ASSESSMENT OF OCCUPATIONAL COMPETENCE OF DEAF AND HARD OF HEARING INDIVIDUALS

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Abstract. When choosing a future profession, it is important for deaf and hard of hearing (DHH) students to be aware of the limitations that can be caused by a hearing loss. However, due to common prejudices, factors such as gender of a DHH person or the prestige level of the desired profession, can also be perceived as limiting. This paper deals with the assessment of occupational competence of DHH men and women made by DHH primary and secondary school students, in relation to the assumed occupational prestige and the required level of communication. The sample consisted of 97 DHH students of the last two grades of primary, and all grades of secondary schools for DHH students in Serbia. The adapted version of the “Evaluation of occupational competence” (EOC) scale (Sela & Weisel, 1992, according to Weisel & Cinnamon, 2005) used in this study was further adapted for testing in Serbia. The results obtained after data analysis indicate the existence of significant differences in assessing occupational competence of DHH men and women in relation to occupational prestige and the required level of communication.

Keywords: occupational competence; deaf and hard of hearing; communication; decision making; prestige.
Introduction

In order to choose an appropriate profession, DHH (deaf and hard of hearing) students must consider their own occupational competence, and in relation to it, occupations which are a realistic choice (Weisel & Cinamon, 2005). Occupational competence is a multidimensional construct characterized by the existence, preservation and improvement of the required knowledge, skills and attitudes towards work (Rubin et al., 2007). Competence development is an integral part of a learning process which expands the capacities of individuals in order to achieve the desired results. Occupational competence is also defined as the capacity to respond to the demands of the environment and to interact with the environment through daily work (Schwammle, 1996).

The final forms of school are especially important for the process of selection of the future profession, considering the fact that it is a period when pupils start to make plans, explore and make decisions on finding employment or continuing schooling (Šešum & Radić-Šestić, 2016). When choosing a profession, it is very important whether an individual considers it appropriate or inappropriate for their own gender. Many professions are stereotypically viewed as appropriate for only men or women. One of the consequences of the relative isolation of the community of the deaf is also the tendency to retain traditional stances in relation to gender roles, which remains with the deaf to a great extent even after it has been overcome in the majority population (Harris, 2020). Many young deaf persons may severely limit their choice of a profession for assumed bias. If the deaf students yield to the traditional categorization of professions in relation to gender, their choice of potential occupations will be limited doubly. Staufer and Long (2019) underline that the deaf rarely opt for jobs which they do not consider suitable for their own gender as well as that it is clear that deaf students are considerably more conservative in this regard than their typical peers. Such attitudes among the deaf are also maintained, among other reasons, for fear that opting for an unsuitable occupation would reduce the possibilities of employment and disable them to achieve full professional competence (Moccia, 2019).
The skills of managing career, finding a new job and promoting one’s own high qualities are nowadays more important than ever before, and they involve the range of communication skills which represent a much greater challenge for the deaf and hard of hearing than for the typical persons (Punch, 2016). The success in work, depending on its nature, may be significantly harder for deaf and hard of hearing persons if they are not fluent speakers of the dominant language of the surroundings (Schoffstall et al., 2015). Hearing impairment has a considerable effect on communication, thereby affecting the availability of occupations deaf and hard of hearing persons may follow, which leads to higher unemployment with this population (Bradley et al., 2013). DHH people prefer to choose occupations in which manual factor is more prevalent than verbal, and they generally have lower aspirations than their peers with typical levels of hearing, which may be the consequence of parents’ attitudes who mainly believe that their children would prefer vocations based on data and objects manipulation than those which require frequent communication with people (Parasnis et al., 1996).

In order to heal deaf and hard of hearing persons to overcome professional barriers, it is important to identify factors which affect them (Michael et al., 2015). It is in the interest of the social community that deaf and hard of hearing workers, in the same way as the typical ones, are content with their jobs as it has a positive effect on their performance at work. In order to achieve this, in addition to adequate working conditions, it is necessary that they should be enabled to be provided with employment in prestigious professions as well and not only to be employed in “blue collar” professions, which has mostly been the case up to date (Lempka, 2019).

Since choosing an appropriate occupation is of vital importance for DHH students, and since their perception of occupational competence of DHH persons is considered to be a significant factor which contributes to choosing a particular occupation, it is important to examine this significant construct. The aim of this research was to determine how DHH students evaluated the occupational competence of DHH men and women with regard to the required level of communication and occupational prestige.

