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## Information Behaviour of Gifted Children – The Qualitative Study

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### Abstract

The study focused on differences in information behaviour between intellectually gifted and average children in the pre-literate age. The main objective of the study was to examine how information behaviour, especially in the form of asking questions, is expressed in gifted children in the pre-literate age, and how it differs from information behaviour in children with average intellectual abilities. In order to meet the pre-literacy condition, participants were chosen from children starting their first year of school (aged 5 to 7).

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### 1. Introduction

Identifying a talent in pre-school children is not always easy. Mindfulness of parents and comparison of children with peers are often enough to recognize the uniqueness of a child and subsequently confirmed by professional staff. Often, however, an exceptional talent is hidden to usual observation for a long time and to its detection other, more specific guidance can be used. The aim of this paper is to explore whether the way exceptionally gifted children ask questions can be included into these guidance. If our assumption that gifted children ask substantially different questions compared to typical intellectually gifted children will be confirmed, then a focus on ways of asking questions can help professionals and parents in identifying talent in such predisposed individuals, because identification is crucial for the development of exceptional abilities of gifted students (Prucha, 2011).

### 2. Method

The theory is based on a cognitive approach to the study of talent, or the Sternberg's theory of intelligence (Hříbková, 2009), which includes three parts, representing individually relationship to the internal world, to an experience and to the external world of the intelligence wearer (Sternberg, 2002). For our research project the first part of the intelligence was pivotal, which deals with information processing. Specifically, this is a component of

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knowledge acquisition that supports the learning process and problem-solving and it is used when an individual meets with new topics.

### 2.1. *Research Aims*

The research objective was to understand the differences between the information behaviour of gifted and average gifted children in the pre-literacy period. The main research aim was therefore to find a difference in the preparedness and readiness of gifted children to ask questions and in a number of questions generated. A qualitative research design was chosen with regard to the opportunity to explore, in which aspects the questions of an exceptionally gifted children differ to questions from an average gifted children, and what direction are their questions orientated.

### 2.2. *Research methods*

Research Methods: Wechsler Intelligence Scale for Children (WISC-III, Czech version: D. Krejčířová, P. Boschek, J. Dan, 2002); The Information Behaviour Questionnaire for Parents (Havigerová, 2011); The Information Behaviour Questionnaire for Children (Havigerová, 2011); Individual Structured Interview focusing on information behaviour.

### 2.3. *Procedure*

First, the evaluation of performance in the Wechsler intelligence scale for children (hereinafter as the WISC-III) selected suitable studied subjects, which were subsequently divided into two categories: generally intellectually gifted (up to IQ values of 130) and extremely intellectually gifted (IQ above value of 130). Then the legal guardians of those selected children were presented with The Information Behaviour Questionnaire for Parents (Havigerová, 2011), by which they were supposed to subjectively rate their child's information behaviour. Subsequently The Information Behaviour Questionnaire for Children (Havigerová, 2011) was administrated to all of the selected children, which contains a part in which the administrator submits an indifferent complaint to a child to invoke the need for information. Children received a choice of three images of unknown objects, after they chose one of the pictures, they were asked to spontaneously generate questions, which come into their minds in connection with this indifferent stimulus. In the last phase of the research the Individual Structured Interview focusing on information behaviour was carried out with individual children, focused on information behaviour.

### 2.4. *The method of data processing*

Exploratory type of research implemented according to the procedures of qualitative methodology, specifically the content and frequency analysis, was chosen for obtained data processing. Within these analyzes all the questions generated by a group of exceptionally gifted were compared to the questions generated by generally intellectually gifted children, according to the predefined categories and rules. The basic category was the number of questions generated, which shows the readiness and how prepared they are to ask questions. The frequency analysis recorded and compared the frequency of occurrences of each question in both groups. The content analysis explored the relevance of the questions generated regarding the selected indifferent image and task. The frequency analysis then recorded differences in the generality of questions between the two groups, as manifested in the use of closed or open questions. Furthermore, typology of individual questions was performed under the thematic analysis that was subsequently grouped according to nationality and the relevance of given topics. The generated groups of themes were then compared between the two groups. Responses of parents on the information behaviour of children were processed by the frequency analysis, and the results of the analysis were subsequently interpreted. The same method was used to process the responses of children on their own information behaviour. The results from both samples were then compared and provided the opportunity to further interpretations.

### 2.5. *Research sample*

The testimonies of six exceptionally gifted children with six average gifted children are analyzed and compared in the present research. To comply with the condition of pre-literacy, the examined people were included in the research at the time of their entry to the first grade at the age of 5 to 7 years.

### **3. Results**

The results of the pilot study clarify what kind of information behaviour gifted children probably engage in during experimental situations where information needs are activated, but also whether there might be a connection between the readiness to ask questions and the level of intellectual ability, and whether this readiness could be a good predictor of information behaviour. It also gives an answer to the question, what are the most common sources of information for such children, how often they are in contact with these sources, whether this experience is mediated by another person, or whether they independently seek information.

Parents of gifted children considered toys as the most common means of obtaining information, with which children are in contact several times a day in their opinion. Other means were television and computer, which in their view, children use at least once a day or several times a week. They were followed by books, which are used several times a day or several times a week, radio was similarly rated as an information source. Other resources included by the parents were listening to CD's and encyclopaedias, several times a week. According to parents of gifted children, these individuals mostly use all these resources separately. Very often, however, also in collaboration with their sibling, it is followed by the use of information sources together with some of the parents, less often with grandparents.

