

The most important talent-attributes in higher education talent-management – by the opinion of Hungarian talent-management administrators/professionals

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ABSTRACT

Gifted-education/talent-management in higher education is a less investigated area, comparing with the primary and secondary education. Although, it is a very important topic, because many scientists have already been involved in research work during their university studies.

Goal; sample; method: The aim of this research was to explore the opinion of administrators/professionals who manage talent management conceptions (honor programs) in higher education with questionnaire method. The questionnaire measured with Likert-scale how important the talent-attributes are. One aim of this study was to investigate whether the attributes can be fitted into a three/four/five factors model. The other aim was to emerge a ranklist from 73 attributes which describe a gifted child/a scientist/a gifted student.

Results: Unfortunately, it has been fizzled out, because just the minority (N=30) of the administrators/professionals filled out the questionnaire. Despite of this, the other aim fulfilled: to emerge a ranklist about the importance of talent-attributes by the opinion of administrators/professionals. So, this is an exploratory study. This ranklist shows what the most important attributes are according to opinions of administrators/professionals who care gifted students in higher education. This can be a standpoint for further researches (specialized for one or more attributes) which investigates gifted students.

Keywords : gifted education, talent-management, higher education, potential scientists

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I. INTRODUCTION

Hungarian institutes of higher education have processes called talent development (in other words: honor-programs). The talent-development process is a university's attempt to select, foster, nurture, and encourage high-performing students toward a scientific career. For the purpose of this study, the terms honour programs, gifted education, and talent development are synonymous. Many researchers seek to identify individual attributes, in addition to intellect, that contribute to success in gifted and honours programs. These components have been investigated, summarized, and measured in articles and books (Balogh, 2012; Davis, 1975; Sivevska, 2010), but the majority of this literature pertains to primary and secondary educational systems. However, questions still remain on what are goodness-of-fit factors for students in tertiary educational degree programs.

There are studies that explore scientists' minds and cognition after they are working in their guilds. Examples of these studies address the unique personality and individual traits of scientists (Simonton, 2004; Feist 2006; Helmreich et al, 1980). Scientific psychology, a sub-area of psychology, deals with the mental background of the motivational, cognitive, and creative factors at scientific processes (Feist, 2006). There is a need to address cognition, perception, motivation, and creativity in the developmental

space of early adulthood and career development. This space between secondary-school gifted education and starting one's academic career is what is termed the higher education talent management process (i.e., talent development). The aim in this level is to foster the academic reinforcement.

Talent development in higher education can be imagined as a bridge between formal school studies and scientific career. Many scientists have already been involved in research work during their university studies (Feist, 2006). However, in Hungary, as well as other countries' universities, only few higher education institutes have professional and formal talent management system. Fortunately, some programs and projects have been founded which try to connect the two areas (higher-, and secondary education). These programs filter out gifted students in the secondary schools, and then help them get involved in an appropriate gifted education form or format (Balogh, 2012). This is why this topic is an important one and a new potential area to investigate. These results may fill a gap between the literature of scientific thinking, and giftedness at the primary and secondary schools.

Another argument of higher-education talent development must be mentioned. Higher education has become a standardized, structured approach of mass education in many countries over the past few decades. This is a shift from what the university was for centuries; a form of gifted education in and of itself (Balogh, 2012). Therefore, we must identify talented students in this mass-education approach and provide appropriate services. We must pay critical attention to prevent gifted secondary school students from dropping out of their studies, and at the same time, locate new potential scientists among the university students. Hence, the care for and development of talents and abilities of students can determine the fate of an entire nation (Sternberg, 1996).

This research investigated the opinion of administrators/professionals who manage talent management conceptions in higher education: members of Association of Hungarian Talent Support Organizations (MATEHETSZ); committee members of TDK/OTDK (a honor program, exposed in literature), leaders of szakkollégium (advanced college for gifted students, another honor program, exposed in literature), etc. So, they are a narrow layer in talent management process. An aim of this study was to investigate whether the attributes can be fitted into a three/four/five factors model. Unfortunately, it has been fizzled out, because just the minority of the administrators/professionals filled out the questionnaire. Despite of this, the other aim fulfilled: to emerge a ranklist about the importance of talent-attributes by the opinion of administrators/professionals. So, this is an exploratory study. This ranklist shows what the most important attributes are according to opinions of administrators/professionals who care gifted students in higher education. This can be a standpoint for further researches (specialized for one or more attributes) which investigates gifted students.