Method

The hypotheses of the research

Based on the presented results of the authors who have studied this research question, the hypotheses of the research have been formulated. The general hypothesis of this research is that deaf and hard of hearing students who attend schools for the deaf assess differently the professional competence of deaf and hard of hearing persons for different groups of professions.
The special hypotheses relate to the following expectations:

H1. Deaf and hard of hearing students assess the professional competence of men and women for certain groups of professions differently.

H2. Deaf and hard of hearing students assess more favourably the professional competence of the deaf and the hard of hearing for professions which are less demanding in terms of communication.

H3. Deaf and hard of hearing students assess more favourably the professional competence of the deaf and the hard of hearing for occupations which are not considered to be socially prestigious.

Participants

The research was conducted on a sample of 97 DHH students in residential schools for DHH students, in seven cities in Serbia–Subotica, Novi Sad, Belgrade, Zemun, Jagodina, Kragujevac, and Niš. With regard to gender, there were 51 (53%) male and 46 (47%) female participants. In relation to school-age, the research included 41 (42%) primary and 56 (58%) secondary school students. Depending on the level of hearing loss, according to the WHO classification, there were 25 (26%) students with mild and moderate hearing loss, 32 (33%) with moderate-to-severe and severe hearing loss, and 40 (41%) with profound hearing loss. In relation to the primary way of communication, there were 41 (42%) participants who primarily used oral speech, 30 (31%) participants who primarily used sign language, and 26 (27%) participants who used total communication. With regard to overall academic achievement at the end of previous semester, there were 12 (12%) students with good achievement, 32 (33%) with very good, and 53 (55%) with excellent achievement. The questionnaires were completed anonymously. The approval for conducting the research was requested from the management of the schools for the deaf and the hard of hearing. The managers of these schools approved the conducting of the research upon the agreement with the students’ parents.

Administration of the measures

“Evaluation of occupational competence” (EOC) scale (Sela & Weisel, 1992, adapted version, according to Weisel & Cinamon, 2005) was used to evaluate occupational competence in this research. The choice of professions included in the scale was adapted according to the nomenclature of occupations in Serbia, since the original version of the questionnaire included occupations our DHH students were not familiar with.

The scale included 24 professions, and the participants had to state whether each of the professions was suitable first for DHH men, and then for DHH women. Since the research task was the assessment of occupational competence
of DHH men and women made by DHH students of both genders, gender and hearing loss were common factors in participants’ identification with the population whose competence was assessed. After the participants gave their statements, three hearing and speech specialists grouped the professions according to the criteria of social prestige and required communication (from a DHH student’s perspective), and then according to traditional gender predetermination. In this way, 4 subscales were formed for the first division: 7 prestigious occupations requiring intensive communication (teacher, lawyer, detective, journalist, priest, doctor, actor), 6 prestigious occupations not requiring intensive communication (banker, mathematician, dentist, pilot, veterinarian, athlete), 5 non-prestigious occupations requiring intensive communication (beautician, police officer, florist, waiter, merchant) and 6 non-prestigious occupations not requiring intensive communication (car mechanic, plumber, cook, driver, bricklayer, tailor). With regard to the criterion of gender predetermination, the following three subscales were formed: 4 typically female occupations (beautician, florist, cook, tailor), 8 typically male occupations (police officer, pilot, detective, priest, car mechanic, plumber, driver, bricklayer) and 12 gender-neutral occupations (teacher, lawyer, banker, mathematician, journalist, waiter, merchant, doctor, dentist, actor, veterinarian, athlete).

The participants did the test twice; first they chose the occupations they considered appropriate for DHH men, and then they chose the ones they considered appropriate for DHH women. For each completed questionnaire, scores on each subscale were calculated according to the number of occupations in that subscale which the participant marked as appropriate for DHH men or women, which was then divided by the total number of occupations in the subscale. Scores on the scale ranged from 0 (unmarked occupation) to 1 (marked occupation); higher total scores indicated a higher evaluation of the competence of DHH persons for different groups as well as for individual occupations.

Procedures

The research was conducted in small groups of students (3–5) in school classrooms. It was performed during the day, in morning and afternoon shifts. First, the students were given precise instructions and explanations, and they started answering questions only when it was clear that they understood completely. Oral speech and sign language were used for giving instructions. While the research was being conducted, there were no incidents nor unforeseen difficulties, which is likely the result of the good choice of instruments, adjustment of communication and preparation of the students for the testing as well as the fact that the students completed the questionnaires in small groups in the rooms they are familiar with.
Results

Table 1 shows descriptive data referring to the lowest, highest, and average response values of all participants, as well as standard deviation values for occupational competence assessment tests.

