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## Selected Contexts of the History of the Progress of Knowledge about the Educational Potential of a Child in the Prenatal Period

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*Wybrane konteksty historii kształtowania się wiedzy na temat potencjału edukacyjnego dziecka w okresie prenatalnym*

**Abstract:** The aim of the study is to show the progress of knowledge regarding the developmental and educational potential of a child in the prenatal period. The educational potential in this study is defined as human development and educational resources. The author analyzes the ways of defining a child and childhood, signals the progress of social sciences that took place at the end of the 19<sup>th</sup> and in the 20<sup>th</sup> centuries, which was of great importance for the transformation of the concept of a child and childhood with its pre-birth period. The author also reviews the assumptions of contemporary psychology and prenatal pedagogy, and encourages a discourse on human potential from the moment of conception.

**Keywords:** prenatal child; prenatal psychology; prenatal pedagogy; human development and educational resources

**Abstrakt:** Celem opracowania jest ukazanie wybranych kontekstów historii postępu wiedzy na temat potencjału edukacyjnego dziecka w okresie prenatalnym. Potencjał edukacyjny zdefiniowany został jako zasoby rozwojowe i edukacyjne człowieka. Autorka przeprowadziła analizę sposobów definiowania dziecka i dzieciństwa oraz zasygnalizowała postęp nauk społecznych, do którego doszło pod koniec XIX i w XX wieku, a który miał duże znaczenie w procesie transformacji koncepcji dziecka i dzieciństwa wraz z jego okresem przedurodzeniowym. Ponadto w artykule znajduje się przegląd głównych założeń współczesnej psychologii i pedagogiki prenatalnej, zachęcający do dyskursu nad edukacyjnym potencjałem człowieka od momentu jego poczęcia.

**Słowa kluczowe:** dziecko w okresie prenatalnym; psychologia prenatalna; pedagogika prenatalna; zasoby rozwojowe i edukacyjne człowieka

## INTRODUCTION

Man, although he does not do it volitionally, develops most spectacularly in the prenatal period throughout the ontogenesis. An outstanding contemporary researcher of the prenatal period in human life Dorota Kornas-Biela rightly notices that interest in the earliest stage of human mental development is a new phenomenon in the history of science.

For centuries, childhood was not treated as a separate and important stage in development. The context of the emergence of these interests was determined by many cultural and social factors, but undoubtedly the greatest stimulus for the emergence of prenatal psychology was the achievements in the field of medical techniques enabling insight into the intrauterine environment. (Kornas-Biela 2007, p. 14)

Kornas-Biela is convinced that the progress of medical sciences and technology, which contribute to the continuous improvement of research using “more and more complex devices”, made it possible to present a man, even before birth, as a subject of activity who is “(...) capable of receiving stimuli, reaction, orientation and expression, competent in relation to the requirements and possibilities of the pubic environment” (*ibid.*).

Both the fact of improving the techniques of this insight into the intrauterine environment of human life during the course of his mother’s pregnancy, and the emergence of a new trend of psychology “(...) focused on human development during his life (life-span developmental psychology) motivated to deal with the development of the child before birth” (*ibid.*). Currently, thanks to the ultrasound examination, you can see the baby in the womb, you can observe its movements, and thanks to the most modern 3D and 4D ultrasound, you can see the baby’s face even from close range.

Kornas-Biela notes that the ultrasound examination is not only of medical significance, but also allows to establish a bond with the child before its birth, which may have a particularly good influence on the course of pregnancy and preparation for parenthood, which is important, also to a father who is not directly involved in the sensory experience of the woman due to the development of the fetus in her body. Kornas-Biela points out that the consequences of ultrasound examination are beneficial to the course of pregnancy development, due to the following reasons:

- giving a sense of the child becoming real as a separate human person,
- changing the perception of the mother’s body – it becomes a kind of safe place, conducive to the development of a safe “home” for the child,
- giving concrete expression to the child’s appearance and behavior,
- sensitivity to early movements resulting from seeing the baby,
- shifting attention to the child,

- improvement in the well-being of the mother suffering from pregnancy discomfort,
- the emergence of the need for an emotional bond and communication with the child, often also in the case of people who did not accept the situation of pregnancy,
- awareness of the child's health condition occurs, which – in the case of positive experiences in this area – reduces anxiety about his health,
- the need (desire) for tactile contact with the child develops, which will be conducive to establishing a bond immediately after birth (e.g. the need for hugging) (Kornas-Biela 2002, p. 161).