It is necessary to describe how we interpret this concept we call talent. It can be explained by many

different theoretical frameworks (e.g., raw intellect, academic performance, individual traits, special research and projects). In the Hungarian system, we have a difficult task differentiating the terms "talent", "gifted", and "honours" because we use the same word – tehetség – for every domain of talent management: sport, art, education. It refers to both potential and established talent. Giftedness in higher education is often specified as an excellent performance at studying (earning the best marks or grades). For example, in Scandinavian countries there are rigorous filters for the students who want to take part in university studies (Wolfensberger, 2015). There are universities in central Europe where it is not enough to be a good learner and obtain good grades. We do not assume that raw intelligence (or being a good student) equals giftedness or talent. In Hungary, the tehetség (the exceptional student) requires extracognitive stimulation and nurturing. Extracognitive means important factors besides intelligence which help the manifestation of talent (Shavinina & Ferrari, 2004). (For example: personality traits, cognitive traits, environmental requirements) Many universities in the BENELUX countries, Germany, and the Hungarian system, term someone as a gifted/talented student if he or she also becomes involved in scientific research work or projects. In the U.S.A., talent is also nurtured in higher education through specialized talent management programs referred to honours programs or honours college (Johnson, Walther, & Medley, 2018).

This study investigated the Hungarian talent development system where we refer to "talented students" as learners who take part in additional opportunities besides the obligatory studies (by joining a szakkollégium or a research group or a talent program; managing their own research project; writing a TDK work – the unique Hungarian conceptions are described below). The "talent management" programs in Hungarian higher education refers to the system in a university which helps students become involved in scientific research, to present their results in scientific conferences, or to publish their papers in peer-reviewed journals. The main role in higher education talent management belongs to the supervising university professors who teach the talented, interested students how to conduct scientific research and participate in the professional guild. There are also administrators who help the talented students to find scholarships, conferences, and research supplement funding and opportunities.

II. MATERIALS AND METHODS

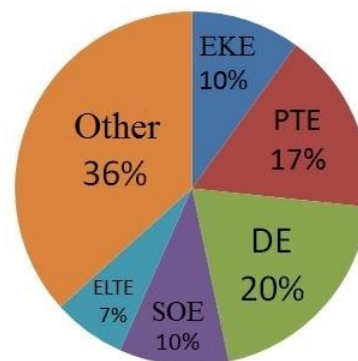
The sample consists of a narrow, special target-group: such professionals and administrators who work in talent-management conceptions, programs in higher education. They know the process of talent-management both in theoretical aspect and in practical aspect. For example: members of Association of Hungarian Talent Support Organizations (MATEHETSZ), leaders of talent programs/szakkollégiums, committee members of TDK/OTDK. They take part not only at mentoring talented students (who want to be a scientist), but also they are responsible for coordination of talent-management in higher education (for example: managing administrative

affairs, scientific investigation of background of giftedness/talent, organizing conferences and programs, etc.). So, they have a lot of routine at the work with talented students. An other important fact about the participant is that they cover more science-domains. They have view onto the work of students from different science-domains in a wide spectrum, not only onto their own domain. For example: A coordinator of faculty of humanity has view onto literature, history, psychology, English studies, etc, not only onto one domain. So, they know better the talents, than a professor who supervises only his/her own research-group.

Backgrounds of the selected sample: Association of Hungarian Talent Support Organizations (MATEHETSZ) coordinates gifted education/talent development projects; helps at scientific researches about giftedness/talent; publishes books and booklets about giftedness/talent; and the manifestation of theory into practice (Balogh 2012). The most member of MATEHETSZ is a scientist or has a full-time job at a Hungarian university. How it is mentioned in the literature, the Movement of Szakkollégium (Advanced college for gifted students) is one of the main unique form of Hungarian talent development (besides the Movement of TDK/OTDK). That is why, the leaders of the accredited szakkollégiums were asked to take part in this research. In 2015, there were 42 accredited szakkollégium. In 2019, this number has increased to 45. A lot of author of Genius-books (a book-series; published by Association of Hungarian Talent Support Organizations) work in the Institute of Psychology of University of Debrecen. So, they had important role at compiling of the literature of giftedness/talent. That is why, I asked them for participation. There are TDK-committees and talent-committees in the universities. They organize the TDK-conferences and manage the review and evaluation processes of TDK-works, and they advertise opportunities for gifted students. The different roles sometimes overlap each other. For example: a member of MATEHETSZ (Association of Hungarian Talent Support Organizations) may take part in a TDK-committee, and at the same time, he/she may be a leader of a szakkollégium.