Table 1. Descriptive indicators of participants’ results on the EOC scale

<table>
<thead>
<tr>
<th>Professions</th>
<th>Assessment of men’s competence</th>
<th>Assessment of women’s competence</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>N</td>
<td>Min.–Max.</td>
</tr>
<tr>
<td>NFC – NP</td>
<td>97</td>
<td>2–6</td>
</tr>
<tr>
<td>NFC – P</td>
<td>97</td>
<td>0–6</td>
</tr>
<tr>
<td>FC – NP</td>
<td>97</td>
<td>0–5</td>
</tr>
<tr>
<td>FC – P</td>
<td>97</td>
<td>0–7</td>
</tr>
</tbody>
</table>

FC = Require frequent communication; NFC = Do not require frequent communication; P = Are considered prestigious; NP = Are not considered prestigious.

In the group of 6 professions not considered prestigious and not requiring frequent communication, DHH students marked slightly under 5 professions on average when assessing occupational competence of men, and nearly 2.5 professions when assessing occupational competence of women (there was also a statistically significant difference in the average values determined for these two occupational categories (t=19.74; p <0.001).

In assessing occupational competence of DHH persons for professions considered prestigious and not requiring frequent communication, the average number of marked professions in this group for both men and women was greater than 2, with men’s competence being assessed slightly better, even though statistically significant differences were not determined (t=1.69; p=0.094).

The participants believed that DHH men were potentially competent for fewer than 2 given professions not considered prestigious and requiring frequent communication, while potential competence of women was assessed significantly better with 2.64 professions (a statistically significant difference was determined in the average values for these two occupational categories t=-7.99; p<0.001).

In the group of professions considered prestigious and requiring frequent communication, the participants’ assessments varied across all given professions, and were almost equal for men and women (t=-0.34; p=0.731). The students’ responses indicated that they found this occupational group least suitable for DHH persons.

The results of t-test for determining intra-group differences in assessing the adequacy of DHH men for different professions showed that there were statistically significant differences of the results in all occupational groups requiring
less frequent communication compared to the professions requiring more frequent communication, regardless of the assumed occupational prestige. All determined significances confirmed that the participants believed that DHH men were more competent in professions not requiring frequent communication compared to those which required it.

Thus, significant differences were found when assessing the competence of DHH men for non-prestigious professions with low communication requirements and non-prestigious professions with high communication requirements \( (t=22.18; p<0.001) \), then between non-prestigious low-communication professions and prestigious high-communication professions \( (t=19.96; p<0.001) \), between prestigious low-communication professions and non-prestigious high-communication professions \( (t=3.84; p<0.001) \), as well as between prestigious low-communication professions and prestigious high-communication professions \( (t=5.01; p<0.001) \).

Also, with regard to professions requiring less frequent communication, the participants believed that non-prestigious professions were more appropriate for DHH men than prestigious ones \( (t=15.00; p<0.001) \). Statistically significant differences in the results were not confirmed only when comparing prestigious and non-prestigious professions with high communication requirements \( (t=0.65; p=0.516) \).

When assessing the competence of DHH women for different professions, a significant difference was found between the results of occupational assessments both with regard to communication requirements and the assumed occupational prestige. The exception were assessment results of women's competence for non-prestigious professions with low communication requirements and non-prestigious professions with high communication requirements, where statistical significance was not found \( (t=-1.52; p=0.131) \). Also, the significance was not determined when comparing the assessment of women's occupational competence for prestigious and non-prestigious occupations with low communication requirements \( (t=1.17; p=0.243) \).

When assessing occupational competence of DHH women for non-prestigious professions not requiring frequent communication and prestigious professions requiring frequent communication, statistically significant differences were determined \( (t=5.70; p<0.001) \) confirming a higher competence of these workers for non-prestigious professions with low communication requirements. Significant differences were also determined when comparing the assessments of their competence for prestigious professions requiring or not requiring frequent communication \( (t=3.91; p<0.001) \), where low-communication professions were assessed to be more adequate for DHH women workers, as well as when comparing prestigious and non-prestigious professions requiring frequent communication \( (t=7.3; p<0.001) \), where the students more positively assessed women's competence for non-prestigious professions.
The comparison of competence assessment for prestigious professions with low communication requirements and non-prestigious professions with high communication requirements (t=-2.12; p<0.005) is particularly interesting, indicating that DHH students believed that non-prestigious professions with high communication requirements were more adequate for DHH women.