In order to perceive human potential at the threshold of life, including educational potential, defined as human development and educational resources, it is necessary to realize that: "Human life is a miracle of nature. For it to develop properly, it is necessary to create appropriate development conditions and provide future parents, and in particular the mother, with sufficient knowledge on how to properly care for them" (Skotnicka 2014, p. 68). Importantly, human development, from conception to birth, can and should be indirectly supported in the surrounding social space.

Social pedagogy along with the caring, social and cultural directions that intertwine within this subdiscipline are also convincing to create optimal, social conditions for the development of a child who needs proper support from adults to function harmoniously. As Katarzyna Segiet argues, "(...) two basic processes have become the subject of getting to know social pedagogy as a practical discipline – prevention along with compensation implemented by various social entities" (Segiet 2019, p. 29). The author also emphasizes that "every child must be supported in their development, helped by everyone, without making inquiries as to whether they need this help" (*ibid.*). It can, therefore, be concluded that while looking for the educational potential of a child in the prenatal period and focusing on the importance of creating relationships between adults and a child in the pre-birth period for creating optimal conditions for supporting development, there appear certain experiences and traditions of social pedagogy, which largely deals with also problems of the family, especially today, because

(...) "new" social pedagogy looks for the sources of threats, explains the meaning and effects, showing the deepening social extremes and differentiation. When analyzing the social consequences of transformation, social educators pay attention to the link between social change and the source of individual changes. They analyze the living conditions of families and children as well as existential problems and the possibilities of dealing with them in their living environment. (*ibid.*)

## CHILD AND CHILDHOOD THROUGHOUT HISTORY – AN ATTEMPT AT SYNTHESIS

For many years, the child and childhood, along with the prenatal and perinatal periods, remained a niche topic. We read about the “difficult” history of childhood itself, as a theoretical construct, in Philippe Aries (1995). Both educators, sociologists, historians and other researchers more and more often, and more importantly – in an undeniable way – refute the model of childhood, which is unfavorable for the image of the educational potential of a man at the threshold of his life, in which for many years the belief that a child is a specific “semi-product”, and it is not until he gains independence under the influence of “training” performed by adults, that – at the time of reaching his own adulthood – he has a chance to become a human.

One of the authors who recall in her studies two childhood constructions, about which Gunilla Dahlberg, Peter Moss and Alan Pence also write, is an advocate of democracy in the process of supporting child development – Katarzyna Gawlicz. She reminds that the first model of childhood perception is rooted in the modernist perspective and is based on the belief that a weak, poor child requires help and support from adults in order to become a full-fledged being (Gawlicz 2011). A child, in this childhood construction, is a reproducer of knowledge, identity and culture. A child – a raw “semi-finished product” – will become a human being only when it successfully passes certain predetermined “standardized processes”: “working”, “fixing”, “correct shaping” (Dahlberg, Moss, Pence 2007). Until the adults verify the effects of this “servicing” of the child, the child will appear weak. In the model of childhood perceived in this way, goals and normative results adopted in advance, are defined by “strong” – in relation to the child – adults (Dahlberg, Moss, Pence 2007; Gawlicz 2011).

In the second concept – corresponding to non-directive, permissive pedagogy – we deal with the image of the child as the subject of one’s own actions. The child is an eminently competent person, and although these competences differ from those of adults, they are extensive and simply different. In this concept, the child appears as a causative being, a person who co-creates knowledge, identity and culture. This model of the child and childhood emerges within a new paradigm in the sociology of childhood, in which it is assumed that children have the power to act and process the world and take an active part in the process of constructing their own life and the society in which they live (Segiet 2011).

Nowadays – as educators – we are fully convinced that a child to be perceived in terms of a “full person” does not have to become such, because it is. Thanks to the pedagogy of new education and the achievements of developmental psychology, medical sciences, childhood sociology, social pedagogy, neurobiology and other areas of scientific knowledge, we now see a child’s capital, potential. We can even call this “initial” capital which – as adults – we are obliged to bring out and uphold. Just like Janusz Korczak (the pen name of Henryk Goldszmit), we should continue to convince

that children are people with their own voice, able to make their own socially “wise” choices, and can even “rule themselves” if we create an appropriate environment for them and we support the development of children’s autonomy from the very beginning (Ciesielska, Puszkin 2009).

