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Author: Urszula Szuścik

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Urszula Szuścik
https://orcid.org/0000-0003-0817-4868
University of Silesia in Katowice, Poland
urszula.szuscik@us.edu.pl

Graphics in Early Childhood Education

Grafika w kształceniu dziecka w pedagogice wczesnoszkolnej

Keywords:
early childhood education, child, experiment, graphics

Summary: The article presents the assumptions and results of a natural pedagogical quasi-experiment which was carried out with children in grades 1–3 of primary school. The aim of the transverse research was to present a method that was to arouse the interest of the children in graphics and its means of artistic expression (line, blotch, black and white). The experimental factor was using the method of didactic play of a creative nature which consisted of an illustrative story developed by the author entitled "Black and White" and the content of the poem "Black Line." The final stage of the experiment was the children's work in the graphic technique of linocut. A quantitative analysis of the test results obtained by individual groups of children from grades 1, 2 and 3 (percentage distribution of the obtained test results in the experimental and control groups) was performed. The obtained results confirmed the assumptions and hypothesis of the research because the introduction of the creative play incited children's interest in graphics. On the other hand, in grade 3, the children from the experimental group obtained a slightly (by 2%) lower result than the control group. This may indicate the need to change the method of art education for children in this age group and the beginning of a crisis in the development of their artistic creativity.

Słowa kluczowe: pedagogika wczesnoszkolna, dziecko, eksperyment, grafika

Streszczenie: W artykule przedstawiono założenia i wyniki quasi-eksperymentu naturalnego pedagogicznego, który zrealizowano z dziećmi edukacji wczesnoszkolnej. Celem badań poprzecznych było zaprezentowanie metody, która miała wzbudzić zainteresowanie dzieci klas I, II i III szkoły podstawowej grafiką i jej środkami wyrazu plastycznego (linią, plamą, czernią i bielą). Czynnik eksperymentalny stanowiła metoda zabawy dydaktycznej o charakterze twórczym, która składała się z opracowanej przez autorkę historyjki ilustracyjnej pt. *Czerń i biel* oraz treści opracowanego do niej wierszyka pt. *Czarna kreska*. Etapem zamykającym eksperyment było wykonanie przez dzieci pracy w technice graficznej linorytu. Przeprowadzono analizę ilościową wyników badań uzyskanych przez poszczególne grupy dzieci z klas I, II i III (rozkład procentowy uzyskanych wyników badań w grupie eksperymentalnej i kontrolnej). Uzyskane wyniki potwierdziły założenia i hipotezę badań, gdyż wprowadzenie metody zabawy twórczej do zagadnienia grafiki w klasach I i II szkoły podstawowej kształtuje zainteresowania dzieci grafiką. Natomiast w klasie III dzieci z grupy eksperymentalnej uzyskały nieznacznie (o 2%) niższy wynik niż w grupie kontrolnej. Może to wskazywać na konieczność zmiany metody kształcenia plastycznego dzieci w tej grupie wiekowej i początek kryzysu w rozwoju twórczości plastycznej dziecka.

Introduction

Artistic education of the child as part of early childhood education introduces them to the world of concepts and the language of visual arts by shaping their experience within various fields of art – as well as its elements, stages, and products – and naming them. Often, in pedagogical practice, the teacher focuses on the attractiveness of artistic activity itself, ignoring the language associated with it. Thus, the child does not record their experiences, does not name them, and the process of their art education is purely experiential-emotional-impressionistic. If we – teachers – want the child to experience art as well as learn about it, we should talk about it, introduce concepts and vocabulary related to it at the level of the child's perception and reception, as well as set more difficult tasks that will motivate the child to exceed their current developmental possibilities.

One of the main assumptions of this study is that getting to know and experiencing the artistic activity in a given field of art will help the child better understand the work and the process of its creation, learn the language associated with it and, thus, develop them linguistically. Activity/work creates situations that enable searching, processing and experimenting with materials and art tools.

Graphic techniques are reluctantly implemented as part of art classes with children at the stage of early school education. This is due to the difficulty of organizing such activities and the teachers' inexperience in this area. For the sake of this study, however, I assumed that a gradual introduction of the child to graphics would arouse their interest in this field of fine arts and teach them to plan activities related to it. In order to verify this assumption, I conducted a natural pedagogical quasi-experiment with children from the first grades of the elementary school, using the parallel group technique.

