Term Ontogenesis in Educational Research Discourse: Focus on Term “Language”
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Abstract. The paradigm shifts from the individual dimension to the social dimension of term ontogenesis in educational research discourse. The aim of the study is to analyze results of the ontogenesis of the term “language” in educational research discourse. The meaning of key concepts of “term” and “ontogenesis” is studied. Moreover, the study demonstrates how the key concepts are related to the idea of “concept development” and shows a potential model for development, indicating how the steps of the process are related following a logical chain: “term” definition → “ontogenesis” definition → educational research discourse → exploratory study. The present research was conducted to analyze the ontogenesis of the term “language” in the educational research discourse up to 2012. The findings of the research allow drawing the conclusion that the term “language” has transformed into “language activity”, then “languaging” and, later, “language studies” in educational research discourse. Directions of further studies are proposed.

Key words: term ontogenesis, educational research discourse, language as a process, language activity, languaging, language studies.

Introduction

Many researchers agree that language plays a significant role in society:

“the key to the evolution of human consciousness and society lies in the linguistic mediation of consciousness” (Lee, 1987, p. 104).

Therefore language has attracted a lot of research efforts. On the one hand, the results of research activities demonstrate diversity in terms of scientific and theoretical fundamentals as well as complexity of prevailing concepts and current practical applications. On the other hand, there is a common conclusion that everything including language and its terms is in a state of process and change (Robbins, 2007, p. 48).

Already Baudouin de Courtenay distinguished between the present state of a language and its historical development (Heaman 1984, p. 29). He contrasted “static” laws and “dynamic laws and forces” which determine historical development (Heaman 1984, p. 29).

However, little attention has been paid to the development or ontogenesis of the term “language”. Such a lacuna has to be filled in as, in the present research, term ontogenesis plays a two-fold role:

• on the one hand, term ontogenesis is considered as a process and,
• on the other hand, term ontogenesis means a process result.

Term ontogenesis as a result is promoted by educational research discourse, if the process of term ontogenesis is integrated into the process of educational research discourse.

The research question is as follows: how to organize educational research discourse for term ontogenesis?

The aim of the study is to analyze results of the ontogenesis of the term “language” in educational research discourse.

The methodological background of the present research is based on the System-Constructivist theory introduced as the New or Social Constructivism Pedagogical theory. The System-Constructivist theory is formed by

• Parsons’s system theory (Parsons, 1976, pp. 9–30) on any activity as a system,
• Luhmann’s theory (Luhmann, 1988, pp. 1–14) on communication as a system,
• the theory of symbolic interactionalism (Mead, 1973),
• the theory of subjectivism (Groeben, 1986).

The System-Constructivist theory implies the dialectical principle of the unity of opposites that contributes to the understanding of the relationship between external (social, social interaction, teaching, etc) and internal (individual, cognitive activity, learning, etc) perspectives as the synthesis of external and internal perspectives. In comparison, the Constructivism Theory focuses on learning and, consequently, the internal perspective, the Social Constructivist theory – on teaching and, consequently, external perspective as well as on the balance between teaching and learning and, consequently, the balance between the external and internal perspectives.

The System-Constructivist theory and, consequently, System-Constructivist approach to learning introduced by Reich (Reich, 2005) emphasize that human being’s point of view depends on the subjective aspect:

• everyone has his/her own system of external and internal perspectives (Ahrens, Zaščerinska, 2010, p. 182) that is a complex open system (Rudzinska, 2008, p. 366) and
experience plays the central role in the knowledge construction process (Maslo, 2007, p. 39).

The methodological approach of the present research is the development of the system of external and internal perspectives. The term *perspective* in the present research means to embody certain fundamental assumptions (Barry, 2002, p. 3). Figure 1 shows the initial components of the system of external and internal perspectives based on the findings of Vygotsky (Vygotsky, 1934/1962; Vigotskis, 2002, p. 206–279) and Robbins (Robbins, 2007, p. 49–54).