This path is followed, among others, by the aforementioned Gawlicz, who also explains that in the second model – i.e. the model of the child as a “strong offender” – young people are to be heard and to take part in the decision-making process. Turning to such a way of defining the construct of childhood and the child itself, along with its potential (also educational), leads to the adoption of the philosophy of accompaniment in development, rejection of the authoritarian “dominance” over the child on the part of an adult, rejection of instructions, prohibitions and orders in favor of a sensitive and constant observation leading to non-invasive monitoring of the developmental progress of an individual (Telka 2017, p. 18). In the model presented in the field of childhood sociology, it is assumed that all children are intelligent and that they actively learn from the moment they are born. In this approach, they need space, focus on the present, the right to initiate solutions, projects, and the right to be treated seriously. Thus, childhood and child are in no way defined through the prism of adulthood.

This type of concept was already used during the pedagogy of “new education/upbringing”, also known as “progressivism”, “new school”, “active school”, “school of life”, “pragmatism pedagogy”, “functional pedagogy” (Jamrożek 2019, p. 693). One of the factors leading to this pedagogical reform movement was precisely the achievements made in the field of biomedical and psychological sciences conducted both in Europe and the United States of America. These studies, carried out at the turn of the 19<sup>th</sup> and 20<sup>th</sup> centuries, provided reasonable knowledge about the child and its nature. At that time, the first Laboratory of Physiological Psychology (founded in 1892 at the Sorbonne by Alfred Binet) was created for the needs of research on child psychology (*ibid.*). Wiesław Jamrożek, recalling the opinion of Kazimierz Sośnicki, emphasizes that it is Binet who considers himself the “father” of child psychology, experimental pedagogy, also known as “pedology” or “child science” (*ibid.*). The key factor here seems to be pedagogical naturalism, which – thanks to Ellen Key, referred to as the heir to the views of Jean-Jacques Rousseau – emphasized “(...) respect for the individuality of the child, perceiving the upbringing process as natural, analogous to other processes taking place in the natural world, recognizing upbringing as spontaneous, natural »development from within«” (*ibid.*, p. 695).

As the aforementioned historian of education points out, “the striving for (...) upbringing in the spirit of maximum consideration of the child’s characteristics (his individual needs, interests, abilities, spontaneous activity), characteristic of »new upbringing«, supported at the beginning of his development with the achievements of biomedical and psychological sciences, was reflected in interwar Poland (...)” in the concept of Henryk Rowid or Jerzy Ostrowski (*ibid.*, p. 701). In this context, it is impossible not to mention the extraordinary merits of Janusz Korczak (known as

*Pan Doktor* ["Old Doctor"]). It was he who, clearly leaning towards naturalism in its ontological and epistemological version, as well as the biopsychological concept of upbringing, "created an original educational system in a nursing home" for orphaned children (in "Dom Sierot" and "Nasz Dom" institutions) (*ibid.*). It is to this researcher that we owe the strong emphasis that the child is a full human being, not a "deposit", and in the process of raising a child, children's rights should be respected. These are:

- the right of today,
- the right to make the child what it is,
- the right to respect (*ibid.*).

The Old Doctor persuaded adults that one should "(...) instruct, guide, show the right way, restrain, justify, warn, prevent, force and fight" (Tschope-Scheffler 2011, p. 54) but not a child, but educators. He believed that the way of influencing children, which is aimed at "(...) suppressing all that is the will and freedom of the child, the strengths of his soul, the strength of his needs and his intentions" leads to the fact that the child becomes "(...) polite, obedient, good, comfortable (...); but we do not think that it is internally bound and incapable of life" (*ibid.*).

Thinking about a child as a strong co-author of our own education, we nowadays refer to two concepts of the birth of human intelligence. And so:

The greatest development psychologist of the 20<sup>th</sup> century, Jean Piaget, argued – by observing three of his own children – that intelligence is born in action and through action. When a child has a chance to actively experiment, he gradually constructs his knowledge about the world, his model of the world. His greatest opponent – Lev Vygotsky – wrote that the child is not a lonely researcher, but a socio-cultural being who, in a relationship with another person, learning a language, enters the world of culture and becomes part of a community.

Nowadays, a relatively similar discourse is being conducted by

(...) two of the most famous researchers in the development of young children – Alison Gopnik and Katherine Nelson. They ask if the child is a cradle scientist, philosopher and reality explorer, or rather an inhabitant of the planet Mind; is he an experimenter and statistician who constructs theories or is he "by nature" social, and through interactions with other people he becomes a competent inhabitant of the planet Mind, i.e. a planet inhabited by other beings endowed with internal worlds. (Białecka-Pikul, Białek, Rynda 2011)

American psychologist Alison Gopnik (2004, 2010) argues in her publications that the period of early childhood is a time devoted to comprehensive learning, research and exploration of the world without any restrictions. This personal time for a human in the early stages of life is a time of experimenting, testing hypotheses and exploring the world that a child perceives in a way that is not limited by previously acquired knowledge. Gopnik clearly supports the concept of sources of potential and intelligence

in the child himself, although she attributes great importance to the child's immediate family in the process of child development.