At the outset, it should be explained what distinguishes graphics from other fields of fine arts. The word "graphics" comes from the Greek word *graphis*, which means a stylus to write on a wax tablet or a carving chisel. "From the Greek word *grapho* – I draw, I sketch – 'graphics' was created out of the need to multiply a drawing and was called 'black and white art' because of its most classic form" (Jakimowicz, 1961, p. 5). The oldest graphic technique is woodcut (convex printing). Depending on the matrix (the type of material from which the graphics plate is made and the method of its development), convex, flat, concave, and screen printing are distinguished.

Artistic graphics are called workshop graphics. The drawings on the board are cut by the artist himself. The process of creating a graphic product is complex due to the need to develop an image on an engraving plate. The image cut out on the plate has the form of a mirror image of the original project; through the process of making a print – rather than as a result of a direct creative activity of the artist – it returns to its original form. In consequence, the process of creating a graphic product is less spontaneous and more reflective, and requires discipline in the sequence of activities performed.

Mieczysław Porębski (1974) lists the following qualities of graphics:

1) its informative function,
2) democratization of its scope,
3) its integrating role in the formation of a new model of visual culture, and perhaps a new model of culture in general.

The researcher draws attention to the educational role of graphics as part of the current events of collective and individual life, while maintaining the

highest possible level of artistic creation. Graphics have a greater and faster range than painting or sculpture to influence the viewer (both the social community and individuals who make up this community). Some of the earliest graphic works were playing cards and church-fair woodcut pictures. Later, the first printed books with illustrations, called xylographs, appeared. Since the end of the nineteenth century, graphic arts have been considered a creative activity governed by specific requirements – and thus, as an independent field of fine arts. "[...] The role that graphics have performed makes it an apt tool for quick and blunt expression; its technical properties, multiplicity that does not nullify authenticity, the relative ease of possession and the possibility of direct contact with it influence the popularity of graphics" (Wejman, 1970, p. 3).

The general goal of art classes is to shape the creative attitude of students through the active and systematic practice of art. The implementation of the school curriculum requires that the teacher organize an appropriate workroom for children and interest them in a given field of art. It is recommended to introduce various art techniques. With regard to the graphics exercises in early childhood education, I have the following observations:

1. In the first grade, graphics are not discussed directly, but art techniques introduced include potato stamps, printing from leaves or fabrics, hand impressions, etc. Children learn about such concepts as a knife and a chisel.
2. In the second grade, the decision to choose graphic techniques is left to the teacher, for example, they can choose the black and white or color glue batik technique.
3. In the third grade, graphic arts are discussed as a field of fine arts. The concepts of an original, a copy, a reproduction, applied graphics, workshop graphics and a print are introduced. Among the graphic techniques, children can be taught collagraphy, monotype, stamping, and plasterboard.

The child's artwork expresses their emotional and semantic relationship to the environment. The child gives a part of themselves, shows how they see, think, and what they feel. Artistic activity develops their creative abilities, such as the ability to ask questions and seek answers to them, the ability to shape a form, find new solutions and create new arrangements. Their need to exceed current knowledge results from the relationship between their experiences of feelings, thoughts and artistic activity. Any surprise caused by a situation in which something is created can be a starting point, a beginning of a search.

A child's artistic activity does not consist in faithful reproduction of reality but should develop in relation to their own conceptions of understanding the world and their own ways of presenting it on the basis of ideoplastic art.

The teacher proposing exercises using a specific art material should have experience in working with the given technique. Thanks to this, the children will learn and understand the specificity of the artistic activity necessary to work with the material selected. As Victor Lowenfeld (1977) notes, a new artistic technique should be used, depending on the needs of the child. The need for artistic action raises the need to know how to use a given material. Much experience must be gained before one is able to use any particular technique. Artistic material and a new technique are a means of expression, not an end in itself.

The aim of the research was to propose a method that would help arouse interest in graphic arts in children from grades 1–3 of primary school. It should be noted that the concept of "interest" is ambiguously defined by psychologists. Namely, some definitions treat interest as qualities inherent primarily in people (need, attitude, qualities, attention), while others treat it as qualities of objects that receive special attention. Eduard Claparède explains that "the term 'interest' expresses […] the relation of mutual correspondences between an object and a subject. By itself, the object is never interesting. Interest is the need of the subject that seeks to satisfy it" (after: Gurycka, 1978, p. 19). On the other hand, Tadeusz Tomaszewski, writing about "need," states that, "Both human life processes and human behavior depend on the relationship between the environment and the current situation, of which a human being is a distinguished element. We define different kinds of this dependency as needs. [...] A significant difference between people and objects lies in the fact that in a person an objective state of need causes an active state which we call a need in a subjective sense" (Tomaszewski, 1977, p. 491).

