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**Self-reported knowledge and understanding of deafblindness of teachers from a special  
school in Cyprus**

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### **Abstract**

**Title:** Self-reported knowledge and understanding of deafblindness of teachers from a special school in Cyprus

**Problem Definition and Aim:** Deafblindness requires special educational support. However, not all teachers of learners with deafblindness are able to meet their deafblind students' needs, as most educators have limited formal and specific education. This study aimed to gain insight into the five teachers completed two questionnaires, and then a focus group was conducted with four of the five teachers. The data from the two collected questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS), and the focus group was analyzed with Atlas.ti using thematic analysis.

**Results:** The participants of the study report to have limited knowledge of deafblindness and misunderstandings about deafblindness, and repeatedly expressed during the focus group their need for training in deafblindness. They also mentioned during the focus group the needed teachers' characteristics and academic skills/knowledge to adequately teach deafblind students. However, the rating of their self-efficacy in teaching their deafblind students is relatively high.

**Conclusion:** The study revealed low self-reported knowledge and understanding of deafblindness, but high self-efficacy on deafblindness.

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## **Introduction and Theoretical Exploration**

Deafblindness combines visual and hearing impairments in varying gradations and means a unique form of living (Damen & Worm, 2013). People with deafblindness are usually distinguished into subgroups based on the time of onset, which are congenital deafblindness (CDB) and acquired deafblindness (ADB) (WFDB, 2018).

Even though deafblind people form a heterogeneous group, they have commonalities in encountering problems with communication, information access, and orientation and mobility affecting their participation in society (Dammeyer, 2012). They also face restrictions in decision-making, independence, and the ability to execute daily living tasks. Communication obstacles, especially for people with deafblindness who interact through touch, may lead to high stress levels (Hersh, 2013).

Deafblindness causes specific educational needs that are different for each individual with deafblindness (WFDB, 2018). Variations in educational needs of learners with deafblindness are caused by the heterogeneity of this group of learners. For instance, there are differences between people with deafblindness in the time of onset and severity of the sensory impairments. Many people with deafblindness have additional impairments that need further support (WFDB, 2018). Their commonalities in needs are specialized support services, environmental alterations, and technological aids (Dammeyer, 2012).

As a result, on the abovementioned specific educational needs, teachers of deafblind students experience many challenges in educating them (Hartmann, 2012). One of their biggest challenges is communicating meaningfully in the most natural ways with deafblind students (Miles, 1995) as their communication attempts may be idiosyncratic and difficult to interpret (Riggio & McLetchie, 2008). Moreover, teachers need to develop and foster their deafblind students' communication abilities through exposure and repetition (Riggio &

McLetchie, 2008). They also need to possess skills to establish a trusting relationship with each of their students with deafblindness (Riggio & McLetchie, 2008).

Additionally, educators need to identify their deafblind students' specific educational needs and implement systems to ensure and provide access to quality education (Riggio, 2009:2). Particularly, teachers should have specific knowledge and skills to suit their students' learning needs (Riggio & McLetchie, 2008). They also need to be competent in promoting their students' acquisition of social and developmental concepts and skills to enhance their learning opportunities and build social relationships and independence (Riggio & McLetchie, 2008). Furthermore, they should be able to facilitate access to environmental information and assess their students' sensory and communication development, capabilities, and interaction (Blaha et al., 2009).

Assessment of language and interaction is another challenge teachers experience, as it is a complex procedure (Blaha et al., 2009). Nevertheless, it is needed for the construction of an educational program that supports the learning style and interest of a person with deafblindness (Miles, 1995).

Perceived competencies influence the actual competencies, that is to say, teachers may have the necessary skills and/or knowledge to perform a task correctly but may be impeded by self-doubt, low motivation, weak commitment, and other negative thoughts. According to Hartmann (2012), a person's own judgment of their abilities to perform a task or achieve a goal is called 'self-efficacy'. Self-efficacy does not concern the actual skills or knowledge that people may have. It is explained as people's beliefs about their own competencies to complete specific tasks in a given situation rather than the actual skills or knowledge required to achieve a goal (Bandura, 1977).

According to Barni et al. (2019), a study in Italy found that teachers' personal values were significant predictors of teachers' self-efficacy. Particularly, teachers' high self-efficacy

was associated with conservation, openness to change, and self-transcendence. Moreover, a study in the USA examined the self-efficacy beliefs of novice teachers in comparison to experienced teachers. Lower mean self-efficacy beliefs were found among novice teachers compared to experienced teachers (Tschannen-Moran & Hoy, 2007). Moderately low self-efficacy of novice teachers in educating children with deafblindness is also confirmed by the study of Hartmann (2010). Novice teachers of this study were unsure of the administration support they would get and had no or limited positive teaching experiences. In contrast, teachers with high self-efficacy had multiple years of experience in deafblindness education, and one of four teachers with high-self-efficacy also indicated her willingness to take on any challenge (Hartmann, 2010).

Teachers of learners with deafblindness need to experience self-efficacy to be able to execute their teaching tasks (Hartmann, 2012). Teachers' self-efficacy plays a crucial role in influencing students' outcomes, achievements, and behaviors (Klassen et al., 2009). Efficacy also influences the goals educators set, their degree of aspiration, and the endeavor they invest into teaching (Tschannen-Moran & Woolfolk Hoy, 2001). As stated by Hartmann (2012), teachers with high levels of self-efficacy can confront and are willing to take on difficult challenges in their work. For example, teachers of students with autism spectrum disorder had a higher sense of self-efficacy, a more profound commitment to a theoretical orientation that guided their practice and experienced lower levels of burnout than other special needs educators (Jennett et al., 2003). In contrast, teachers with a low sense of self-efficacy displayed that they felt not able to face challenges nor influence students with unsupportive home environments or who were unmotivated (Bandura, 1994, as cited in Hartmann, 2012).