At the same time, it is impossible not to consider the validity of the idea of "the inhabitant of the Planet of the Mind", because children, while still in their infancy, have a strong motivation to interact with other people (Moll, Tomasello 2007). We come to such a belief, for example, through studies on the theory of attachment. It should also be noted that this point of view is supported by Kristin Liebal, Malinda Carpenter and Michael Tomasello (2013). The authors, emphasize that the child is firmly embedded in relationships with other people and develops most effectively through mutual activity in a shared cultural circle.

The perception of a child as a strong co-creator of one's education and one's own life makes it possible to undertake "(co-)work", which in the concept of educational constructivism is called "building scaffolding" (Brzezińska 2015). This scaffolding is a process of responsive learning in cooperation with an adult, which follows shared action programs taking place in mutual (balanced) interaction characterized by observation, readiness to engage in dialogue in the sense of children's needs, in mutual motivational closeness. This point of view also applies to the way of thinking about human education in the prenatal period.

By embedding the beginnings of human life in the concept of educational constructivism, one can express the conviction that early childhood education is of fundamental importance, because in each subsequent stage of its development the child "(...) enters with the competences acquired earlier, therefore, all these skills present" at the start "are their specific initial capital" (*ibid.*, p. 130). This foundation is the basis of the scaffolding, the basis for "building new skills and acquiring new knowledge" (*ibid.*), which an adult – during subsequent interactions with a child – may multiply or waste, depending on their own competences and personal motivation.

## PRENATAL PSYCHOLOGY AND PEDAGOGY IN THE 20<sup>TH</sup> AND 21<sup>ST</sup> CENTURIES

According to Maria Przetacznik-Gierowska, when in the 19<sup>th</sup> century the face of scientific knowledge changed substantially, certain strongly developing scientific trends transformed "(...) the current picture of the world – extremely heterogeneous and diverse – into a great field of empirical research" (Przetacznik-Gierowska 2011, p. 12), and among the discoveries and scientific theories emerged and developed "(...) disciplines that had not existed independently, previously subordinated to other fields of knowledge. This is how scientific psychology emerged at the end of this century and its various departments emerged, including developmental psychology. Its foundations in the nineteenth century can be found primarily in the natural sciences and the methodology developed by them" (*ibid.*).

Within developmental psychology, an area called “prenatal psychology” has emerged, which aims to recognize, describe, explain and apply knowledge “concerning the subject of its interest” (Kornas-Biela 2007, p. 17). Kornas-Biela points out that “(...) the most specific subject of research in this field is human development in the first, intrauterine phase of life, while physical development, especially the development of the nervous system, is considered in terms of the structural and functional basis of mental development and the possibility of acquiring various competences” (*ibid.*). Therefore, thanks to prenatal psychology, we learn about issues related to human competences at the threshold of life, such as:

(...) anatomical and functional development of individual structures of the body (e.g. the nervous, muscular and neurohormonal systems and senses), development of psychomotor skills, acquiring competences in the field of all sensory analyzers (including pain and smell), intersensory perception, remembering and learning, manifestations of consciousness, activity rhythms (biorhythm, sleep and wake phases), behavioral states, emotions, reactions in social contact, the emergence of various manifestations of the functioning of the psyche, as well as the diversification of development. (*ibid.*)

What is also important for prenatal psychology are the issues related to the “(...) transfer of mother’s mental experiences to the child” and “(...) their mutual influence on the physiological, mental and behavioral paths” (*ibid.*). Research is also carried out on the impact of various emotional experiences of the mother, including those of a stressful, depressive and anxious nature, on the development of her child.

