

## **Communicative competences and learning competences in pupils with hearing impairment in relation to visual memory and attention**

Autor: Kateřina Hádková, Miroslava Kotvová

### **Abstract**

*Communicative competences and learning competences in pupils with hearing impairment in relation to visual memory and attention.* – This paper is dealing with the evaluation of communicative competences and learning competences in chosen pupils with hearing impairment who prefer the visual motor form of communication. These competences were assessed by teachers who had been working with these pupils over a long period of time. To collect the necessary data, we used a questionnaire containing the so-called respond scales. Then, the gained answers were compared with the results of a test focusing on visual memory and attention in order to see if there is any connection between these two closely linked areas.

**Keywords:** questionnaire, comparison, communicative competences, learning competences, visual memory and attention

**Klíčová slova:** dotazník, srovnání, komunikativní kompetence, kompetence k učení, vizuální paměť a pozornost

Nowadays, an important part of educating children in primary and secondary schools is constituted not only by learning contents but also by developing the key competences described in the Framework Education Program as a “summary of knowledge, skills, abilities, attitudes and values which are important for the personal development and employment of each member of the society”.<sup>1</sup> Their contentual definition is based on the “generally shared concepts of the society” in respect of their necessity with regard to reaching the needed level of education, self-realisation, and successful integration into the society. Within the primary level of education, six key competences belong to the fundamental ones: learning competences, problem solving competences, communicative competences, social and personal competences; civil competences and work competences (Framework Education Program for Elementary Education).

In our contribution, we will deal especially with communicative competences and learning competences in pupils with hearing impairment in whose case choosing an appropriate communicative system represents a key to the development of other competences, including learning competences. The same applies to the closely related development of communicative competences. In the case of pupils with severe hearing impairment the development of communication is done in an alternative – visual motor – way, namely with the help of the sign language or signed Czech, or possibly with the help of spoken language combined with the finger alphabet or other visual motor means. The achieved level of visual perception plays an important role since it can limit significantly the pupil's ability to develop

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<sup>1</sup> Framework Education Program for Elementary Education, 2017, p. 11.

skills and abilities connected not only with communicative competences but also with learning competences.

Based on the Framework Education Program for Elementary Education, communicative competences are defined this way:

- The pupil is able to formulate and express his thoughts and ideas in a logical sequence, he expresses himself precisely, coherently and in a cultivated way (in written as well as in oral expression).
- The pupil is able to listen to other people's speeches, understands them, reacts to them appropriately, participates efficiently in discussions, defends his opinion and reasons appropriately.
- The pupil understands various types of texts and records, visual materials, commonly used gestures, sounds, other information and communication means; thinks about them, reacts to them and uses them creatively for his own development as well as for his active involvement into what's happening in the society.
- The pupil is able to use information and communication tools and technologies in order to communicate well and efficiently with his surroundings.
- The pupil uses gained communication skills to build relationships necessary for full-fledged community life and very good cooperation with other people.<sup>2</sup>

Generally spoken, the objective of primary education is to create basic preconditions for the ability of lifelong learning in every person. Therefore, we can interpret learning competences from this perspective as more important than the other, above mentioned, competences (Zezulkova, 2015).<sup>3</sup> Learning competences are defined in the Framework Education Program for Elementary Education as follows:

- The pupil is capable of choosing and making use of appropriate ways, methods and strategies in order to learn efficiently; he plans, organises and manages his learning process, demonstrates willingness to pursue further studies and lifelong learning.
- The pupil is able to find and sort out information and (based on understanding, connecting and systemizing it) can use this information efficiently in the learning process, in creative activities as well as in practical life.
- The pupil is able to apply generally used terms, signs and symbols, he can put things in context, integrates knowledge from various educational areas into bigger units. On this basis, he is able to attain a more complex view of mathematical, scientific, social as well as cultural issues.

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<sup>2</sup> Framework Education Program for Elementary Education, 2017, p. 12.

<sup>3</sup> ZEŽULKOVÁ, Eva. *Vybrané faktory komunikační kompetence žáků v primárním vzdělávání*. Opava: Slezská univerzita v Opavě, Fakulta veřejných politik, 2015.

- The pupil is able to observe and experiment by himself, he is able to compare the gained results, to judge them critically and make conclusions for their future use.
- The pupil is capable to recognise the sense and objective of learning, he has a positive attitude towards learning, can assess his own progress and as well as identify obstacles or problems hindering learning. He is able to plan how he could improve his learning, he can evaluate his learning results and discuss them.<sup>4</sup>

The development of learning competences depends then on the quantity and quality of available learning opportunities which are purposefully created by teachers within school lessons.<sup>5</sup> In the case of pupils with severe hearing impairment this development is done with the help of visual motor communication forms which are linked mainly to visual perception of the impulses surrounding them.

Therefore, a partial objective of the research project carried out with the support of Charles University Grant Agency in the years 2015–2017 was: to follow the pupils with the help of a Likert-Scale-type questionnaire containing the so-called scale responses because this type of answers makes it possible to express the assessment of the extent (or the level) of the required ability or skill related to the competences in question in the most objective way possible. The questionnaire used during the research contained two parts. Each of them had seven items formulated as statements to which responders could express themselves using a six-point scale reaching from “I absolutely disagree” to “I absolutely agree”.