When comparing the competence of DHH men and DFF women for different professions depending on communication requirements and assumed occupational prestige, it is interesting that significant differences were determined in men’s professions which required less frequent communication and were assumed to be less prestigious than all 4 groups of women’s professions. In this research, men were assessed to be more competent for these professions than women for any group of professions. Statistically significant differences were determined between the mentioned group of professions from men's list and the following professions from women's list: 1) non-prestigious professions with low communication requirements (t=19.74; p<0.001); 2) prestigious professions with low communication requirements (t=17.24; p<0.001); 3) non-prestigious professions with high communication requirements (t=20.62; p<0.001); and 4) prestigious professions with high communication requirements (t=23.21; p<0.001). It was also found that men were assessed to be more competent when comparing their competence for prestigious professions with high communication requirements and women’s competence for prestigious professions with low communication requirements (t=4.99; p<0.001).

After comparing competence assessment DHH men for professions requiring frequent communication with competence assessment of DHH women for different occupational groups, it was determined that the participants believed that: 1) DHH women were more competent for non-prestigious professions with low communication requirements than DHH men for non-prestigious professions with high communication requirements (t=-4.85; p<0.001); 2) DHH women were more competent for prestigious professions with low communication requirements than DHH men for non-prestigious professions with high communication requirements (t=-7.99; p<0.001); 3) DHH women were more competent than DHH men for non-prestigious professions with high communication requirements (t=-7.99; p<0.001); 4) DHH women were more competent for non-prestigious professions with low communication requirements than DHH men for prestigious professions with high communication requirements (t=5.41; p<0.001); and 5) DHH women were more competent for non-prestigious professions with high communication requirements than DHH men for prestigious professions with high communication requirements (t=-6.94; p<0.001).

Statistically significant differences were not determined when comparing the results of assessments between: 1) DHH men for prestigious professions with low communication requirements and DHH women for non-prestigious professions with low communication requirements (t=-0.14; p=0.887); 2) DHH
men and DHH women for prestigious professions with low communication requirements \((t=1.69; \ p=0.094)\); 3) DHH men for prestigious professions with low communication requirements and DHH women for non-prestigious professions with high communication requirements \((t=-1.22; \ p=0.227)\); 4) DHH men for non-prestigious professions with high communication requirements and DHH women for prestigious professions with high communication requirements \((t=0.48; \ p=0.633)\); and 5) DHH men and DHH women for prestigious professions with high communication requirements \((t=-0.34; \ p=0.731)\).

**Discussion**

The results of the research indicate that deaf and hard of hearing students assess the professional competences of deaf and hard of hearing men and women differently to a certain extent, which partially confirms the first hypothesis.

The results of our research indicated that the participants assessed the competence of DHH men to be the best for non-prestigious professions with low communication requirements, while they found DHH women to be most competent for non-prestigious professions with high communication requirements. After a detailed analysis of competence assessment of DHH men and women for the professions categorized according to the mentioned criteria, it was observed that DHH students considered DHH women more competent for professions with high communication requirements than DHH men, but they also believed that neither DHH women nor men are competent for prestigious professions. Our results are to some extent in line with the results of the research (Michael et al., 2011) which indicate that gender stereotypes of DHH persons regarding their occupational competence are widespread, although stereotypical perceptions of the competence of men and women for different professions in typical population are becoming less common. Harris (2020) agrees with these results and points out that even though the changes in the attitude to education within the hearing population have also affected the population of the deaf, the categorization into occupations suitable for male and female gender still exists among the deaf. On the other hand, based on the results of their research, Weisel and Cinamon (2005) concluded that, unlike their peers with typical levels of hearing, DHH adolescents did not believe that occupational competence of DHH women significantly differed from the competence of DHH men. Moccia (2019) emphasises that one of the most efficient ways to overcome bias with regard to the gender conditioning of professions is to enable direct contact of deaf and hard of hearing students with the persons who practise atypical professions in terms of gender. Based on such contacts, the students could be assured of unfounded categorisation of professions according to the gender, which could have positive implications for their opting for a wider range of professions.
The second hypothesis has been confirmed for all compared groups as regards the assessment of men for different professions, considering the fact that the statistically significant difference has been established among all groups of professions which require and which do not require frequent communication. As for the assessment of women for different professions in relation to the communicational demand, the hypothesis can be considered partially confirmed.