It can be assumed that if a given (objective) situation is created in which the subject finds themselves, then by "doing something" in this situation an active state will appear in them – the subject will feel the need to deal with this situation, explain it, and, therefore, interest will arise. From this perspective, interest is the need of the subject.

While referring this to the school situation of the child, they are often given a task, a problem to be solved. They should then be in an active state that will stimulate them to action. Claparède showed that a need is a symptom of an imbalance. A need exists when something inside or outside (in our body

or mind) changes and when we adapt to the change. Such an approach to interest emphasizes its cognitive character. The cognitive bias is sometimes accompanied by activity induced by it or by the properties of things. As soon as cognitive activity occurs, active processes such as attention or the need to explain something come to the fore. Gurycka's definition of interest, including its emotional, cognitive and behavioral aspect, defines it as a permanent "drive to learn about the surrounding world, taking the form of directed cognitive activity of a specific intensity, and manifested in a selective attitude to the surrounding phenomena, i.e.: 1) in seeing the features of objects and their relationships, dependencies between them, as well as selected problems; 2) in an effort to investigate, know and solve them; and 3) in experiencing various feelings (negative and positive) related to the acquisition and possession of knowledge" (Gurycka, 1978, p. 33).

In this study, I adopted the school situation of the child during classes as an objective situation in which all children have the same opportunity to be interested in a subject – in this case, graphics. The development of the child's interests depends not only on their level of general development, but also on appropriate learning opportunities (Hurlock, 1985). Their degree of interest can be determined by taking into account activities performed at a certain time or what he or she does most often and enjoys doing.

I assume that interest was a mental quality given to each individual. For interest to occur, a situation must be created that contains something new, interesting and stimulating. The fulfillment of this condition will create a need in the subject – the child – who has come into contact with a new object – namely, graphics. They will strive to satisfy it, learn about it in the course of classes, and thus achieve cognitive balance.

Research Assumptions

The aim of the research was to propose a method that would help to arouse interest in graphics in children from grades 1–3 of primary school. I posed the following research question: Do you need any special method to make children in grades 1–3 of primary school interested in graphics? I made an assumption that it is possible to arouse children's interest in graphics by using the method of didactic play of a creative nature.

The experimental factor, and thus the independent variable, was play through creativity. As explained earlier, I assumed that interest is the need of a subject

that seeks to satisfy it. The method – an experimental factor – was aimed at creating in the child the need to learn, arousing curiosity, and thus, creating a situation that provokes their interest in graphics; it was creative and playful. The definitions of play, of its goals and essence, as well as its classifications, are not uniform in the literature on the subject. There are different divisions of play in developmental psychology depending on criteria. Some researchers classify play according to the mental abilities and functions that are developed and shaped in its course (Karol Gross, Édouard Claparède), others divide play according to the type of experiences accompanying it (Charlotte Bühler, Arnulf Rüssel), while still others take into account the impact of social and cultural factors on play (Johan Huizinga, Jean Château) (Przetacznikowa & Spionek, 1976, p. 362). The most widespread in the literature of the subject is the division of P.A. Rudik (after: Okoń, 1950) who distinguished four types of play: creative play or role-games, construction, didactic, and movement play. Stefan Szuman points out that both children and adults gradually develop an awareness of their own and others' ways of acting, distinguishing between effective and ineffective methods. The researcher saw an analogy between play and learning, claiming that play is a natural, innate, special method of learning for a young child (Szuman, 1948, p. 38). Both during play and in the teaching process, the child acquires new skills and messages. "[…] Playing is not a duty for a child, as is learning, but it satisfies their need for action. In play, the child takes actions that interest them at the moment, and their play products have no material value – the motive for their creation is not practical or utilitarian – but are the outcomes of experiences that are significant for the child" (Przetacznikowa & Spionek, 1976, p. 361).

The forms and types of educational play are very diverse. Their feature is that they are not the result of children's free activity (creativity), but are developed by teachers for specific educational, cognitive or educational purposes. Educational play is intended to expand the scope of children's perceptions and, through contacts with an increasing number of objects and phenomena, enrich their vocabulary and shape their behavior or attitudes towards experienced situations, phenomena or people. Giving learning a playful character allows the child to overcome difficulties more easily and serves to help the child.