In other words, according to Zimmerman et al. (2017), self-efficacy involves an individual's judgments about his/her ability to perform and achieve a task. On the other hand,

competence is the expression of knowledge and skills required for a position (Yesilyurt, 2014). To master any skill, individuals proceed through four stages of learning (unconsciously incompetent, consciously incompetent, consciously competent, and unconsciously competent), described by the Conscious Competence Matrix (CCM) model, capturing the process of change through learning (Kongsvik, 2021).

In addition to the previously described special competences and self-efficacy in teaching learners with deafblindness, teachers also need to understand that deafblindness includes not only people who are completely deaf and completely blind but also every individual with visual and auditory impairments in varying degrees (Larsen & Damen, 2014). Their understanding of deafblindness and the needs of deafblind people will likely influence their teaching approaches and also their beliefs about their capabilities in teaching learners with deafblindness.

Although students with deafblindness need to be educated by individuals who are prepared to meet their unique needs (Correa-Torres et al., 2020), most educators of deafblind learners have limited formal and specific education (Corn & Ferrell, 2000). Therefore, according to Correa-Torres et al. (2020), specialized training is needed for teachers to work effectively with them.

This study investigates the abovementioned aspects in teachers who work with adult learners with deafblindness in a special school in Cyprus. The purpose of this study is to gain insight into the perceived knowledge and understanding of and self-efficacy in teaching learners with deafblindness of teachers who work at a special school in Cyprus.

To our knowledge, no research has been carried out that focuses on educators' perceived knowledge and understanding of deafblindness and their self-efficacy. Investigating teachers' perceived knowledge and understanding of deafblindness and their self-efficacy is relevant because these can affect their teaching approach. By investigating

both the perceived knowledge of deafblindness on the one hand and teachers' self-efficacy on the other hand, more insight can be obtained in the relationship between perceived knowledge and self-efficacy. For example, the teachers may know how to communicate with a person with deafblindness but may not feel sufficiently competent.

The present study aims to answer the following research questions:

1. What do the teachers report about their knowledge of deafblindness?
2. What do the teachers report about their understanding of deafblindness?
3. How do they evaluate their self-efficacy in deafblindness education?
4. What training do they think they need?

## **Method**

### **Research Design**

A mixed methods approach using questionnaires and a focus group was chosen to investigate teachers' understanding and knowledge of deafblindness and their self-efficacy in deafblindness education. This approach is considered most suitable for the specific study as the researcher is allowed to answer simultaneously quantitative and qualitative questions that cannot be answered by quantitative and qualitative methods independently (Opoku et al., 2016). It is also appropriate because it endeavors to consider various perspectives and viewpoints using quantitative and qualitative data (Johnson et al., 2007). Particularly, mixing questionnaires and focus group is ideal for the study as questionnaires aim to access participants' attributes and attitudes and examine patterns, and semi-structured focus group gather more in-depth participants' perspectives, attitudes, beliefs, and experiences through group interaction (Flick, 2018).

### **Participants**

The participants were five educators who work with deafblind adults in a special school in Cyprus. Three teachers were female, and two were male. The female teachers



taught cooking, handicrafts, and art. The male teachers taught pre-vocational training and basket weaving. The demographic information on the five participants is provided in Table 1.

Participants' precise age will not be mentioned to protect their anonymity; thus, six age categories were created. Particularly, the age categories were 18-24, 25-34, 35-44, 45-54, 55-64, and above 65 years old. Concerning their students' age, the same procedure was applied. The age categories were: 0-5, 6-12, 13-18, 19-25, 26-35, 36-45, 46-50, above 51 years old.

In the schoolyear 2021-2022, seven women with acquired deafblindness and one woman with congenital deafblindness attended the school. The most common cause of their acquired deafblindness was Usher Syndrome, as four of them were diagnosed with this syndrome, and the person with congenital deafblindness had CHARGE Syndrome. The youngest age group they belonged to was 26 to 35 years old, and the oldest was above 51 years old. The communication modes used by them were spoken language, sign language, tactile sign language, and Braille.

**Table 1**

*Personal information of the teachers*

	Frequency
Gender	
Male	2
Female	3
Age	
35-44	3
45-54	2
Age of their deafblind students (participants could choose more than one answers)	
19-25	2
26-35	3
36-45	3
46-50	2
51+	2

## **Ethics and Recruitment Procedure**

Prior to the start of the study, the research proposal was submitted to the Ethics Board of the Pedagogical and Educational Sciences at the University of Groningen and approved.

The researcher recruited the five participants through personal contact with them at the specific school. The researcher approached each of them individually, informing them about the study and asking if they were interested in participating. Of the five prospective participants, the three teachers who teach basket weaving, handicrafts and cooking indicated their willingness to participate. One of the two prospective participants who did not participate in the study said s/he did not want to participate as he/she had negative experiences as a participant in a previous study. The other teacher had left the school. Thus, these two were replaced by two other educators of learners with deafblindness teaching pre-vocational training and art. After recruiting the five participants, the researcher sent a detailed email to them about the purpose, the procedure, and the ethics code.

Moreover, before participating in the research, the teachers signed the combined consent form including information about the questionnaires and the focus group, their rights, and the requirements of participating in the study.

## **Instruments**

The two questionnaires were developed in English, and then translated into Greek by the researcher. Questionnaire 1 had two parts. The first part collected their personal, career, and training information. The second part collected information regarding their understanding of deafblindness. For the development of Questionnaire 1 four stages were followed in this order: formulated the questions, designed the layout, designed the coding scheme, and finally sent the questionnaires digitally (Williams, 2003). They were included closed-ended questions and short-answer questions (Malhotra, 2006) about teachers' knowledge and understanding of deafblindness.

Questionnaire 2 assessed participants' self-efficacy and was based on the Teacher Efficacy in Deafblindness Education Scale (TEDE; Hartmann, 2012), with some adaptations to make the questionnaire better fit with the context of the study. The process of adapting Questionnaire 2 had the following steps: adapting questions to the situation in Cyprus, and making the questions clear, changing words in questions that nowadays are not used (i.e., help deafblind students was replaced by support deafblind students), translation, revision, and finally sending the questionnaires digitally. Based on the TEDE, Questionnaire 2 contained statements that teachers should rate according to the degree to which they agreed with the statement, choosing from a five-point Likert-type scale. Moreover, in the specific questionnaire the participants evaluated from one as the lowest to ten as the highest their knowledge of deafblindness, communication skills, ability in Braille and sign language.