**Figure 1. Initial Components of the Methodological Approach**

The methodology of the development of the system of external and internal perspectives is based on Vygotsky’s Law of Development (Vigotskis, 2002, p. 257) or interiorization (Ситаров, 2002, p. 264). The Law of Development is defined by Vygotsky as transformation of the external culture into the individual internal (Wells, 1994, p. 3) that means that any function in the individual cultural development appears twice or on two planes (Wells, 1994, p. 3):

- first, on the social level (the external level) and
- later, on the individual level (the internal perspective).

The social level (the external perspective) accentuates social interaction of development (Surikova, 2007b, p. 36). Therein, social interaction is defined as the unity of outside developmental circumstances and individual psychological characteristics in his/her experience (Surikova, 2007a, p. 254). The individual level (the internal perspective) focuses on cognitive activity (Surikova 2007b, p. 36). Cognitive activity refers to the unity of processes of sense, perception, attention, memory, thinking, speech and imagination (Ситаров, 2004, p. 129), by which people perceive, remember, think, speak, and solve problems. In other words, any function in the individual cultural development appears at the beginning between people (as interspsychical or intermental category), and then – on the intrinsic level (as intrapsychical or intramental category) (Wells, 1994, p. 3). However, for the process of individual development, the phase of the unity of external and internal perspectives is emphasized (Čehlova, 2002, p. 9). Hence, the phase of the unity of external and internal perspectives (the system of interacting phenomena) is determined as the sub-phase between the social level (the external perspective) and the individual level (the internal perspective). The phases of interiorization determine the essence of the methodology of the development of the system of external and internal perspectives and the sequence of its implementation as shown in Figure 2:

- from the external perspective in Phase 1
- through the phase of the unity of external and internal perspectives (the system of interacting phenomena) in Phase 2
- to the internal perspective in Phase 3.

**Figure 2. Phases of the Development of the System of External and Internal Perspectives**

The external perspective accentuates social interaction of development (Surikova, 2007b, p. 36). The internal perspective focuses on cognitive activity (Surikova, 2007b, p. 36).

Moreover, the complemented components of external and internal perspectives are identified in Table 1 based on the analysis of the external culture and the individual internal culture within the Law of Development or interiorization (Vigotskis, 2002, p. 206–279).

**Table 1. Complemented Components of External and Internal Perspectives**

<table>
<thead>
<tr>
<th>External Perspective</th>
<th>Development of the system</th>
<th>Internal Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>meaning</td>
<td>schemas</td>
<td>sense</td>
</tr>
<tr>
<td>denotation</td>
<td>chunks</td>
<td>personal meaning</td>
</tr>
<tr>
<td>scientific whole</td>
<td>gambits</td>
<td>spontaneous</td>
</tr>
<tr>
<td></td>
<td>concept system</td>
<td>part</td>
</tr>
<tr>
<td></td>
<td>grammar</td>
<td>connotation</td>
</tr>
<tr>
<td>new type of function</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The meaning of key concepts of “term” and “ontogenesis” is studied in the present research. Moreover, the study demonstrates how the key concepts are related to the idea of concept development and shows a potential model for development, indicating how the steps of the process are related following a logical chain: “term” definition → “ontogenesis” definition → research discourse → exploratory study.

The novel contribution of the paper is presented by the process of term ontogenesis worked out by the authors of the present research.
Theoretical Background

A term is embodied in a word (Vygotsky, 1934/1962, p. 83). Term ontogenesis as a process and result is considered within concept formation by Vygotsky (Vygostky, 1934/1962).

In education concepts and, consequently, terms present forms or levels of knowledge (Zogla, 2001, p. 37) as a structural component of experience that is subjective, individually unique (Zogla, 2008, p. 1).

Concepts and word meanings are dynamic and not static (Benson, 1995, p. 6; Robbins, 2007, p. 48). Moreover, the development of concepts and the development of word meaning are one and the same process (Vigotskis, 2002, p. 208).

Development is defined as nothing totally completed, but everything in a state of process and change (Robbins, 2007, p. 48). The terms “ontogenesis”, “development” and “growth” are used synonymously in the present contribution.


Term ontogenesis is based on the psychological processes underlying Vygotsky’s concept formation (Vygostky, 1934/1962). The choice of these psychological processes is underpinned by the significance of the concept development in general and education: concepts and, consequently, terms are found at the heart of knowledge creation in education as concepts and, consequently, terms present forms or levels of knowledge (Zogla, 2001, p. 37) and content (Niem, 2008, p. 12).