In order to verify the hypothesis, I conducted research on the basis of the natural pedagogical quasi-experiment using the parallel group technique. These were transverse tests carried out with children of grades 1, 2 and 3 at Primary School No. 29 in Katowice. Children from all studied grades were randomly

divided into two groups – the experimental group and the control group (10 people in each of them in grades 1, 2 and 3).

Description of the Course of Research

The research was carried out in the experimental groups as part of a series of six art classes (three meetings, two teaching units: 2 × 45 minutes) in school conditions. The first three meetings included the introduction of the method aimed at making children interested in graphics, and the next three meetings were dedicated to the children's creation of graphics using the linocut technique.

The experimental group was subjected to the influence of the method that was to help in making children interested in graphics and to move to practical workroom activities. I assumed that the introduction of the method of play preceding the proper use of graphic technique by children will contribute to their interest, understanding and, thus, their excitement about graphics. The control group, on the other hand, was immediately presented with graphic techniques.

The experimental factor – a method introducing the child to the issues of the graphic form and its means of artistic expression by means of a didactic game of a creative nature – consisted of an illustrative story entitled "Black and White" and the content of the poem "A Black Line." Thanks to them, I wanted to draw the children's attention to the main features of graphics: black and white colors, as well as lines and blotches and their expressive possibilities.

The picture story consisted of five paintings (30 × 30 cm each) which presented black and white compositions: from purely linear abstract forms to compositions in the shape of black and white blotches (i.e., towards a painterly interplay of black and white). The first illustration was abstract (lines), the second was abstract-descriptive, namely, a concrete shape began to emerge from the system of lines which in the third illustration had already taken a concrete shape (an image of an object known to children, which they could name). It was a figure of a hen in a contour drawing (black line on a white background). In the fourth picture, the figure of the hen was represented by a line and a black blotch, and in the fifth, the figure of the hen was only defined by a blotch. The content of the picture story was reinforced with the content of the poem entitled *A Black Line* which is a paraphrase of Anna Kamieńska's poem *Book*:

Little rows of lines slept on a page
Sad as autumn beds
It was boring. It was numb.
Suddenly it came to life.
One line seemed to sing and talk,
It went crazy on the page and started to tell stories
Of adventures, brawls, birds, flowers, rivers, mountains
Was it all hidden in the black line?
How did it hide in it?
I guess it makes no sense to ask.
Just take a brush, a stick, ink or crayon and continue dancing with the line on the page.

Experiment Course Plan

1. Introduction (creative play, experimental factor) – picture story and poem.
2. Presentation of graphics and simple graphic tools – drawing, matrix, chisel, printing ink and paper for prints.
3. Introduction of the concept of graphics.
4. Creating works in the graphic technique of linocut.

In the experimental groups (grades 1, 2 and 3), I unfolded the picture story in front of the children and read the poem. The children sat around on chairs. Having listened to the poem, each child chose one picture that was interesting to them and described what was depicted in it – I marked it on the picture description sheet. Then, I drew the children's attention to the graphics hanging in the room – linocuts which presented both unambiguous (illustrative) and open (abstract) content. The artistic form of the graphics was varied in terms of the means of artistic expression used and referred to the formal solutions used in the illustrations of the picture story watched: the use of lines, lines and black blotches, and black and white blotches. The children pointed out graphics that were interesting for them. I paid attention to whether the formal features of the graphic chosen by the child coincided with the nature of the composition of the selected illustration (line, line and blotch, or blotch).

After a joint formal analysis of the picture story and graphics, I presented the children with a graphic workroom, named its elements and explained their operation, and presented the process of obtaining a print – an image in a graphic.

Some children mentioned a familiar way of making potato stamps. I drew the children's attention to the reverse of the image cut in the plate in relation to the drawing design, so that it would be reflected on the paper in accordance with the drawing, and to the possibility of obtaining multiple copies from the same plate (matrix), that is, the original. Then each child created a graphic work in the linocut technique. After the exercise ended, the children talked about what was difficult for them and whether it was an interesting artistic technique. Together with the children, I defined what graphics are: a kind of fine art in which the drawing is cut with a sharp tool – a stylus or a knife – in a soft or hard plate. Then the convex parts in the plate are smeared with paint using a roller, and a sheet of paper is put on the plate covered with paint. The paper is then pressed against the plate and rubbed with a bookbinding cube or a spoon to obtain a print. We take the paper off the disc and sign the print obtained in this way at the bottom, under the image, with a pencil, according to strictly defined rules (title of the work in quotation marks, type of graphic technique, number of the order of the print made by edition, e.g. 4/8, and signature of the author of the work).