Unfortunately, just the minority of the looked-up professionals has got or has filled out the questionnaire. I sent the questionnaire to more than 70 people (some of them were asked to retransmit to their colleagues), but I got back just 30 questionnaires (N=30). This participation number of the chosen sample is not unique: in an American study with similar target group, just 28 professionals gave answer the questions pertained to the work with gifted students in higher education (Johnson, Walther, Medley, 2018). 10 members of MATEHETSZ (Association of Hungarian Talent Support Organizations) and 13 leaders of a szakkollégium answered to me, the others came from TDK-committees. The majority of target-group (talent-management professionals) works at a Hungarian university. The distribution of these universities is illustrated on Figure 1.

Figure 1



On the figure 1, only those universities are represented with separate slice from where more than one professional gave answer. Official abbreviations of the five universities (and number of answer-givers):

- EKE - Eszterházy Károly University (3)
- PTE - University of Pécs (5)
- DE - University of Debrecen (6)
- SOE - University of Sopron (3)
- ELTE - Eötvös Lóránd University (2)

Method

I used questionnaire method. The questionnaire was anonym and voluntary and it was sent directly to the relevant people. The only one demographical information was the affiliation (university/szakkollégium/talent-committee/etc). The questionnaire contained a list of 73 talent-attributes (e.g. "curiosity", "endurance", "role of mentors", etc) with a Likert-scale from 1 to 10. The 73 talent attributes were collected from the literature-background of giftedness/talent. The task was to evaluate the importance of the 73 talent-attributes with the 10-points-Likert-scale: '1' means "it is negligible"; '10' means: "it is essential at the manifestation of giftedness/talent". At the end of the questionnaire, there were four rubrics: the participants could write their own answer/option into these. The questionnaire had both online and paper version.

III. STATISTICAL ANALYSIS AND GRAPHICAL PRESENTATION

I ordered the attributes by mean of evaluations from the highest ranked to the last. The differences among the items are very small; there are not emergent attributes. Although, the difference between the most important attribute (Curiosity; mean: 9.27) and the least important attribute (Gender; mean: 3.37), but the means of attributes in the middle distribute continuously without any salience. This is represented by Figure 2.

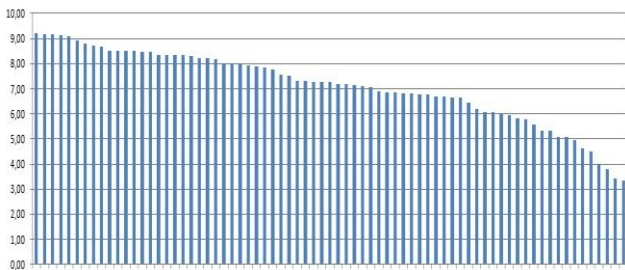


Figure 2 (Distribution of means of attributes)

Despite of the few sample, I started a factor-analysis to supply the previous ranklist, and to test the other original hypothesis whether 3/4/5 factors (like a talent-model) can be created from attributes. The main-components of factor-analysis are represented on Figure 3.

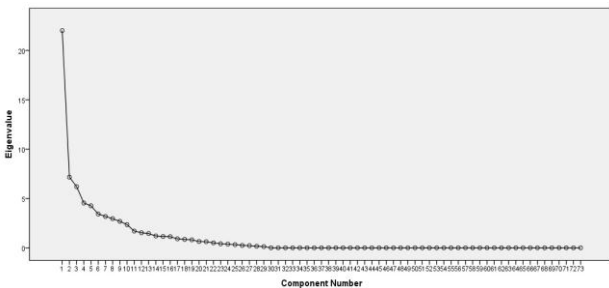


Figure 3

The first, emerging main-component explains 30% of the variance. It seems by the arrangement of main-component that a 3/4/5 model would not work. The second main-component is interesting: it explains 10% of the variance, but it contains only motivational factors, like diligence, practice; endurance, commitment; self-control, will; handling failures; intrinsic motivation.