Concept formation by Vygotsky (Vygostky, 1934/1962) is analyzed within the Theory of the Zone of Proximal Development formulated by Vygotsky (Vigotskis, 2002, p. 257). The activity concept originated with Vygotsky’s Theory of the Zone of Proximal Development (Blunden, 2009, p. 10), although Activity Theory is associated with the name of Leontyev rather than Vygostky: Leontyev made a distinction between the individual action, and the social activity of which it is a part (Leont’ev, 1978, p. 7) and which gives it meaning (Blunden, 2009, p. 10). Activity represents communication. By communication, discourse is meant. Further on, in education, by discourse, the educational process and the process of teaching and learning are understood. Thereby the terms “communication”, “discourse”, “educational process” and “process of teaching and learning” are used synonymously in the present research. Concept formation by Vygotsky (Vygostky, 1934/1962) within the zones of proximal and actual development is interpreted by Leontyev (Леонтьев, 1982, p. 36) as depicted in Figure 3.

Hence, the choice of the psychological processes underlying concept formation by Vygotsky (Vygostky, 1934/1962) as the basis for provision of the development of the system of external and internal perspectives has been underpinned.

Figure 3. Concept Formation within the Zones of Proximal and Actual Development

Analysis of the unity of scientific (academic) and spontaneous (everyday) concepts on the basis of the methodological approach of the development of the system of external and internal perspectives allows drawing the conclusion that the external perspective comprises the development of scientific concepts, and the internal perspective – spontaneous concepts as described by Vygotsky (Vygostky, 1934/1962, p. 84–90) and shown in Table 2. Moreover, scientific concepts include professional concepts (Mylett, Gluck, 2005, p. 6). That means in the present research that the external perspective comprises the development of scientific as well as professional concepts.

Table 2. Theses of Vygotsky’s Theory on the Development of Scientific and Spontaneous Concepts

<table>
<thead>
<tr>
<th>External perspective</th>
<th>Internal perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scientific and professional concepts:</strong></td>
<td><strong>Spontaneous concepts:</strong></td>
</tr>
<tr>
<td>- constructed only if individual spontaneous concepts reach a definite level,</td>
<td>- developed through individual mental efforts,</td>
</tr>
<tr>
<td>- characterized by individual reflective awareness and deliberate control,</td>
<td>- individual lack of conscious awareness of relationships,</td>
</tr>
<tr>
<td>- decisively influenced by adults,</td>
<td>- part of a single process,</td>
</tr>
<tr>
<td>- part of a single process,</td>
<td>- direction of development is from the bottom up from elementary and low features to high type’s features,</td>
</tr>
<tr>
<td>- scientific concepts develop from the top down, from a higher type’s feature to a low one.</td>
<td></td>
</tr>
</tbody>
</table>

Concepts and word meanings are dynamic and not static (Benson, 1995, p. 6; Robbins, 2007, p. 48). From the point of view of Vygotsky, the two processes – the development of spontaneous and non-spontaneous concepts – are parts of a single process (Vygostky, 1934/1962, p. 85). Moreover, the total system of concepts has been found important (Vygotsky, 1934/1962; Piaget, 1962, p. 4). The development of the total system of concepts is based on the psychological system (Леонтьев, 1982, p. 38). The psychological system is defined as the change in the relationship between functions for the individual development, and not the development of each function (Леонтьев, 1982, p. 38): “scientific and spontaneous concepts start from different points but eventually meet” (Vygotsky, 1934/1962, p. 84). Thus, the rudiments of systematization first enter the individual mind by way of his contact with scientific concepts and are, then,
transferred to everyday concepts, changing their psychological structure from the top down (Vygostky, 1934/1962, p. 93), thereby developing the system of external and internal perspectives. It should be noted that before starting the development of scientific concepts, the individual course of the development of spontaneous concepts must take place (Vigotskis, 2002, p. 208). The direction of spontaneous concept development is from the bottom up, from elementary and low features to high type’s features (Vigotskis, 2002, p. 203): from certain complexes to a spontaneous concept as following:

- complex of association;
- complex of collection;
- complex of chain;
- complex of diffusion;
- a pseudo-complex.