The first part of the questionnaire focused on communicative competences of chosen pupils with severe hearing impairment, whereas the second part followed their learning competences. The questionnaire was given to teachers who had been working with the chosen group of 40 children and pupils since a long time. In the first research stage (which preceded presenting the questionnaire) this group of responders got tested with the help of standardized research tools focusing on their developmental level of visual memory and attention. In the next research stage their competences got tested in which the existence of connections between the variables had been presumed.

That means that we had presumed that the development of partial areas of visual perception and the development of communicative abilities (and related learning abilities) may influence each other. The questionnaire, which was filled in by 17 teachers working with the chosen pupils with hearing impairment on a long-time basis, followed their level of communicative competences as well as learning competences. Gained responses were analysed and graded with the help of a numeric code reaching from 1 to 6. The code expressed an average assessment of the particular area of competences as follows: below-average-band (evaluation reaching mainly values 1 to 2), average-band (prevailing evaluation on the scale reaching 3 to 4) and above-average-band (prevailing evaluation reaching values 5 to 6).

Each pupil from the research sample was evaluated this way by his teacher and it was done in each of the followed competences. In the case of *communicative competences* 8 pupils

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<sup>4</sup> Framework Education Program for Elementary Education, 2017, p. 11.

<sup>5</sup> CHVÁL, Martin, KASÍKOVÁ, Hana, VALENTA, Josef. *Posuzování rozvoje kompetence k učení ve výuce*. Praha: Karolinum, 2012.

with hearing impairment (20 %) got evaluated by their teachers as above-average. 29 pupils (72.5 %) were evaluated as average and 3 pupils below-average (7.5 %). In the area of *learning competences* 4 pupils got classified by their teachers as above-average (10 %), 32 pupils as average (80 %) and 6 pupils as below-average (15 %). Most pupils were evaluated in both competences as average (72.5 % and 80 %).

The results gained from the questionnaire were further compared with the results of testing focused on the level of visual memory and attention which were registered in the first part of the research project. For this testing, we chose purposefully tests that are used in diagnostic practice and are appropriate for pupils with hearing impairment (subtest Coding, from WISC-III, three subtests Picture Identification, Visual Attention Span and Completion of Drawing from Hiskey-Nebraska Test of Learning Aptitude). Resulting performance achieved in the testing was expressed with the help of a points-based score which got transferred to a value expressing the proportion between developmental and chronological age of each pupil. Values ranging between 90 and 110 represented an average performance, values over 110 above-average performance and on the opposite, values under 90 below-average performance. In each of the 40 research subjects it was possible to grade his resulting test performance as either above-average, average, or below-average.<sup>6</sup>

In the next research part the resulting evaluation of each pupil done by his teacher in the area of communicative competences and learning competences got compared with his overall performance concerning visual memory and attention. This comparison was aimed at finding out to what extent the evaluations of both above mentioned competences done by teachers correspond to the results of visual memory and attention testing. It was possible to assume that these variables will be closely connected and will correspond in the case of each pupil from the research sample thanks to their preferences to communicate and acquire information through visual motor forms of communication.

That's why the gained data were compared in detail in all 40 observed research subjects. Results concerning *communicative competences* were analysed even more closely. In this case we found out that the teachers' evaluation was identical with the average results of the visual memory and attention tests in 19 research subjects. In 21 cases this evaluation differed. With regard to the results concerning learning competences, in 17 pupils their evaluation was identical with the results of tests on visual memory and attention, whereas in 23 cases they were different. These data are presented clearly in Figure 1, also expressed in per cents.

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<sup>6</sup> KOTVOVÁ, Miroslava. *Zraková paměť u žáků se sluchovým postižením*. Praha: Karolinum, 2018.

Figure 1 – Comparison of Followed Variables

<b>Comparing the level of communicative competences and learning competences with results of tests focused on visual memory and attention</b>		
	<b>Identical Results</b>	<b>Different Results</b>
<b>Communicative Competences (n=40)</b>	19 x correspondence (47.5 %)	21 x difference (52.5 %)
<b>Learning Competences (n=40)</b>	17 x correspondence (42.5 %)	23 x difference (57.5 %)

From: Research Study (2017)

Results made in this research part didn't confirm the existence of a mutual influence between the level of communicative competences and learning competences on the one side and test results expressing the achieved level of visual memory and attention in pupils with severe hearing impairment on the other side.

### **Conclusion**

In the case of pupils with hearing impairment we can't rely exclusively on stimulating the development of visual perception in order to develop the both above mentioned key competences. We can assume that other factors play an important role in the development of communication and learning ability as well. These factors can be: quality of used compensatory or prosthetic devices, their efficient use, early start of rehabilitation after diagnosing hearing impairment, collaboration between experts, teachers and the family of the pupil with hearing impairment. Future research studies could focus more in detail on the connection between school environment (difference between pupils attending schools for students with hearing impairment and pupils in mainstream schools) and the possibilities how to develop communicative competences and learning competences.

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(*Doc. PhDr. Kateřina Hádková, Ph.D.*, associate professor of the Department of the Special pedagogy at the Faculty of Education, Charles University; *PhDr. Miroslava Kotvová, Ph.D.*, assistant professor at the Department of Special Education at the Faculty of Education, Charles University.)