IV. RESULTS

The essence of this investigation (the most important attributes for a potential scientist/talented student) is listed in table 1. This list show the top ten attributes, ranking by means of evaluation.

Table 1 (the 10 most important attributes by the talent-management professionals)

Sl.no.	Attribute	Mean of evaluation	Standard deviation
1.	Curiosity	9,27	1,05
2.	Endurance	9,20	0,85
3.	Logical thinking	9,20	0,76
4.	Highlighting the essence	9,17	0,75
5.	Need for developing	9,13	0,86
6.	Recognizing the	8,97	1,10
7.	Diligence, practice	8,83	1,51
8.	Intrinsic motivation	8,77	1,04
9.	Domain-specific creativity	8,70	1,29
10.	Originality	8,57	1,30

Another interesting result is the distribution of inner – environmental contributor-factors of talent: the first environmental factor (role of mentor) stands only on 22th place. The second environmental contributor is the “influence of peers” stands on 37th place. So, it can be concluded that the inner factors are more important than the environmental. Although, environmental factors were mainly written into the four rubrics at the end of questionnaire (as own option). For example: “role of institutes”, “acknowledgement by social environment”, “ensuring research-conditions”.

The night-side of talent/giftedness was not preferred: the majority of negative attributes which attend talent were located at the bottom of the list: for example: compulsivity, headstrongness, tendency to mental disorders, etc. This tendency proved true in primary and secondary education, the teachers prefer rather the intellectual and motivational factors than the individual and quaint traits of personality (Hany, 1995).

V. DISCUSSION

This investigation proves how complex is the giftedness/talent. The results are very heterogeneous, despite of the sample consisted of talent-management professionals/administrators who work almost daily with talents. Therefore, often the qualitative researches are more successful than the quantitative in this field.

It is a surprising result that the professionals were not so cooperative: just the minority of the asked professionals filled out the questionnaire. Despite of, their main quest is improving/nurturing the talent management/gifted education system. Unfortunately, this was not a unique case (Johnson, Walther, Medley, 2018).

If we compare the current result with the result of another study we can see that the persons responsible for talent management think similarly to the professors and associate professors supervising and mentoring talented students. (Szabó, Révész, Van Dyke, under process). The goal of the other study was to explore the opinion of professors and associate professors who directly work with talented/gifted students: they supervise the students. I collected sample not only in Hungary, but also in Germany. Table 2 shows the ranklist of most important talent attributes by administrators; Hungarian; and German professors.

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Table 2 (the most important attributes by administrators; Hungarian; and German professors)

S.N	Administrators (current study)	Hungarian professors	German professors
1.	Curiosity	Recognizing the coherency	Self-dependence
2.	Endurance	Highlighting the meaning	Professional knowledge (crystallized intelligence)
3.	Logical thinking	Curiosity	Logical thinking
4.	Highlighting the essence	Self-dependence	Intrinsic (inside) motivation
5.	Need for developing	Engagement	Recognizing the coherency
6.	Recognizing the coherency	Logical thinking	Curiosity
7.	Diligence, practice	G-factor (general intelligence)	Handling the failures, hardness
8.	Intrinsic motivation	Continuous developing needs	Self-control, will-power
9.	Domain-specific creativity	Intrinsic (inside) motivation	Diligence, practicing
10.	Originality	Open-mindedness	Social competence

VI. CONCLUSION

The list underpins the fact: in higher-education, the extracognitive-factors (personality based, motivational) are more important than the intellectual (Szabó, 2014; Feist, 2011; Szántay, 2016). Owing to the small sample, it is not possible to conclude substantive conclusions from the results of factor-analysis. The second - "motivational" - factors may show a direction for further references: investigating detailed the motivation of talents may result useful information. Another further direction: it is more worthy to investigate inner factors than environmental-factors. Of course, this means not that the role of environment is negligible, but it is harder to study more detailed.

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