On the one hand, the concept of the psychological system (Леонтьев, 1982, p. 38) allows positioning the quasi-concept within the quasi-autonomous zone as depicted in Figure 4.

![Figure 4. Concepts in the Zones of Development](image)

Therein, quasi-concept is defined as asymmetrical, in flux at various stages and interpreted differently at different points in time (Robbins 2007, p. 49). Positioning the quasi-concept within the quasi-autonomous zone is based on

- first, the importance of change in the relationship between functions for the individual development, and not development of each function (Леонтьев, 1982, p. 38),
- second, the significance of the quasi-autonomous zone for individual development (Цукерман, Елизарова, Фрумина, Чудинова, 1993, p. 35) and
- finally, the relationship between scientific and professional concepts and the zone of proximal development.

Thus, term ontogenesis proceeds in educational research discourse as depicted in Figure 5:

- from scientific and professional concepts in Phase 1
- through quasi-concept in Phase 2
- to spontaneous concept in Phase 3.

In education, scientific and professional concepts are associated with educator’s academic knowledge, quasi-concept – students’ knowledge variety, and spontaneous concept – student’s individual knowledge as presented in Figure 6.

![Figure 5. Term Ontogenesis within Concept Formation](image)

As education and, particularly, higher education, is centred on research, educational research discourse is organized as the process of teaching and learning which is implemented in three phases as shown in Figure 7 (Зацеринска, Ahrens, 2010, p. 184).

![Figure 7. Phases of the Teaching and Learning Process](image)
research process or the process of teaching and learning as it can be both an externally organised or spontaneous process in a variety of forms such as lecture, seminar, talk or just conversation. The process of term ontogenesis in the process of educational research discourse is implemented as following:

Phase 1 Teaching is aimed at a safe environment for all the students. In order to provide a safe environment, the essence of constructive social interaction and its organizational regulations are considered by both the educator and students. In this phase, the interaction is based on the educator’s academic knowledge and, consequently, scientific and professional concepts. The present phase is organized in a frontal way involving the students to participate:

- The educator makes previous experience rational. The activity includes choice of forms and use of resources that motivates the students. The teaching process is under the educator’s guidance.
- The peers do not participate in guidance of the teaching/learning process. The activity is carried out qualitatively only with the help of the educator. Dependence on the educator is observed.
- The students study alongside but not together. The students create the system of the aim and objectives, search for a variety of information source and obtain techniques of information compiling. The students fulfil the activity qualitatively only with the educator’s help. Dependence on the educator is observed, not dependent on the peers.

Phase 2 Peer-learning is designed for the students’ analysis of an open academic problem situation and their search for a solution. The same materials can be prepared for all of the group students. In the second phase (peer-learning), quasi-concept develops through students’ mutual interaction based on knowledge variety and, consequently, concept variety provided by every student individually. This phase involves the students to act in peers:

- The educator makes previous experience rational. The activity includes choice of forms and use of resources that motivates the students. The teaching process is under the educator’s guidance.
- The peers regulate each other: it is typical for students to regulate each other. The students study together, study from others and teach others. The teaching/learning process is under the peer’s guidance. The activity’s forms and methods are exchanged.
- The students fulfil the activity qualitatively with the peers’ help. Partial independence is observed. The relevant activity is performed jointly with other students and with shared responsibility.

Phase 3 Learning emphasizes the students’ self-regulation with use of assessment of the process and self-evaluation of the results. In the third phase (learning), the development of students’ spontaneous concept in students’ autonomous cognitive activity is based on every student’s individual knowledge acquired by the student and development of students’ knowledge and, consequently, concept system to optimal or high level. The students fulfil the activity qualitatively in an autonomous way, and their independence is observed:

- The educator functions as a consultant and an assistant. The educator delegates his/her duties to the students.
- The peers have consultative and advisory functions.
- Students’ self-regulation is typical. The students study independently. The students fulfil the activity qualitatively in an autonomous way, and their independence is observed. The participants’ self-regulation on the basis of the process assessment and the result self-evaluation is used. The relevant activity is performed with a high sense of responsibility. Self-regulation is typical, and a student does not depend on peers.