Communication requirements of a profession were found to be a primary criterion when assessing the competence of DHH men, since the results consistently indicated that the participants considered DHH men less competent for professions requiring frequent communication regardless of the assumed occupational prestige. When assessing women's competence, an interesting result is that the examinees consider the non-prestigious professions which require frequent communication to be most suitable for women. The participants considered DHH men and women least competent for prestigious professions with high communication requirements. These results are to a certain extent in line with assertions of Haynes (2014), who believes that the problems in communication represent the obstacle for numerous professions, which is why deaf and hard of hearing persons who have been trained for them may find themselves in the situation of years’ long unemployment. Moreover, the results of the research from 2015 (Perkins-Dock et al., 2015) confirm that the problems in communication significantly contribute to the lower employment of deaf and hard of hearing persons and present a primary obstacle for the employment and professional progress of deaf and hard of hearing persons. Due to the obstacles in communication, deaf and hard of hearing persons are often compelled to do jobs which are below the level of their education (Boutin & Wilson, 2009 according to Schoffstall et al., 2015). The result of our research which indicates that women are more competent for professions that are not prestigious, but require frequent communication is the probable consequence of the fact that women are generally perceived as the gender preferring to communicate, and thus have greater opportunities in professions which require frequent communication. Unfortunately, these professions are mostly paid less due to the lower prestige (Harris, 2020).

The results of our research indicate that both men and women are assessed to be less competent for prestigious professions than non-prestigious ones. It is evident that the participants consistently gave preference to non-prestigious professions although the statistically significant difference was not established in all intergroup comparisons, which partially confirms the third hypothesis of the research. These findings are in accordance with the results of an Israeli research (Weisel & Cinamon, 2005), according to which DHH adolescents found DHH men and women less competent for professions which implied higher social prestige. The obtained results are expected considering that the data support the claim that many deaf and hard of hearing persons are still not in an equal position on the job market, especially when jobs which are considered to be
socially prestigious are in question (Luft, 2016). The averagely lower education of the deaf also contributes to deaf persons perceiving the prestigious profession inaccessible to deaf persons. For instance, it is evaluated that only 17% of the deaf in the USA has gained university degrees in comparison to the 32% of the hearing persons (Garberoglio et al., 2017).

Assessment of occupational competence of DHH men and women can be significantly influenced by available models, i.e., working DHH people in students’ environment they can look up to. The lack of such role models, or their involvement in only a few, undemanding and underpaid professions, can contribute to the unrealistic image of DHH students about their own work capacities and opportunities.

**Limitations**

The limitations of this study refer to the structure of the participants, since all participants included in the research are educated in schools for deaf and hard of hearing students. Due to the legislation of the Republic of Serbia and the way inclusive education is organized, researchers’ access to deaf and hard of hearing children educated in inclusive conditions is very limited and difficult to get.

**Conclusion**

The results of this research lead to a conclusion that deaf and hard of hearing students of higher grades of primary and all grades of secondary school, educated in segregated settings, have different perceptions of occupational competence of deaf and hard of hearing persons for different groups of professions. The findings indicate that DHH students consider DHH men less competent than DHH women for professions requiring frequent communication, but at the same time do not consider DHH women nor men competent for highly prestigious professions. Since the results are in line with the traditional views of professional roles of men and women in Serbia as well as with the bias relating to the possibilities of deaf and hard of hearing persons, it is evident that the participants’ attitudes were significantly influenced by the cultural heritage of their domicile environment.

The obtained results should serve as a starting point for planning the process of sharing professional information in schools for DHH children, as well as in inclusive schools, since the assessment of occupational competence of DHH persons is a significant factor in the process of students’ professional orientation.
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Процењивање професионалних компетенција глувих и наглувих особа

Резиме

Приликом избора будуће професије важно је да глуви и наглуви ученици буду свесни ограничења која могу бити последица оштећење слуха. Међутим, због устаљених предрасуда догађа се да се фактори попут пола глуве особе или нивоа престижности жељене професије такође могу перципирати као ограничавајући. У раду се испитује процењивање професионалних компетенција глувих и наглувих мушкараца и жена од стране глувих и наглувих ученика основних и средњих школа у односу на претпостављену престижност професије и ниво комуникације који она захтева. Узорак је чинило 97 глувих и наглувих ученика седмог и осмог разреда основне и свих разреда средње школе, који се школују у школама за глуве и наглуве на територији Србије. Коришћена је адаптирана верзија скале евалуације професионалне компетенције (енгл. Evaluation of occupational competence (EOC) scale) (Sela & Weisel, 1992, према: Weisel & Cinamon, 2005), која је додатно прилагођена за потребе испитивања у Србији. Резултати истраживања добијени након извршене анализе података указују на постојање значајних разлика у процењивању професионалних компетенција глувих и наглувих мушкараца и жена у односу на престижност претпостављене професије, као и у односу на ниво комуникације који она подразумева.

Кључне речи: професионалне компетенције; глуви и наглуви ученици; комуникација; одлучивање; престижност.

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