Kornas-Biela explains that prenatal psychology “(...) also penetrates the issue of the causes and consequences of various forms of violence (e.g. abuse, neglect) towards the prenatal child (fetal abuse)” (*ibid.*). In addition, the author pays her attention to such problems as correct or incorrect development of mental processes and “(...) child’s behavior before birth, during childbirth, in the first days after birth, as well as in difficult situations, e.g. in case of pregnancy with special needs” (*ibid.*). We also read that:

The subject of prenatal psychology, as developmental psychology of the prenatal period, are the following issues: regularities and mechanisms of development; critical periods; stage, continuity and stability of development; development factors acting after the conception and in the past, directly or indirectly (determining, modifying, stimulating, optimizing, hindering, disrupting), different expression of their actions, changes of their meaning during development, as well as the consequences of their actions and cooperation. (*ibid.*)

As part of modern prenatal psychology, research is carried out on the prevention of child developmental disharmony and “(...) treatment of problems that have their source in the prenatal period of life”. Thanks to the advancement of knowledge about human life in the pre-birth period, researchers also pay great attention to “(...) psy-

chological aspects of the functioning of people who take care of children” (*ibid.*). Since the psychological approach to man emphasizes the continuity of his development, “(...) even the earliest influences and experiences are important for a comprehensive perception of life. This is metaphorically expressed by the following statements: »the body remembers«, »the brain forgets nothing«, »it is not true that what you are not aware of cannot hurt you«” (*ibid.*, p. 20). The aforementioned author also develops the issue of widely understood prenatal education and derives from prenatal psychology theoretical premises for a new area of educational sciences, namely prenatal pedagogy.

Przetacznik-Gierowska argues that one of the Polish precursors of developmental psychology, paying attention to human development in the period before the child’s birth, was an enthusiast of naturalism and empiricism. It was professor of chemistry and medicine at the University of Vilnius, Jędrzej Śniadecki (1768–1838) (Przetacznik-Gierowska 2011, p. 11). The researcher defined the prenatal period in human life as “the period from conception to birth”, i.e. “the life of the fetus” (*ibid.*).

Polish developmental psychology, despite the difficult historical conditions at the turn of the 19<sup>th</sup> and 20<sup>th</sup> centuries, developed quite dynamically. Already in 1901, in Lviv, one of the first psychological laboratories in Europe was established by Kazimierz Twardowski (1866–1938), another one – in 1903 in Kraków – by Władysław Heinrich (1865–1957), and in 1910, he established such a laboratory in Warsaw together with Edward Abramowski (1869–1918) (*ibid.*, p. 19). We also know that “(...) the development of the child’s psyche was then primarily studied by Jan Władysław Dawid (1859–1914) and Aniela Szycówna (1869–1921)” (*ibid.*). There should also be noted the great achievements of Polish developmental psychology in the interwar period, which

(...) flourished with the establishment of Chairs of Pedagogical Psychology at universities in Warsaw and Kraków in 1928. The heads of these departments: Stefan Baley and Stefan Szuman are two outstanding personalities of those times. They refer to the already existing native and foreign traditions, educated generations of psychologists and educators who understand the complex problems of development in childhood and youth. (*ibid.*, pp. 25–26)

Subsequent discoveries on the discussed area then appeared after 1956, when “(...) there was an opening to the world and contacts with Western psychology were resumed, and new academic centers educating psychologists were opened (...). After 1956, the progress of this branch of psychology was due to frequent international research, internships and conferences, as well as access to new journals and books” (*ibid.*, p. 27). In the face of the phenomenon of mass post-war orphanage, Western researchers, as early as in the 1950s, undertook research on the effects of an early separation between a child and its mother. One of the leading researchers on this issue was Rene A. Spitz (1946), and his achievements found “(...) its continuation in John Bowl’s attachment theory (1969) and in the research of M.D.S. Ainsworth (1969) on the process of children’s socialization” (*ibid.*, p. 27). Psychoanalytical and behavioral

inspirations were, in turn, reflected in the achievements of Robert R. Sears in several centers in the United States. Importantly for the topic discussed in this study: “They emphasize the role of early experiences that the child acquires during nursing and upbringing procedures in the family, as well as the mutual multilateral relations between parents and children, which gave rise to various types of interaction theories” (*ibid.*, pp. 27–28). During this period, the concepts of ecologists also developed, which resulted in “(...) research on the phenomenon known as imprinting, and experiments carried out by D. Hebb and D.H. Barlow on higher animals” (*ibid.*, p. 28).