Results of the process of teaching and learning and, consequently, educational research discourse is a term ontogenesis.

**Methods**

Interpretative research paradigm which corresponds to the nature of humanistic pedagogy (Lüka, 2008, p. 52) has been determined. The interpretative paradigm creates an environment for the development of any individual and helps them to develop their potential (Lüka, 2008, p. 52). The core of this paradigm is human experience, people’s mutual everyday interaction that tends to understand the subjectivity of human experience (Lüka, 2007, p. 104). The paradigm is aimed at understanding people’s activity, how a certain activity is exposed in a certain environment, time, conditions, i.e., how it is exposed in a certain socio-cultural context (Lüka, 2007, p. 104). Thus, the interpretative paradigm is oriented towards one’s conscious activity, and it is future-oriented (Lüka, 2007, p. 104). Interpretative paradigm is characterized by the researcher’s practical interest in the research question (Cohen, Manion et al., 2003). The researcher is the interpreter. Thus, the interpretative paradigm in the present research has been underpinned both by the researcher’s
practical interests – term ontogenesis in educational research discourse – and the correspondence of the social constructivism theory, symbolic interactionism theory as well as the action and activity theories to the given paradigm (Lūka, 2007, p. 104).

The research question is as follows: has the educational research discourse based on the process of teaching and learning influenced ontogenesis of the term “language”?

An exploratory research aimed at developing hypotheses, which can be tested for generality in following studies (Mayring, 2007, p. 4) has been used in the study. The exploratory study aims to generate new hypotheses and questions (Phillips, 2006, p. 310), too.

The study proceeds as demonstrated in Figure 9:
- from context analysis in Phase 1
- through description of the practice in Phase 2
- to generalization of the model in Phase 3.

Figure 9. Methodology of the Exploratory Study

The exploratory oriented research allows the construction of only few cases (Mayring, 2007, p. 1). Moreover, the cases themselves are not of interest, only the conclusions and transfers we can draw from this material (Mayring, 2007, p. 6). Selecting the cases for the case study comprises use of information-oriented sampling, as opposed to random sampling (Flyvbjerg, 2006, p. 229). Random samples emphasizing representativeness will seldom be able to produce this kind of insight; it is more appropriate to select some few cases chosen for their validity.

Thus, the present research involves theoretical analysis of results of ontogenesis of the term “language” in a number of selected research contributions not limited by a historical period, country, author or study programme as well as theoretical modelling.

Results and Discussion

Table 3 presents the ontogenesis of the term language in different historical periods (Campbell, 2001, pp. 81–105; Chomsky, 1965; Fedjukova, 1998; Garcia, 2009, Heaman, 1984).

Summarizing content analysis (Mayring, 2004, p. 269) of the data reveals that the term “language” has been developing from the analysis of particular language elements to the search for applications to all languages.

Table 3. Ontogenesis of the Term “Language” in Different Historical Periods

<table>
<thead>
<tr>
<th>Phase</th>
<th>Historical period</th>
<th>Theory</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The 5th century BC</td>
<td>Sanskrit morphology</td>
<td>Pāṇi</td>
</tr>
<tr>
<td>2.</td>
<td>1900 BC</td>
<td>Differences between Sumerian and Akkadian grammar</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>The 17th century AD</td>
<td>Grammars of all languages</td>
<td>the French Port-Royal Grammarians</td>
</tr>
<tr>
<td>4.</td>
<td>The 18th century</td>
<td>Comparative linguistics</td>
<td>William Jones</td>
</tr>
<tr>
<td>5.</td>
<td>The 18th century</td>
<td>Broadening from Indo-European to language in general</td>
<td>Wilhelm von Humboldt</td>
</tr>
<tr>
<td>6.</td>
<td>The 19th century</td>
<td>Structural linguistics, language’s historical development</td>
<td>Jan Baudouin de Courtenay</td>
</tr>
<tr>
<td>7.</td>
<td>Early in the 20th century</td>
<td>Language as a static system of interconnected units, defined through the oppositions between them, by introducing a distinction between diachronic and synchronic analyses of language</td>
<td>Ferdinand de Saussure</td>
</tr>
<tr>
<td>8.</td>
<td>1930s</td>
<td>Language development within concept development</td>
<td>Vygotsky</td>
</tr>
<tr>
<td>9.</td>
<td>1965</td>
<td>Chomsky’s linguistic theory: “a fundamental distinction between competence (the speaker-hearer’s knowledge of his language) and performance (the actual use of language in concrete situations)”</td>
<td>Chomsky</td>
</tr>
<tr>
<td>10.</td>
<td>1998</td>
<td>Language activity</td>
<td>Fedjukova</td>
</tr>
<tr>
<td>11.</td>
<td>2009</td>
<td>Languaging</td>
<td>Garcia</td>
</tr>
</tbody>
</table>