Regarding the focus group, the researcher developed a series of questions designed to keep the focus group session on track while exploring issues relevant to the research questions. The session was based on a semi-structured question guide (Table 2).

**Table 2**

*Questions discussed in the focus group*

Question type	Questions
Opening	What experiences have you had with deafblind students? (e.g., positive and/or negative)
Introductory	How would you evaluate your communication skills and your knowledge of deafblindness? Why?
Transition	How would you explain deafblindness to someone who doesn't know? What is the difference between congenital and acquired deafblindness?
Key	What qualifications do you believe are needed to teach students with deafblindness?

Question type	Questions
	To what extent and how do you adapt the teaching approach to a student with deafblindness compared to a student who can hear and/or see? What activities do you establish to foster their communication skills and independence?
Ending	How do you evaluate your deafblind students? What training do you think that you need? The school requires you not only to learn Braille but also Cypriot Sign Language. What is your opinion about this?

### Data Collection

First, the five participants completed the two questionnaires digitally and individually. The researcher sent by email the link to all participants to complete the two questionnaires on a date that was arranged by the participants and the researcher.

Then the focus group was organized, and four of the five teachers, who completed the questionnaires, participated. One of the five teachers could not participate due to health issues. The focus group took place in a quiet schoolroom and was conducted by an external moderator, a special needs teacher with knowledge and experience in teaching students with deafblindness. During the focus group, the researcher had a role of an assistant moderator and was responsible for the recording equipment and taking notes.

The external moderator briefly explained to the participants about their voluntary participation in the research, confidentiality, and the ethics code. She introduced herself and the researcher and informed them about the topic of the study and that the focus group would concentrate on their experiences as teachers of learners with deafblindness, their understanding of deafblindness, and their skills in deafblindness education and the training they believe they need. Verbal instructions were provided to the participants on how to participate in the discussion. The external moderator also explained that there were no right or wrong answers and that her role was facilitative as she would not participate in the

discussion. Before of carrying out the session, two meetings were conducted between the researcher and the external moderator to organize and discuss about the focus group.

The session started initially with a discussion centered on their experiences with their students with deafblindness and they were asked to characterize those experiences. Then the external moderator asked them to evaluate their communication skills and knowledge of deafblindness and to explain why. The conversation moved to their understanding of deafblindness. The questions were focused on how they would explain deafblindness to someone who does not know, and the differences between congenital and acquired deafblindness. They were also asked about the type of deafblindness of their students. Then the external moderator posed questions regarding the qualifications that teachers need to teach deafblind adults and their teaching approach. The conversation ended with questions about the training they had already received and the training they believe they need.

The focus group had a pre-decided structure, but not to strictly dictated line of questioning. The external moderator challenged the participants by asking open question, encouraged group interaction, and paraphrased their answers by asking them if this was what they mean. The session lasted 70 minutes and at the end of the session the external moderator summarized the discussion with confirmation, reviewed the purpose, asked if anything has been missing, thanked the participants and discharged them.

### **Data Analysis**

The data from the two questionnaires collected were analyzed using the Statistical Package for Social Sciences (SPSS) and were organized, presented, analyzed, and interpreted using descriptive statistics. Frequency tables and a chart were used to present the data and the researcher looked for strong agreement between the five participants in the questionnaires.

The focus group was analyzed with Atlas.ti by thematic analysis using a combination of open coding and predefined codes. The researcher transcribed the data collected from the

audio recorded session of the focus group. The researcher did not transcribe everything from the focus group meeting, as she omitted statements that were not relevant to the discussion but to procedural matters, such as ‘close the window.’ During the process of transcription, initial thoughts were noted as it is considered a vital analysis stage (Riessman, 2005). Then the researcher read the transcription repeatedly to familiarize herself with her data and took notes for coding. Subsequently, an initial list of ideas was generated about what was in the data and what was interesting about them including the production of initial codes from the data. When all data had been coded, the researcher sorted the different codes into potential themes collating the relevant coded data. The researcher then reviewed the potential themes by reading the collated extracts of each theme and considering if it is a coherent pattern. She also considered the validity of each theme regarding the data. Moreover, she defined and named the themes by identifying the story that each theme tells, what is the interest about them and why (Braun & Clarke, 2006).

Lastly, the researcher, to ensure study’s credibility, did an intra-rater reliability (Korstjens & Moser, 2018) by re-transcribing and recoding the first transcript to investigate whether she was consistent with her initial codes. Through intra-rater reliability the researcher was consistent as her recoding was compatible with the initial coding. It was an essential stage of the research since credibility determines whether the data represent valid information derived from participants’ original findings and are a proper interpretation of their original views (Korstjens & Moser, 2018).

## **Results**

The results are described in line with the four research questions: (1) knowledge of deafblindness, (2) understanding of deafblindness, (3) teachers’ self-efficacy on deafblindness education, and (4) the training they believe they need. The thematic analysis process applied to the transcript highlighted vital concepts in subthemes for each theme that

were evident in the data (Table 3) (Braun & Clarke, 2006). The quotations were in Greek language and were translated to English verbatim by the researcher. Hesitations and words like “erm, uhm...” were removed for readability purpose. To assure anonymity, the participants have a number (e.g., P1), the moderator is referred to as M, and the names of the participants’ students and the interpreter are changed to pseudonyms.

**Table 3**

*Thematic map*

Theme	Subthemes
Knowledge of deafblindness	Experiences Training they received Recognizing the need for further training Type of deafblindness of their students Difficulty in their self-assessment
Understanding of deafblindness	Defining deafblindness Differences between acquired and congenital deafblindness
Teachers’ self-efficacy	Difficulties they face Teaching approach specialized for deafblind students
Training they believe they need	Teachers’ academic qualifications Teachers’ personal characteristics

**Knowledge of deafblindness**

As knowledge is the information or awareness gained through experience and/or training, the five teachers shared their information on their backgrounds through the questionnaire 1, described below (Table 4). Their study fields were special needs education, fashion design, arts, chemistry science, and carpentry. Three of the five participants had master’s degrees in arts, food science, and occupational therapy for children and adults with disabilities.

