common knowledge, about the harmfulness of vaccines or the reliability of folk medicine recommendations. As practice teaches, polemicizing with the propagators of this type of colloquial knowledge is extremely difficult. There will always be cases of complications after taking the vaccine or evidence of the healing properties of medical procedures passed down from generation to generation. The followers of everyday knowledge do not accept the findings resulting from scientific analyses and experiments, they are distrustful of the world of science (this applies not only to medicine and pharmacology, but also, for example, economics and law), seeing it as a game of interests and the pursuit of profit from the commercialization of discoveries, which, in their opinion, have not undergone full empirical verification. On the other hand, admirers of scientific knowledge attribute to it the status of infallibility and are not willing to engage in discussions with people convinced of the effectiveness of common knowledge and its practical applications. So is the situation hopeless and we are, as a society, doomed to the parallel functioning of two realities? Is there any common ground for agreement and compromise?

It is to be hoped that education at all levels and in all forms can and should be a kind of common ground. The educational process can be a kind of dialogue, exchange of information and arguments in those areas where, apart from scientific laws and theories (scientific knowledge), professional and social experience (colloquial knowledge) counts. Such areas certainly include the field of social sciences, which, as the name suggests, focuses its attention on the social aspects of scientific research, on its social, i.e. practical, dimension. In this field, to which pedagogy belongs, as a scientific discipline, it is important to select research problems and determine the ways leading to their solution and implementation of results. In all the distinguished stages, you can support yourself with colloquial knowledge resulting from personal experience and knowledge of dynamically changing external conditions.

Integration of knowledge from different scientific fields and disciplines

A separate problem that is difficult to solve is the integration of knowledge within scientific fields and disciplines (and even more so between fields and disciplines). Let us remind you that the current classification of scientific fields includes: humanities, engineering and technical sciences, medical sciences and health sciences, agricultural sciences, social sciences, exact and natural sciences, theological sciences and the field of arts *(Regulation...*, 2018). The integration of knowledge from such distant fields of science is basically only possible in the process of solving real problems. Then knowledge from various fields, and in practice disciplines, is identified and focused around the analyzed problems and the resulting specific tasks (such a focus of knowledge occurs in projects on the border of medical sciences and health sciences with exact and natural sciences, as well as engineering and technical sciences).

Seemingly, it is easier to integrate knowledge within a given field. In the case of e.g. the field of social sciences, we are dealing with such diverse disciplines as: economics and finance, socio-economic geography and spatial geography, security sciences, social communication and media sciences, political and administrative sciences, management and quality sciences, legal sciences, sociological sciences, pedagogy, canon law and psychology. It seems that also in this case we can speak of problem-oriented integration rather than holistic integration. With a more detailed analysis, it is possible to distinguish relationships, e.g. pedagogy, with selected elements of knowledge from other social disciplines, but in practice they are of a trace nature. The exception is the observed integration of pedagogical knowledge with psychological and sociological knowledge, and sometimes also with knowledge in the field of economics and finance (economics of education) and law (education law).

Knowledge in the process of formal, non-formal and informal education

Analyzing the problem of knowledge from the perspective of the teaching-learning process, and in a broader perspective - the lifelong learning process, it is possible to distinguish knowledge acquired and acquired during formal, non-formal and informal education.

The period of formal education, i.e. school and academic education, gives pupils and students a chance to come into contact with scientific knowledge of varying breadth and depth. The point is that this knowledge should be the basis for independent acquisition of its subsequent elements after obtaining school certificates and university diplomas. It is important to arouse in this educational period the conviction that knowledge is an autotelic value, that it is at the same time an important component of the individual educational capital of each learner. It is up to teachers and academic lecturers to determine their attitude to knowledge in the future (cf. Kwiatkowski, S. T., 2023, pp. 131-136). It is worth noting that in the period of formal education, pupils and students do not yet have sufficiently well-founded colloquial knowledge (mainly due to the lack of professional and life experience and limited intergenerational contacts – which boil down to family relationships). Therefore, it is difficult to expect the integration of scientific knowledge with colloquial knowledge – so it can be said that graduates enter the labour market mainly with scientific knowledge (this does not apply to people who have combined science with professional work).

The period of formal education, chronologically speaking, is followed by periods of non-formal and informal education. They last much longer than the period of formal education – they begin immediately after starting professional work and last until the end of life. For this reason, they are extremely important for gathering new knowledge, processing it and using it in practical situations. In the case of non-formal education, various types of courses, trainings, workshops and seminars serve this purpose. The knowledge gained during this type of activity is largely practical – it is a condition for proper mastery of the necessary professional skills. Therefore, this knowledge is rather narrow, oriented towards professional tasks, and at the same time deep enough to enable their implementation in a responsible manner, in accordance with appropriate standards. In this case, scientific knowledge is superimposed on colloquial knowledge gained through interactions with other participants in non-formal education.