In the control groups, the children received materials and tools as well as an explanation necessary to do the work.

Analysis of Research Results

The independent variable in the study was creative play (the picture story described earlier – five pictures introducing the issues of form in graphics). The dependent variable, in turn, is the child's interest in graphics determined on the basis of observing their behavior during classes. To assess the child's interest in graphics during the classes, I used the following indicators:

(1.) Drawing their attention:
- a) The graphic works display; approaching them.
- b) The child's statement about whether they find similarities between the illustration of the picture story they have chosen and the graphics (black and white, line, blotch, blotch and line).
- c) Reaction of the children to the word "graphics":
  - c1. The child has already heard the word.
  - c2. The child has not come across such a word.

(2.) Questions asked by children as to whether or not they will do something like this and when; how graphics are made.

(3.) Presentation of the mini-graphic workroom: the child touches the roller, takes it in their hand, makes movements with it.
(4.) Touching the matrix: the child moves their fingers over it, studies it from both sides.
(5.) The child's questions related to the technique of making graphics.
(6.) Reminding them of a print with a stamp.
(7.) Willingness to create a graphic work (an example of a joint work – cutting a plate, making a print): the child wants to cut with a chisel (statement: "Now I want to cut"), takes a roller, puts paint on the plate, smears it on their own and shows it to me.

To assess the child's behavior, I adopted a four-point ordinal scale with a minimum value of 0 and a maximum value of 3 (0, 1, 2, 3). In each category (from 1 to 7) it was possible to get a maximum of 3 points (in the case of indicator number 1, if the behavior occurred only in the case of 1a: 1 point, 1b: 1 point, 1c: 1 point). The maximum number of points for each child was, therefore, 21, and for the study group – 210 for 10 people (100% interest in graphics).

A quantitative analysis of the test results (percentage distribution of the obtained test results in the experimental and control group) and their interpretation were performed.

In grade I, the experimental group obtained a total of 114 points (which indicates interest in graphics at the level of 54%), and the control group – 84 points (40%). Measurement with a scale of values showed that the interest in graphics in the experimental group turned out to be 14% higher than in the control group. Although in both groups the children showed a desire to make graphics, the introductory method in the experimental group stimulated interest in graphics. Based on the observation of children during the classes in the experimental group, I suspect that they were not always able to verbally determine the formal similarities between the graphics and the selected illustration supplemented with a poem, but nevertheless, unconsciously, they visually drew attention to the artistic values important for graphics. The proposed method based on the element of creative play increased the interest in graphics of grade 1 children in the experimental group.

In grade 2, the experimental group obtained a total of 96 points (nine children took part in the experiment), which indicates an interest in graphics at the level of 50%, while in the control group a total of 83 points (35%) were obtained. The measurement indicates a 15% higher interest in graphics of

children from the experimental group. It can be concluded that the introduced method preceding the execution of the graphics resulted in a greater interest in graphics in the experimental group. As in grade 1, children in the grade 2 experimental group unconsciously noticed the formal values of the graphics.

In grade 3, children from the experimental group obtained a total of 88 points (which indicates interest in graphics at the level of 42%), and 93 points in the control group (which constitutes 44%). In the experimental group in grade 3, the interest in graphics was 2% lower than in the control group, which may be due to the children's age and the beginnings of the crisis in artistic creativity, and thus involves the need to propose a different method of learning about the formal values of graphics, which is part of art education in grade IV of primary school.

Conclusions

After the research in the experimental groups was completed, the following observations were made:

- The children watched the picture story with interest, listened to the poem and looked at graphics made by artists. The story drew the children's attention to the visual values of graphics, and the poem, depicting a playful situation, influenced the children's emotional involvement and also drew their attention to the visual values of graphics. The proposed method aroused children's interest in the activity.
- The children most often chose an illustration from the story in which there was a line and a blotch.
- The children looked for thematic similarities between the selected illustration and the graphics they were studying (e.g., illustration with the figure of a hen and the graphic entitled "Swallow in the Nest").
- The children got to know the graphic workroom with interest and were eager to try the graphic technique.
- Awakening the child's interest in a given field of art should start as early as possible in their education. This will contribute to the development of their general curiosity about the phenomena of art, their development of the language of concepts and their general creative activity.