**Table 4***Degree*

Degree	Frequency
Bachelor's Degree	2
Master's Degree	3

The given information from questionnaire 1 on teachers' years of experience in special needs education, working with deafblind adult students, working at the particular school, and the training they already had, is provided in Table 5. Four categories were formulated regarding their years of experience in special needs education, working with deafblind adult students, and working at the particular school. The four categories were 1-5 years, 6-10 years, 11-15 years, and above 16 years.

Moreover, one of the five participants filled in questionnaire 1 to have attended a seminar on deafblindness, titled 'employment and rehabilitation.' Three of the five participants responded in questionnaire 1 that they were willing to attend a seminar on deafblindness in the future. Four out of five participants had read and used literature and scientific books about deafblindness.

**Table 5***Questionnaire 1 responses: Years of experience and training they received*

Experience and Training	Frequency
Years of experience in special needs education	
1-5	3
11-15	1
16+	1
Years of experience working with deafblind students	
1-5	4
16+	1
Years of experience working in the specific school	
1-5	4
16+	1



Experience and Training	Frequency
Frequency of training at the school	
Never	4
Once a year	1
Attended seminars on deafblindness	
Yes	1
No	4
Attending seminars on deafblindness in the future	
Yes	3
Do not know	2
Reading literature about deafblindness	
Yes	4
No	1

Additionally, the four participants of the focus group discussion expressed the experiences they had during the years they had been working with deafblind adults. Two of the four participants frequently expressed the feeling of anxiety about communication when they had just been hired at the school and were asked to teach individuals with deafblindness. Specifically, they expressed concerns about how they would be able to communicate and how they would be able to teach the students. Another anxiety factor mentioned was the extended time it takes to become aware and prepared to teach adults with deafblindness. The other two of the four participants mentioned that they did not face any difficulties or experience anxiety with their particular students.

*[P3] When I found out that I had to teach students with deafblindness I was very nervous, to be honest, because I didn't know how I was going to be able to communicate with them. However, the anxiety was very high because I felt I couldn't communicate. So, for the first couple of months, whenever I had (lessons) with these (deafblind) girls, I would come in (the classroom) and think about what I was going to do, how I was going to do it, what I was going to explain.*

*[P4] I agree (with the abovementioned) as I had too much anxiety in how I could communicate. But okay this year especially that we have Amy (interpreter) who helps us with our sign language, and it is indeed easier, and you learn a little bit easier, let's say, and the way we communicate is now a little bit easier...It definitely caused me a lot of stress, but it was something like the challenge that slowly...*

*[P3] Yes, yes it is. It's challenge*

*[P4] You're going to try to figure it out. For example, to teach them how to sew, I put the pins on the clothe so they could feel where the pins were so they would know where to pass the needle. It's just that by the time we can get to a point where we know, we'll be closed (meaning the school will close for the summer). But ok.*

*[P5] I only worked with Emma and Sophie. I had no difficulty because they have residual vision and hearing. I wasn't nervous either. Emma and Sophie are not difficult cases.*

*[P1] And my experiences have to do with Emma and Sophie. The challenge was not particularly difficult because they are also adults, and they have a lot of experience in how to do something. It's something that you can build on them and help yourself in communication and teaching.*

The participants mentioned many positive experiences with their deafblind students.

Two of the four participants shared their students' happiness when they are at the school and their students' amazing ideas. These two participants both explained to view teaching deafblind adults as a challenge because they had to differentiate their teaching approach tailored to their students.

*[P4] ...But, okay. I just noticed how incredible ideas they (deafblind students) have*

....

*[P3] Zoey for example, who when she figures out what she needs to do is incredible. And then on her own she finds out, I mean, she takes the base that I give her and adds new things, I mean she's amazing.*

...

*[P3] And the joy of the individuals, when you see that they are happy, and Zoey is jumping, Claire whenever she sees me, she hugs me and wants to work even harder. Yes, each in her own way. So, you can see you're on to something...*

Regarding the training they received, it was mentioned by one of the four participants that the participant organized training individually by reading scientific articles about deafblindness and learning sign language. Two of the four participants who were working only with students with residual vision and hearing mentioned that their training is adequate as they did not face any difficulties during their lessons with their students.

*[P3] Yeah, I personally signed up for a course last year to learn sign language, but when I first came (to school) 20-21 due to covid it didn't happen. I searched for university articles, not google articles...scholar, academic stuff, so I read some articles talking about deafblindness, but you have to look at the everyday life of the people with deafblindness you have. It's much more general information they have. But they (the articles) helped me with when they don't listen to me, they don't notice me, touch, the sensory what do you call it, go back to touch to communicate.*

*[P1] It depends on the cases. I believe without having worked with people with severe forms of deafblindness that my training would not have been adequate. The individuals that I'm working with right now I think that it's (their training) adequate.*

*[P5] I agree (with [P1]).*

Throughout the focus group discussion, the need for training in deafblindness to adequately teach adults with deafblindness was raised. All participants recognized and strongly agreed with this need.

*[P4] I think we would like to yeah (laughter) learn a little bit more so we can communicate together (with their deafblind students).*

*[P3] Well, we definitely need more training, if we work with people like these for a long time. I would go back to the first question and answer that if I had more, if I had some kind of training, I would have saved those first couple of months of trying to adjust and figure out how to communicate with them and guide them. So, definitely any training is helpful.*

*[P1] We definitely need training to be able to cope and to be right in our work as well.*

*[P5] We want training.*

*[P1] I think that training is necessary when you're dealing with people, who have a lot of low visual acuity and in that case you put it all out there. I think we should definitely have (been trained). Anyway, I didn't have any training on this (in the field of deafblindness). But, especially, I think with my work I should have (been trained).*

Lastly, the difficulty in assessing their own knowledge of deafblindness was raised during the discussion. Notably, two of the four participants in the focus group, both teaching only students with residual vision and hearing, agreed and expressed having this difficulty due to their lack of experience of working with students with different types of deafblindness. These two participants explained that they did not consider their students as complex cases to teach them. They believed that they would have to work with other students with deafblindness who are considered for them difficult cases and face challenges and complex situations to assess their own knowledge of deafblindness.