It is also worth clarifying after Maria Tyszkowa that “(...) traditional developmental psychology assumed that the developmental changes of the psyche are causally related to the processes of biological maturation of the organism, so they occur only during childhood and adolescence” (Tyszkowa 2011, p. 31). However, because the subject of research in psychology perceived in this way were changes in the development of the psyche and behavior of children and adolescents, it was identified with psychology dealing with children and adolescents only until they reached maturity. It was assumed that “(...) development processes end with reaching maturity, and the mental life of an adult is characterized by stability and lack of developmental changes” (*ibid.*). Nowadays, this type of assumption is rejected, arguing that a person’s psychological development continues throughout his entire life. “Paying attention to developmental changes occurring in adulthood, as well as in the prenatal period, means a significant change in the way the subject of research in modern psychology of human development is perceived compared to traditional developmental psychology, which studies the mental development of children and adolescents” (*ibid.*).

#### EDUCATIONAL POTENTIAL OF A PRENATAL CHILD AND CONTEMPORARY SCIENTIFIC ACHIEVEMENTS

The fact that prenatal development occurs at an extraordinary pace and that this development can be indirectly supported is of the subjects of interest to more and more scientists. In the publication from 2017, which is extremely important for the discussed issue, devoted to the child – an active participant in childbirth – we turn to the reflection of the French obstetrician Frédéric Leboyer, who in 1974, drew attention to the world of non-violent birth. This issue seems to be relevant to this day, because we hear many times about situations in which the birth of a human being – instead of being a unique experience, saturated with the work culture of medical staff, emotional peace and joy of parents, a sense of security and the opening of one of the most beautiful chapters in the life of adults – leave so much to be desired that mothers – after undergoing the first childbirth – decide not to have another child due to the perinatal trauma. More and more often, the need for psychotherapy in terms of the prenatal and perinatal bond is recognized, which – as a result of difficult emotional

experiences – is very necessary for a person who was conceived and born (without taking part in the decision to bring him to life) to have a chance for a harmonious future.

Therefore, the currently selected areas of obstetric psychoprophylaxis, prenatal psychology and prenatal pedagogy are connected with the developmental and educational potential of a child in the prenatal period. They deal with factors influencing the psychophysical well-being of the mother and child during pregnancy and childbirth (Kędziora 2012, p. 289).

The aforementioned 20<sup>th</sup>-century publication by Leboyer, which was a breakthrough, aroused a lot of emotions – especially in the context of the “routine actions” of medical personnel, accustomed to treating their youngest charges as objects. It also referred to the issue of perceiving the newborn as a sensitive being for whom childbirth could become a completely new phenomenon, an empowering or traumatizing experience. Every person who has had the opportunity to assist in childbirth is well aware that childbirth is not a physically pleasant sensation – neither for a woman giving birth, nor for a newborn child. Often this situation is accompanied by strong pressure, nervous atmosphere, a sense of fear, anxiety, feeling particularly strong, physical pain. In such difficult circumstances, participants in childbirth need an atmosphere of kindness and a sense of security, which can also be co-created by medical personnel. Emilia Lichtenberg-Kokoszka, focusing on the perinatal experiences of a child, emphasizes that:

The abundance of suffering during birth is caused by the enormity of experiences, their diversity and traumatic richness. A newborn baby feels everything – completely, without choice, without filter, without selection. The freshness and sharpness of the senses and the fact that the sensations are not yet ordered into perceptions make the stimuli stronger, more violent, almost unbearable. Moreover, when a child is born, he finds himself in an unfamiliar world of contrasts, where everything is good or bad, warm or cold, pleasant or unpleasant, dry or wet. His impressions get mixed up. (Lichtenberg-Kokoszka 2017, p. 25)

In his publication, Leboyer suggests silence, concentration, respect and dignity to give birth (Leboyer 1986). The author also presents the optimal conditions for a dignified birth, inclining to respect every moment, including the moment when the umbilical cord is cut, which – in his opinion – should be cut off only when it stops pulsating due to the child’s physical and mental well-being. All medical procedures should be aimed at the aforementioned well-being of both the child and its mother.

Thanks to the progress of medical sciences, neurobiology, psychology and other related sciences, we have significant knowledge about the fact that a prenatal child

(...) has specifically human features: perceives with all senses a wide range of stimuli in an appropriate way, some of them can remember, are cognitively and emotionally active. He communicates needs with the help of movements of various intensity and character. Parents driven by

their inner need learn about the child's competences and realize the importance of non-verbal language with which they can communicate with their offspring. (Wojaczek 2017, p. 44)

In Poland, the perception of humans in the prenatal and perinatal periods was significantly changed by Włodzimierz Fijałkowski. Like the aforementioned French scientist, Fijałkowski also emphasized the individuality, personality and value of a human being as an independent entity at every stage of its development, also in the prenatal period (Lichtenberg-Kokoszka 2017, p. 22). Fijałkowski argued that it is not the child that is mute, but "deaf" adults are often insensitive to its "speech" (*ibid.*).