References

Bruner, J.S. (1978). *Poza dostarczone informacje. Studia z psychologii poznania* [Beyond the Information Given], transl. B. Mroziak. Warszawa: PWN.

Daszyńska, M. (1992). *Techniki graficzne powielane i odbijane* [Graphic Techniques Copied and Reflected]. Warszawa: WSiP.

Gloton, R. & Clero, C. (1985). *Twórcza aktywność dziecka* [Creative Activity of the Child], transl. I. Wojnar. Warszawa: WSiP.

Gurycka, A. (1978). *Rozwój i kształtowanie zainteresowań* [Development and the Shaping of Interests]. Warszawa: WSiP.

Hurlock, E. (1985). *Rozwój dziecka* [Child Development], Vol. 1–2, transl. M. Tyszkowa. Warszawa: PWN.

Jakimowicz, I. (1961). *Polska grafika współczesna* [Polish Contemporary Graphics]. Warszawa: WAiF.

Jurkiewicz, A. (1975). *Podręcznik metod grafiki artystycznej* [*Handbook of Artistic Graphics Methods*]. Warszawa: Arkady.

Krejča, A. (1984). *Techniki sztuk graficznych* [*Graphic Arts Techniques*]. Warszawa: WAiF.

Lowenfeld, V. & Brittain, W.L. (1977). *Twórczość a rozwój umysłowy dziecka* [*Creative and Mental Growth*], transl. K. Polakowski. Warszawa: PWN.

Okoń, W. (1950). *O zabawach dzieci* [*On Children's Play*]. Warszawa: PZWS.

Okoń, W. (1955). *Rodzaje zabaw dziecięcych i ich właściwości* [*Types of Children's Play and Their Properties*]. Warszawa: PZWS.

Okoń, W. (1995). *Zabawa a rzeczywistość* [*Play and Reality*]. Warszawa: Żak.

Porębski, M. (1974). Era grafiki [The Era of Graphics]. In: T. Hrankowska (ed.), *Grafika wczoraj i dziś* [*Graphics Yesterday and Today*] (pp. 5–19). Warszawa: PWN.

Przetacznikowa, M. & Spionek, H. (1976). Współczesne poglądy na zabawę dziecka [Contemporary Views on the Child's Play]. In: M. Żebrowska (ed.), *Psychologia rozwojowa dzieci i młodzieży* [*Developmental Psychology of Children and Adolescents*] (pp. 358–373). Warszawa: PWN.

Stopczyk, S. (1971). *Spotkania z grafiką* [*Meetings with Graphics*]. Warszawa: PZWS.

Szuman, S. (1947). *Psychologia wychowawcza wieku dziecięcego* [*Childhood Educational Psychology*]. Warszawa: IW NK.

Szuman, S. (1948). *Rozwój psychiczny dzieci i młodzieży* [*Mental Development of Children and Adolescents*]. Warszawa: NK.

Szuman, S. (1955). Rola działania w rozwoju umysłowym małego dziecka [The Role of Activity in the Mental Development of a Small Child]. In: S. Szuman, *Dzieła wybrane* [*Selected Works*], Vol. 1: *Studia nad rozwojem psychicznym dziecka* [*Studies on the Psychological Development of a Child*] (pp. 58–170). Warszawa: WSiP.

Szuman, S. (1985). Rola działania w rozwoju umysłowym małego dziecka. In: S. Szuman, *Dzieła wybrane*, Vol. 1: *Studia nad rozwojem psychicznym dziecka* (pp. 58–170). Warszawa: WSiP.

Tomaszewski, T. (ed.) (1977). *Psychologia* [*Psychology*]. Warszawa: PWN.

Wejman, M. (1970). *Katalog. III Międzynarodowe Biennale Grafiki* [*Catalog. 3rd International Graphic Biennial*]. Kraków: BWA.

Werner, J. (1981). *Podstawy technologii malarstwa i grafiki* [*Fundamentals of Painting and Graphics Technology*]. Warszawa–Kraków: PWN.

Vygotsky, L.S. (1978). *Narzędzie i znak w rozwoju dziecka* [*Tool and Symbol in Child Development*], transl. B. Grell. Warszawa: PWN.

Vygotsky, L.S. (2006). *Narzędzie i znak w rozwoju dziecka* [*Tool and Symbol in Child Development*], ed. 2 as amended, transl. B. Grell. Warszawa: PWN.