*[P5] I don't face difficulties because I didn't work, I didn't work with people...*

*[P3] ...such as Claire, Zoey*

*[P5] Yes, I don't know the difficulties, to see my potential. It is with blind people with impaired vision that I have worked. With these individuals, if I rate myself, I am at 9 out of 10 to help them. In deafblindness I don't have any...I didn't see my potential.*

*[P1] Well, I can say something similar. I didn't come to this difficult position either, so I can say. I didn't try there (in the field of deafblindness). I mean, I've had experiences with other students in special schools, for example, who had a hard time communicating, but I think there's a difference here with these (deafblind) people who can't say a lot of things. In terms of behavior.*

## **Understanding of deafblindness**

In questionnaire 1 the teachers were asked their opinions regarding statements about the deafblindness. To give a summary of the teachers' understanding of deafblindness, the study analyzed the measurement of the understanding level of the teachers. The results regarding this were summarized and presented in Table 6.

**Table 6**

*Understanding of Deafblindness*

Statement		Strongly Agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Strongly Disagree (5)
Deafblindness is a distinct disability as the person attempts to use one impaired sense to compensate for the other one is time consuming, energy draining and most often fragmented.	Frequency Mean: 2.80 Std. Deviation: .837	0	2	2	1	0
Deafblindness is simply deafness plus blindness.	Frequency Mean: 3.00 Std. Deviation: 1.000	0	2	1	2	0
The term deafblindness describes a condition that combines ONLY complete blindness and deafness.	Frequency Mean: 4.00 Std. Deviation: .707	0		1	3	1
The term deafblindness describes a condition that combines ONLY complete blindness and hearing residual.	Frequency Mean: 3.80 Std. Deviation: .447	0	0	1	4	0

Statement		Strongly Agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Strongly Disagree (5)
The term deafblindness describes a condition that combines in varying degrees both hearing and visual impairment.	Frequency Mean: 1.60 Std. Deviation: .548	2	3	0	0	0
There are three types of deafblindness: congenital, acquired, and elderly deafblindness.	Frequency Mean: 2.00 Std. Deviation: .000	0	5	0	0	0
Congenital deafblindness is defined as hearing and vision loss from birth.	Frequency Mean: 2.20 Std. Deviation: 1.095	1	3	0	1	0
Acquired deafblindness is defined as hearing and vision loss after the start of language development.	Frequency Mean: 3.00 Std. Deviation: 1.000	0	2	1	2	0
People with Usher Syndrome have congenital deafblindness.	Frequency Mean: 3.00 Std. Deviation: .707	0	1	3	1	0
People with congenital and acquired deafblindness encounter the same degree of communication, information access, and orientation and mobility problems.	Frequency Mean: 3.80 Std. Deviation: .837	0	0	2	2	1
Every person with deafblindness is unique.	Frequency Mean: 1.40 Std. Deviation: .548	3	2	0	0	0

Statement		Strongly Agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Strongly Disagree (5)
People with deafblindness have the same needs.	Frequency Mean: 3.60 Std. Deviation: 1.140	0	1	1	2	1
People with deafblindness use the same mode to communicate.	Frequency Mean: 3.80 Std. Deviation: .837	0	0	2	2	1
People with deafblindness communicate in one of the following modes: sign language, tactile sign language, spoken language, Braille, magnified writing.	Frequency Mean: 2.40 Std. Deviation: .548	0	3	2	0	0
There are no people with deafblindness who use verbal speech to communicate.	Frequency Mean: 4.00 Std. Deviation: .707	0	0	1	3	1
The government does not need to fund support services for deafblind people because they can benefit from deaf or blind people's services.	Frequency Mean: 4.20 Std. Deviation: .447	0	0	0	4	1

There is a strong agreement among the five educators on the statements about the three types of deafblindness (congenital, acquired, and elderly deafblindness) ( $M = 2$ ,  $SD = .000$ ). They generally agreed on the term deafblindness, which describes a condition that combines hearing and visual impairment in varying degrees ( $M = 1.60$ ,  $SD = .548$ ). Notably,

two of the five teachers strongly agreed, and three of the five teachers agreed. They also generally agreed that every person with deafblindness is unique ( $M = 1.40$ ,  $SD = .548$ ); three of the five teachers strongly agreed, and two of the five teachers agreed. The five teachers generally disagreed on the question stating that the government does not need to fund support services for deafblind people because they can benefit from deaf or blind people's services ( $M = 4.20$ ,  $SD = .447$ ). In particular, four of the five teachers disagreed, and one of the five teachers strongly disagreed.

The abovementioned findings were consistent with the data of the focus group regarding the explanation of the term of deafblindness in the focus group discussion. Among the two of the four participants there was a uniform opinion that deafblindness is a dual sensory disability, which needs a different approach from deafness or blindness. It was also often mentioned that deafblind people are unique, and each of them is different.

*[P1] It's a compound. For me it's a disability which combines more than one factor. There is the difficulty in terms of vision and hearing because something different arises from the combination of those two, that is, it's not...you don't have a person in front of you who is just blind, you don't have a person who is just deaf, it's something special that wants its own approach every time, according to me. That's how I can explain it.*

*[P3] Two senses are not functioning and increase the difficulties. It's more complicated, more complex. And the character of each person also plays a role.*

*[P5] Each case is different.*

*[P4] Yes, each case is different.*

*[P3] And the cognition (of each person with deafblindness).*

Moreover, the participants in the focus group had similar opinions about the terms of congenital and acquired deafblindness. They expressed their definition of acquired deafblindness as the disability that is obtained during a person's life and explained the psychological effects of people with acquired deafblindness. It was also frequently mentioned by one participant, who seemed confident of the answer, that the main difference between congenital and acquired deafblind people is their experiences. Particularly, as people with acquired deafblindness have obtained one or both of their sensory impairments during their lives, they would have more experiences than people with congenital deafblindness.