One of the contemporary advocates of searching for ways to support human development and early education is Dorota Kornas-Biela, mentioned many times in this study. The researcher made a significant breakthrough in the perception of the child's developmental potential in the prenatal period, and nowadays introduces the concept of prenatal pedagogy into the field of pedagogical sciences, which she defines as an area of science in the field of pedagogy closely related "to the development of other specific sciences dealing with human procreation and the earliest stage of human life" (Kornas-Biela 2009, p. 11). Kornas-Biela, in her publication devoted to prenatal pedagogy, which is extremely important for contemporary pedagogy, emphasizes at the outset that procreation in a broad sense is not only related to the procreation and birth of offspring – it is related to providing care and supporting the integral development of a child (*ibid.*, p. 7). The author defines prenatal pedagogy as an area of science in the field of pedagogy closely related "(...) to the development of other specific sciences dealing with human procreation and the earliest stage of human life" (*ibid.*, p. 11).

The researcher emphasizes that perceiving prenatal pedagogy in terms of upbringing science, including education, education and self-upbringing, is consistent with the European cultural tradition, according to which "(...) upbringing is understood as a concept referring to the influence of one person on another, changing each of the participants of interaction as well as learning and teaching", because – as Kornas-Biela quotes after Dariusz Stępkowski – "(...) learning and teaching is always »educating«" (*ibid.*). The author also emphasizes the importance of the prenatal relationship with the child, paying attention to what was also noticed by Leboyer and Fijałkowski. Also, like the aforementioned researchers, Kornas-Biela emphasizes the problem of the intensification of various forms of violence against a prenatal child, but she goes a step further – she classifies this violence in detail (*ibid.*, pp. 43–88). For the premises of prenatal pedagogy, this classification is important because each "unconscious knowledge", "unlearned knowledge" results in certain predispositions, preferences, tendencies, inclinations, as well as complexes, compulsions and fears at subsequent stages of life. The author rightly notices that becoming parents is a long-term process starting from the moment of conception of a child, pointing out that the problem of the prenatal relationship of parents with a child is an undoubted challenge for contemporary pedagogy as a science (*ibid.*, p. 43).

We learn that the most common form of child abuse is neglect, which may be medical, physical or emotional (*ibid.*). Each of the forms of violence discussed by the author, both intentional and unintentional, does not remain – as Kornas-Biela demonstrates based on reliable empirical data – without consequences for the emerging and postnatally developing child. What seems to be particularly valuable is the fact that in the publication we also find a proposal to embed certain specific problems in the assumptions of Martin E.P. Seligman's positive psychology, so that, as part of pedagogy, we undertake a thorough analysis of factors that will provide the child in the prenatal period with optimal conditions for its development. Everything that is proposed by prenatal pedagogy as a new area of educational sciences, as perceived by the Lublin researcher, proves that the period of pre-birth development is not a “defective norm” of the development of the decisive period (*ibid.*).

Summarizing the considerations made so far, it should be stated that in modern developmental psychology, including prenatal psychology, and prenatal pedagogy, it is emphasized that a person needs developmental support from the very beginning of life, i.e. from the moment he is brought to life. It is extremely important also in the first period of life, because development then takes place at an extraordinary pace, which is difficult to question considering the fact that during approximately 280 days, corresponding to 40 weeks of pregnancy, a woman only produces an organism consisting of over 200 million cells from just one fertilized cell. “From the first division, it is the development of a psycho-physical-social being who interacts with the environment from the moment of conception” (Skotnicka 2014, pp. 68–69).

## REFLECTIONS

Empowering a child in the prenatal period, caring for the quality of its development while bearing in mind its right to development and respect is particularly important from the point of view of broadly understood humanism, because every person is unique and his life is an undeniable value. This uniqueness is determined, among others, by

(...) the fact of creating – as one of billions of possible combinations – the sex cell of the father and mother. The record of all the characteristics of the organism, concerning the structure and functioning of each body cell, external appearance, abilities, temperament, personality predispositions and susceptibility to diseases is contained in an egg cell of 0.15 mm and a sperm, which is five times smaller than it. (Skotnicka 2014, pp. 68–69)

In order to become aware of both the development in the prenatal period and human potential at the very beginning of its existence, it is worth remembering that the prenatal period is divided, according to the state of modern knowledge, into the following periods:

- pre-embryonic (fetal egg) – from fertilization to the end of the 3<sup>rd</sup> week
- embryonic (embryonic) – from the 4<sup>th</sup> week to the end of the 8<sup>th</sup> week of pregnancy,
- fetal (fetal) – from the 9<sup>th</sup> week of pregnancy to birth (*ibid.*, pp. 69–70).