Non-formal and informal education are multi-faceted. They run in parallel, usually involving the same employees who confront scientific

knowledge with common knowledge on a daily basis. The difference is that the knowledge resulting from informal education is mainly colloquial. This knowledge is acquired involuntarily – while observing the work of other people and talking about professional topics (sharing hidden knowledge by experienced employees).

Conclusion

Knowledge, both scientific and colloquial, is a constitutive component – in addition to social skills and competences – of individual educational capital. It is a constitutive component in the sense that it is the basis for the development of skills and has an impact on self-awareness in relation to social competences. Knowledge is a component that is constantly multiplied in the scientific and colloquial spheres – in various proportions determining its practical significance. This multiplication of knowledge should be the main goal of all kinds of educational and professional activities – and as a result, a determinant of a social position focused on continuous improvement and deriving satisfaction from a fuller understanding of the world around us.

References:

Audi, R. (2005). *Epistemology. A conteporary introduction to the theory of knowledge*. New York: Routledge.

Boshoff, N. (2014). Types of knowledge in science-based practices. *Journal of Science Communication, 13(3),* 1-16.

Dampney, K., Busch, P., Richards, D. (2002). The Meaning of Tacit Knowledge. *Australasian Journal of Information Systems*, *10(1)*, 3-13.

de Jong, T., Ferguson-Hessler, M. G. M. (1996). Types and qualities of knowledge. *Educational Psychologist, 31(2)*, 105-113.

Falkowski, A., Maruszewski, T., Nęcka, E. (2018). Procesy poznawcze. W: J. Strelau, D. Doliński (red.), *Psychologia Akademicka. Podręcznik.* Tom 1 (s. 339-510). Gdańsk: Gdańskie Wydawnictwo Psychologiczne.

Kwiatkowski, S. M. (2020). Kompetencje przyszłości. W: S. M. Kwiatkowski (red.), *Kompetencje przyszłości* (s. 14-29). Warszawa: Wydawnictwo Fundacji Rozwoju Systemu Edukacji.

Kwiatkowski, S. M. (2022). Transfer kapitału edukacyjnego – perspektywa międzypokoleniowa i międzykulturowa. W: E. Ogrodzka-Mazur, A. Szczurek-Boruta, B. Grabowska, A. Szafrańska (red.), *O tożsamości, kondycji i powinnościach pedagogiki – tradycja i współczesność* (s. 414-424). Toruń: Wydawnictwo Adam Marszałek.

Kwiatkowski, S. T. (2021). Nowoczesne technologie i cyberprzestrzeń w zawodzie nauczyciela. W: A. Jegier, S. T. Kwiatkowski, B. Szurowska, *Nauczyciel w obliczu szans i zagrożeń współczesnego świata w perspektywie kształcenia i pracy zawodowej* (s. 64-80). Warszawa: Difin.

Kwiatkowski, S. T. (2023). Pedeutology and hermeneutic pedagogy: Encounter between teacher and student in light of the concept of vocational fit. *Studia z Teorii Wychowania, t. XIV, 4(45)*, 125-148

Kwiatkowski, S. T. (2024). Theory of education and pedeutology in psychological approach - the perspective of personality and socio-emotional competences of the teacher and their importance in the educational process. *Studia z Teorii Wychowania, t. XV, 3(48)*, 113-137.

Łukaszewski, W. (2008). *Wielkie pytania psychologii.* Gdańsk: Gdańskie Wydawnictwo Psychologiczne.

McKee, P., Barber, C. E. (1999). On defining wisdom. *The International Journal of Aging and Human Development, 49(2)*, 149-164.

Rozporządzenie Ministra Nauki i Szkolnictwa Wyższego z dnia 20 wrześni 2018 r. w sprawie dziedzin nauki i dyscyplin naukowych oraz dyscyplin artystycznych. Dziennik Ustaw 2018 poz. 1818.

Zemło, M. (2022). Wiedza naukowa – najbardziej ceniona postać dobrostanu intelektualnego. *Roczniki Nauk Społecznych, t. 15(40), 1,* 81-98.

Zhang, K., Shi, J., Wang, F., Ferrari, M. (2022). Wisdom: Meaning, structure, types, arguments, and future concerns. *Current Psychology, 42*, 15030-15051.