*[M] What are the differences between acquired and congenital deafblindness?*

*[P3] The first one (acquired deafblindness) comes during his lifetime with a condition that is occurring or that is rising.*

*[P4] Yes, I agree.*

*[P1] Basically, the main difference of these (two types) yes, it is (the abovementioned) ... just the main difference for me is that empirically a person who has acquired blindness has experiences, has experiences and he can be worked and can function in a different way anyway.*

*[P3] Or the person (with acquired deafblindness) recalls to a worse degree what he lost.*

*[P1] This yes, this is based on his psychological condition. How to deal with it simply empirically the person himself can somehow take it as a gift for that person or can take it as a curse, that is, I have had it, (now) I don't have (vision and hearing) but basically the difference is the empirical for me.*

*[M] Ok. Another?*

*[P4] I have nothing to add.*

*[P5] I agree.*

Regarding congenital deafblindness, two of the four participants expressed the need for the intervention of different professionals for children with congenital deafblindness, as they explained that due to their dual sensory disability, they do not have many experiences. These two participants also differentiated their roles in relation to the age of the deafblind individuals as it was said that interventions should be provided during childhood. In particular, one of the four participants expressed the need for other professionals to work with deafblind children. Then one of the participants agreed with her words and expressed the importance of special needs education. The other two participants mentioned that they agreed with the two abovementioned participants without clarifying why they agreed.

*[P3] Look reading the articles that I had found it takes a big part to allow kids to develop some things themselves. So that's where elementary education is going to work more, to get some skills from when they were babies. Even perceptual, cognitive (skills), because certainly their own knowledge is reduced because of the two conditions. So, that's where they need to work on from the day, they are babies and when they come to us now, they are adults. I think we can't do so much intervention it's important and the developmental part of it to be more, to develop more, I think.*

*[M] So the age of the people, and you think there's a big part that others have to...*

*[P3] Yes, others (need) to work with them (children with congenital deafblindness) before it's too late, because their brains are being formed.*

*[P4] I have nothing to add.*

*[P5] I agree. I don't have anything to add either.*

*[P1] Special needs education is needed again in that area, for sure. And treatments, they need treatments. It is the part of why a child with deafblindness can be deprived of many other things, let's say, mobility. Let's say that a child who belongs to the norm will go outside*



*and play, run, jump around. For all this for a child with deafblindness various specialties are needed to help develop the skills that are necessary for infancy, anyway after infancy. Physiotherapy, occupational therapy is needed, speech therapy certainly from one stage onwards. That is, special education.*

In addition, Table 7 provides self-reported information from the five teachers on the type and the categories of their deafblind students given by questionnaire 1. Four of the five participants taught students with congenital deafblindness. One of the five teachers taught students with acquired deafblindness, while three of the five participants did not know if they had taught students with acquired deafblindness.

**Table 7**

*Questionnaire 1 responses: Type and categories of their deafblind students*

	Frequency
Teaching students with congenital deafblindness	
Yes	4
No	1
Teaching students with acquired deafblindness	
Yes	1
No	1
Don't know	3
Teaching totally blind and deaf students	
Yes	3
No	2
Teaching totally blind and hard-of-hearing students	
Yes	2
No	3
Teaching students that are totally deaf and have residual vision	
Yes	3
No	2
Teaching students that have both residual vision and hearing	
Yes	5

However, during the focus group, when they were asked about their students' type of deafblindness, they all knew. Two of the four participants mentioned that they taught students

with congenital and acquired deafblindness, and two of the four participants stated and agreed that they taught only students with congenital deafblindness.

[P3] *I work with (people of) both (types).*

[P4] *With (people of) both (types), yeah.*

[P5] *Well, (I work with people with) Congenital deafblindness.*

[P1] *Yeah, it's congenital deafblindness. The experience...the people I'm here with. I mean working with them. I think these issues of Emma and Sophie preexist, yeah. They (the issues) weren't acquired. Yeah, I think that the two individuals were born with these problems.*

[P3] *Yes, it's more complex. They (Emma and Sophie) have additional problems.*

### Teachers' self-efficacy

To give a summary of the teachers' self-efficacy, the study analyzed the measurement of self-efficacy of the teachers. The results regarding this were summarized and presented in Table 8.

**Table 8**

*Teachers' self-efficacy in teaching students with deafblindness of the five participants*

Statement		Very Low (1)	Low (2)	Neither low nor high (3)	High (4)	Very high (5)
Improve the understanding of a deafblind student who is not achieving or learning	Frequency Mean: 3.20 Std. Deviation: .447	0	0	4	1	0
Respond effectively to challenging behaviors from students with deafblindness	Frequency Mean: 3.00 Std. Deviation: .707	0	1	3	1	0
Provide appropriate challenges for students with deafblindness during my lesson	Frequency Mean: 3.20 Std. Deviation: .447	0	0	4	1	0
Provide an alternative explanation or activity when students with deafblindness have difficulty in their understanding	Frequency Mean: 3.60 Std. Deviation: .894	0	1	0	4	0