The pre-embryonic period – relatively short considering the duration of pregnancy – is the first stage of every human being's prenatal development. Then we are talking about a zygote consisting of a sperm and an egg. Just a few moments after fertilization, the fertilized egg is divided, followed by its implantation and subsequent, intensive transformations. In the next period (also very short in the context of pregnancy), there is a rapid growth, so that at the end of this period, i.e. at the end of the 8<sup>th</sup> week of prenatal life, the embryo begins to resemble a human shape. During this time, all organs and systems necessary for post-fertile life are formed. The second stage of prenatal development is, therefore, the time of intense organogenesis, and, thus, a critical period for the possible formation of malformations (*ibid.*).

The last stage of prenatal development is the fetal period of the longest duration. During this time, the human body develops harmoniously, and the organs and systems formed in the second stage of development improve, develop and mature. "At the end of the fetal period, around 38<sup>th</sup>–40<sup>th</sup> week of pregnancy, the baby is fully formed and ready to be born" (*ibid.*, p. 70).

Following Beata Skotnicka, it should be emphasized here that:

The prenatal period is one of the most important periods for the proper development of the human body. This is when our entire body, all its organs, systems, functions and capabilities are created and developed. It is an extremely important period for ensuring the proper and peaceful development of the child. It should be remembered that the child's development will depend on what environment and conditions we create for our child in the prenatal period. (*ibid.*)

Today we have full knowledge of the fact that the first person a child should establish a relationship with is his mother. We are also convinced that all mother's emotions, both positive and negative, conscious and unconscious, are perceived by her child even in the prenatal period and are not without consequences for development. When the mother is relaxed, when she feels happiness, love, or joy, the baby in her womb will feel its mother's emotions too. If the mother experiences mourning, trauma, stress, depression or sadness, the child will sense its mother's psychological state as well. The fetus cannot escape the negative feelings and experiences of its mother, it is constantly immersed in them. When the mother is afraid, the fetus in her womb also feels fear. When the mother suffers, the fetus suffers with her. It is also worth mentioning, after Agnieszka Rubinowska, that many children are conceived against their parents' wishes and experience the trauma of rejection already in the womb. A lot of children are in mortal danger – either because of imminent miscarriage or because parents are con-

sidering the possibility of an abortion. They also often suffer when they disappoint their parents with their sex, beauty, resemblance to a person they do not like in the family, etc. (Rubinowska n.d.).

The achievements of contemporary researchers dealing with the aforementioned scientific sub-disciplines focused on the needs and possibilities of a child in the prenatal period are used, among others, by music therapy, since the child is able to hear music in the womb. "Music therapy examines the importance of music in the prenatal period both in the context of the pregnant mother and in relation to the child who is to be born. These two perspectives will overlap, because the period of pregnancy is a time of biological unity – the symbiosis of mother and child" (Kędziora 2012, p. 289). We also know today that music, appropriately selected to the mother's preferences, has a positive impact on her psychophysical state, and, thus, has a positive effect on the development of the fetus.

## CONCLUSIONS

As a result of conception, as defined by prenatal psychology, the "whole being" is created, "(...) which came into existence with the formation of the zygote, and which is separate from the mother, genetically original and unique, built of structural elements constituting the conceived child" (Kornas-Biela 2007, p. 18). Kornas-Biela proves that "(...) the genetic information received at the moment of conception will be passed on to each of its [the fetus' – K.B.S.] cells until the end of life of the developed organism, and what is genetically determined will always (albeit to a different extent) interact with environmental factors and the subject's activity" (*ibid.*). From the moment of conception, this subject, despite the fact that it is still immature in our literal understanding, "(...) is entitled to permanence, continuity, to be always himself, despite (...) its specific experiences, maturation and change with the passage of time" (*ibid.*, pp. 17–18).

Contemporary knowledge about the developmental possibilities of a child in the intra-cell period and knowledge about the importance of early attachment relationship, along with the progress of biomedical sciences, has a chance to derive solid scientific premises for prenatal pedagogy. This is particularly important because education, as well as human development, should be considered in terms of lifelong learning, with particular attention paid to the child's experiences during the prenatal period.

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