Further on, the term “language” has changed from a static system to a dynamic system: the term “language” as a result of educational research discourse has transformed from the term “language” as a static system through “language activity” based on the subject ↔ subject relations to “languaging” as the social practice.

Application of the methodology of the present research, namely, the development of the system of external and internal perspectives to the analysis of the term “language activity” reveals that the definition of the term “language activity” focuses on the established subject ↔ subject
relations that are the basis for a possibility of both their personalities growing richer, a possibility of forming new knowledge and experience (Fedjukova, 1998, p. 42), thereby providing the development of the external perspective. Application of the methodology of the present research, namely the development of the system of external and internal perspectives, to the analysis of the term “languaging” defined as the social practices that are actions performed by our meaning-making selves (García, 2009, p. 39) highlights individual actions and, thereby the development of the internal perspective.

For educational research discourse, a new concept of the term “language studies” has been proposed with the application of the methodological approach of the present research, namely, the development of the system of external and internal perspectives. Therein, language studies are defined as shared aim oriented joint activity according to certain common norms, over some period of time that provides joint social interaction and cognitive activity for each participant and increases opportunities of gaining social experience (Zaščerinska, 2011, p. 42).

Conclusions
The findings of the present research allow drawing the conclusion that educational research discourse based on the process of teaching and learning has influenced the ontogenesis of the term “language”.

Thus, term ontogenesis as a result has been promoted by integration of the process of term ontogenesis into the process of educational research discourse based on the process of teaching and learning.

Further on, results of the present research allow complementing the term “language“ with the terms “language activity”, “languaging” and “language studies” in educational research discourse as depicted in Figure 10.

Figure 10. Recent Ontogenesis of the Term “Language”

Validity and reliability of the research results have been provided by involving other researchers into several stages of the conducted exploratory research. External validity has been revealed by international co-operation as following:

- the research preparation has included individual consultations given by other researchers,
- the present contribution has been worked out in co-operation with international colleagues and assessed by international colleagues, and
- the research has been presented at international conferences.

The present research has limitations. The inter-connections between term, concept and language ontogenesis and the sequence of its implementation in educational research discourse have been set. Another limitation is the empirical study conducted by involving one term, namely, “language”. Therein, the results of the study cannot be representative for the whole area. If the results of other terms had been available for analysis, different results could have been attained. There is a possibility to continue the study.

As the exploratory study aims to generate new hypotheses and questions (Phillips, 2006, p. 310), the initial research question, namely, how to organize educational research discourse for term ontogenesis?, has been re-formulated to the following research question: how to organise efficient educational research discourse for term ontogenesis?

Further research could include analysis of results of term ontogenesis of five phases (Ahrens, Zaščerinska, 2011, p. 405):

- scientific and professional concepts in Phase 1,
- scientific and professional concepts with elements of quasi-concept in Phase 2,
- quasi-concept in Phase 3,
- quasi-concept with elements of spontaneous concept in Phase 4 and
- spontaneous concept in Phase 5.

Hence, five phases of the educational research discourse based on the process of teaching and learning are proposed for further analysis as depicted in Figure 11:

- teaching in Phase 1,
- teaching with elements of peer-learning in Phase 2,
- peer-learning in Phase 3,
- peer-learning with elements of leaning in Phase 4,
- learning in Phase 5.

Figure 11. Five Phases of Educational Research Discourse Based on the Process of Teaching and Learning

References
Terminų ontogenezė mokymo proceso tyrimų diskurse: terminas „language“

Santrauka


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