Statement		Very Low (1)	Low (2)	Neither low nor high (3)	High (4)	Very high (5)
Motivate students with deafblindness who show low interest in my lesson	Frequency Mean: 3.60 Std. Deviation: .548	0	0	2	3	0
Make school's expectations clear about student behavior to adults with deafblindness	Frequency Mean: 3.60 Std. Deviation: .548	0	0	2	3	0
Ensure that a few challenging behaviors are not ruining lessons when teaching an adult with deafblindness	Frequency Mean: 3.80 Std. Deviation: .447	0	0	1	4	0
Support deafblind students enjoy communicating and interacting	Frequency Mean: 4.00 Std. Deviation: .000	0	0	0	5	0
Get through to the most challenging students with deafblindness	Frequency Mean: 3.80 Std. Deviation: .447	0	0	1	4	0
Get students with deafblindness to work collaboratively with other students or peers in their school	Frequency Mean: 3.80 Std. Deviation: .447	0	0	1	4	0
Get students with deafblindness to believe they can do well in my lesson	Frequency Mean: 4.20 Std. Deviation: .447	0	0	0	4	1
Get students with deafblindness to behave safely in school	Frequency Mean: 4.00 Std. Deviation: .000	0	0	0	5	0
Foster independence and self-determination in adults with deafblindness	Frequency Mean: 4.00 Std. Deviation: .000	0	0	0	5	0

Statement		Very Low (1)	Low (2)	Neither low nor high (3)	High (4)	Very high (5)
Establish a trusting relationship with learners with deafblindness	Frequency Mean: 4.00 Std. Deviation: .000	0	0	0	5	0
Encourage deafblind students to expand their communication skills	Frequency Mean: 4.00 Std. Deviation: .000	0	0	0	5	0
Manage any disruption to the coherence of the lesson that may occur	Frequency Mean: 4.00 Std. Deviation: .000	0	0	0	5	0
Support a student with deafblindness to calm down when is upset	Frequency Mean: 4.00 Std. Deviation: .000	0	0	0	5	0
Adapt my teaching, approach and methods to the special needs arising from the health condition of a student with deafblindness	Frequency Mean: 4.00 Std. Deviation: .000	0	0	0	5	0
Communicate effectively with my students with deafblindness	Frequency Mean: 3.40 Std. Deviation: .894	0	1	1	3	0
Use a mutual code of communication with my colleagues for a student with deafblindness according to his/her specificities	Frequency Mean: 3.20 Std. Deviation: 1.095	0	2	0	3	0

The results of the self-efficacy questionnaire show that the five participants had high confidence in supporting deafblind students in enjoying communicating and interacting ( $M = 4$ ,  $SD = .000$ ), getting students with deafblindness to behave safely in school ( $M = 4$ ,  $SD = .000$ ), fostering deafblind students' independence and self-determination ( $M = 4$ ,  $SD = .000$ ), establishing a trusting relationship with their deafblind students ( $M = 4$ ,  $SD = .000$ ),

encouraging them to expand their communication skills ( $M = 4, SD = .000$ ), managing any disruption to the coherence of the lesson ( $M = 4, SD = .000$ ), supporting them to calm down when they are upset ( $M = 4, SD = .000$ ), and in adapting their teaching approach and methods to the deafblind students' unique needs arising from their health conditions ( $M = 4, SD = .000$ ). The five teachers also had generally high confidence in getting students with deafblindness to believe they could do well in their lessons ( $M = 4.20, SD = .447$ ). Specifically, four of the five participants had high confidence and one of the five participants had very high confidence.

Furthermore, the five teachers filled in the questionnaire that they had low confidence in responding effectively to challenging behaviors from students with deafblindness ( $M = 3.00, SD = .707$ ), communicating effectively with their students with deafblindness ( $M = 3.40, SD = .894$ ), and using a mutual mode of communication with their colleagues for a student with deafblindness according to his/her specificities ( $M = 3.20, SD = 1.095$ ).

In addition, the results of their self-assessment in terms of communication skills, knowledge of deafblindness, competence in sign language, and Braille are reported in Figure 1.

**Figure 1.**

*Teachers' Self-Evaluation of their Communication Skills, Knowledge of Deafblindness, Ability in Sign Language, and in Braille*

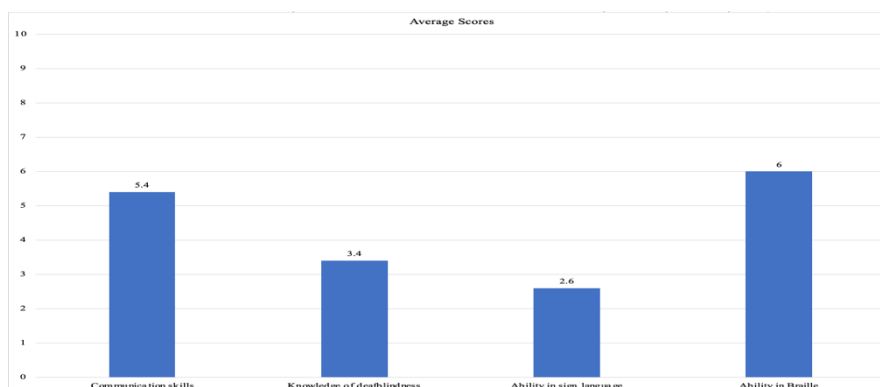


Figure 1 shows the average scores of teachers' self-evaluation in their communication skills, knowledge of deafblindness, ability in sign language, and ability in Braille. The average score of their communication skills is 5.4, their knowledge of deafblindness is 3.4, their ability in sign language is 2.6, and their ability in Braille is 6.

Throughout the focus group session, participants shared the difficulties they face in teaching deafblind adults. The difficulties mentioned by two of the four participants in the focus group were communication difficulties and teaching deafblind students in a large group of other adults with visual impairment or deafblindness. It is worth mentioning that while expressing their difficulties, one of these two participants admitted that the level of knowledge to communicate with his/her deafblind student was basic and that s/he was unable to expand the conversation.

*[P4] It is very, very difficult to have other students especially when the other students are not deafblind (during the lesson). It's...that's where you completely lose it.*

*[P3] In my group that I have people with visual impairment, it's very tiring to have people with blindness and deafblindness together. This year I have Eva, Alice and another one. It's, I mean the productivity, the work we do and what we can offer has gone down 70%. It's impossible for these two people... to work at the same time together. It's practically impossible, practically impossible.*

...