The most striking differences between our selected files within the way of questioning were shown in the rate of general form of questions. Frequency of use of open questions versus closed questions was examined. Proband selected from our research group ask more often and more open questions than probands from the control group. They ask more close questions. The number of spontaneously generated questions is same in both selected groups. Contrary to our expectations, it did not show increased readiness and prepared exceptionally gifted children are to ask questions to such a high extent that we expected - gifted children almost do not differ to generally gifted children in the manifestation of this ability. This result is discussed with other partial conclusions.

### **4. Discussion**

Based on these results, we believe that the ability of exceptionally gifted children to work with open questions allow them to obtain larger responses in information behaviour, and therefore greater amounts of information with which they can continue to operate. Openness of questions may be related to an increased interest to know something just because a large response is expected. We can interpret the increased interest in finding out more information, consistent with the findings of other authors (Mansor, 2002) that exceptionally gifted children are looking for information and are not content with a simple explanation. This research does not provide the possibility to determine where the experience of extremely gifted children in the use of open questions comes from. We can assume that one of the main reasons is the different ways of communication from the parents of exceptionally gifted children among themselves and between them and the child. Other options are different sources of information or different access to the resources that the children choose. But these are just presumptions that should be explored further. There is room for further research in this area, which would attempt to clarify the ability of exceptionally gifted children to ask open questions to a greater extent than closed questions.

A deeper analysis of spontaneously generated questions shows interesting results, which did not show increased readiness and how prepared exceptionally gifted children are to ask questions. However, we have traced significantly increased trend in the number of questions with linguistic instruction. In this way gifted children generated approximately twice more questions than normally intellectually gifted children. This fact can be explained by a link with the above-observed phenomenon that extremely intellectually gifted children are able to generate more open questions. Linguistic guidance was comprised of words introducing only open questions. If in the previous study, we observed an increased number of open questions in extremely gifted children, then we can assume that they are able to work better with these questions and they are therefore more responsive in their generation than the generally intellectually gifted children.

We consider also the identification of some differences in the thematic focus of both spontaneous and guidance generated questions as beneficial, which is dealt with by a number of other authors (e.g. Cooper, 2002). Although in the spontaneous generation of a control file there was no question, focusing on the location of an indifferent initiative occurrence, in the guidance generation these questions were asked by the normally gifted children. It was also possible to note that in the category of secondary themes the questions were generated by the control group during guidance generation. The only category that was not used by the control group either during spontaneous or during guidance generation, was the next level. Here it is possible to believe that exceptionally gifted children show increased interest in further identifying information associated with the given topic, and are not content with just a given stimulus. Their talent allows them to be apparently aware of the broader context and wanting to learn more about them. In the pre-school period the questions of "why" and "how" type start to appear. Children enrich their knowledge and develop the correct expression. They learn to understand complex object relationships and improve their understanding of the multiple meanings of words (Vagnerova, 2005). Increased number of questions in each category of topic in guidance generated questions can be simply explained by an increased total number of guidance generated questions and by the already mentioned increased skills of exceptionally gifted children to work with open questions.

Examining the statements in questionnaires for children and parents in the evaluation of information behaviour has brought interesting findings on how children from our selected groups obtain information. According to parents, children use mostly toys to gather information, this is the case with exceptionally intellectually gifted children as well as generally intellectually gifted children. This fact corresponds with findings from developmental psychology, when a game as a way of gaining experience prevails in both pre-school and early school age. Parents of children reported toys as examples for instance board games, which also corresponds to the focus of children at this age, who already prefer games with more complex rules (Langmeier & Krejcirova, 2006). Among other resources, most often mentioned was a computer, television and books. Less frequently mentioned were, magazines, radio and educational CDs. Interestingly, according to parents, a book appears as a source of information in both groups at approximately the same level, it is not particularly preferred by intellectually gifted children to such an extent as would be expected. The difference can be observed at a rate of activity, which is given to sources of information by the children. According to parents of exceptionally gifted children, a book is along with magazines, computers and toys the most actively alone used source of information, while parents of generally gifted children identified the access of their children to books as more passive. At this point we can again look for the link with the increased need for exceptionally gifted children for knowledge and information retrieval. It is appropriate to verify the findings obtained within further investigation, which would focus on the method of using different sources of information.

Interesting facts were also provided by an analysis of information sources identified by parents and children. For example, children rarely mentioned their mother as a source of information even though the mother regards herself as the source. Here we offer another possible interpretation, associated with maternal perception by a child. Undoubtedly, between mother and child during communication an exchange of information occurs on various topics of interest. A child at this age, however, can realize other functions of mother, more often associated with the daily care and affection and love. A child's understanding of mothers as a source of information can be taken back. Again, this topic seems to us to be very inspiring for further research work in this area.

## **5. Conclusion**

No direct connection was found between the children's level of intellectual ability and either their response latencies in the stimulus situation, or the number of spontaneously generated questions. Gifted children's responses more likely reflected their level of interest aroused by the stimulus material. Preliminary results suggest that questions asked by gifted children in response to a single stimulus encompass greater thematic diversity compared to average children, who prefer to stick to one single aspect (e.g. external appearance) of the stimulus.

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