*[P3] Already yesterday she was showing me pictures of her brother, her husband, if I understood correctly, she has many little children... they want to share things with you, they want to communicate, they just start talking and I start getting lost... I learned five things myself, but not fifteen (laughs). So, all right, I'll tell you, is she the bride or is she the maid of honor or is she the sister? I didn't know how to communicate at that moment. Whereas the woman wanted to have a conversation with me. So, she wanted to communicate with me, to make conversation, but my level of knowledge was very basic. I was unable to continue the conversation.*

Regarding teachers' adaptations for their teaching approach for students with deafblindness, three of the four participants in the focus group mentioned that to support their deafblind students, they provide additional time by extending their lessons, the pace of the lesson is slow, the number of students in the group is small, and the teachers mainly observe and guide. It was also stated that when the group of students is mixed, containing not only deafblind students but also blind students, teachers let the blind students work cooperatively,

and they stay next to the deafblind students. They expressed that productivity is reduced when deafblind students work in a group rather than when deafblind students work individually with the teacher.

*[P1] We're giving more time for sure. It's (the lesson) a slower pace of the course. It helps a lot not to work in big groups. I mean, individual helps a lot, ...man to man teaching is very important. I mean, we get lost when we're in a crowd.*

*[P4] I agree let's say yes. It's more important to be alone with the student to be able to work with the student. It's better for the student himself, so that he can work at the pace that he can, because you have to be with him all the time, you have to guide him all the time because he needs that support. And you have to take his hands, to help him with what he's going to do.*

*[P3] And I find that, for example, when I have three people and one of them is deafblind, I put the other two to work who are already more independent and I am always by his side (by the deafblind person) until I see that she now understands what she is going to do so that I can let her go ahead. And furthermore, the teaching is differentiated in that since she can't hear me, I'll tell her louder or softer by taking her hand and putting the pressure on and telling her this way now. By touch, that is, I show more gently, since I can't communicate otherwise, or again I put one piece on and put her hand to touch to see what I've done, and she continues in the same way.*

*[M] Are the other people in the group only visually impaired?*

*[P3] In one group yes so it works well, because I start by giving them work, I move on and then go to the other two (i.e., the deafblind students). In the group I have and visual impairment probably who are congenitally blind with a few other issues it is very tiring to have people with deafblindness together. This year I have Eva and Alice and one more. It's, I mean the productivity, the work we do and what we can offer has gone down 70%. It's impossible for these two people to work at the same time together. It's practically impossible, practically impossible. So, it makes a huge difference who they're with (during the lesson) and how many people I have together and if the other people are more independent.*

Additionally, two of the four participants mentioned developing communication and independence through their lessons. One of these participants talked about collaborative working between deafblind students, but it has not been implemented this year yet. The other participant said that the nature of his/her lesson is to develop the students' social and communication skills.

*[P1] It's the nature of the course that we do with these particular individuals. It's pre-vocational training. So, we go out (of the school) to the outside. They sort of join another social part, other than school because school for me is not the sure thing for them. Out in the world. So that's where they socialize. In that case they try with what they have, the resources that they have anyway to cope with those difficulties in which they will be presented in the unknown. So, you have to bring them into the unknown according to me and you have to be able to leave them a push and freedom in being able to communicate with what they have anyway.*

*[M] So you mean that you purposefully establish this in your course in order to develop their communication skills and their independence.*

*[P1] Exactly*

*[P3] I have Emma and Sophie together (in the same group) ...okay we didn't do it this year, but we have projects that they can both work on as a team.*

Furthermore, one of the participants expressed that she independently developed a means of communication to face the communication obstacles.

*[P3] So I started a process to find on my own communication way during the lesson, because we didn't have an interpreter like this year, who is Amy, but still Amy doesn't come to me (during her lesson), so still I continue with my own efforts. At first, I tried writing with a marker on white paper to see what they see, but it was quite difficult for them. Along the way, my lesson became more practical, and the best solution for me was to do it myself and show them on their hands the movement I did, so they could repeat it. So, it was more of a touch training and slowly some very basic sign language movements that I started to learn by observing them.*

### **Training participants believe they need**

The statements of the four participants in the focus group suggest that they strongly agreed on the training they believe they need to teach students with deafblindness as they completed each other's statements. Participants started mentioning teachers' ideal personalities and then the academic qualifications that could be obtained through training (Table 9).

It was stated that teachers' personality was vital and played a significant role in educating adults with deafblindness. The mentioned personality aspects were patience, contagiousness, perseverance, empathy, compassion, the teacher needs to be communicative, and persistence. They also mentioned a need for training in Sign Language, Braille, psychology knowledge, special needs education in general, and didactic means of helping their students during their lessons.



**Table 9***Teachers' qualifications needed for teaching students with deafblindness*


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Teachers' personality
Patience
Contagiousness
Perseverance
Empathy
Compassion
To be communicative
Persistence
Teachers' academic qualifications
Sign Language
Braille
Art therapy
Knowledge of psychology on how to 'handle deafblind students'
Reading articles to get an idea of deafblind people's problems and the complexity the disability
General knowledge of special needs education
Some knowledge of deafblindness
Training on didactic means that can help people with deafblindness during the lessons

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Furthermore, one of the four participants looked uncertain and disagreed with the three participants, who stated that teachers need specialized training on deafblindness. She explained that teachers need specialized training to teach children with deafblindness, not adults with deafblindness.

*[M] So in conclusion, do you think that teachers who work with people with deafblindness need specialized training?*

*[P1, 4, 5] Yes!*

*[P4] Specialized training definitely!*

*[P3] I'm saying for adults not 100%, teachers can be educated with some seminars they don't have to do postgraduate courses. For younger ages yes, 1000%. But, for adults for 50-year-olds as much as Zoey, to a certain extent. I mean, my answer is not black and white. It's something in between. (laughs)*

### **Discussion**

The aim of the study was to gain into the insight of teachers' perceived knowledge and understanding of deafblindness and their self-efficacy on deafblindness by answering the following questions: 1) What do the teachers report about their knowledge of deafblindness?

2) What do the teachers report about their understanding of deafblindness? 3) How do they evaluate their self-efficacy in deafblindness education? 4) What training do they think they need?

### **Knowledge of deafblindness**

The results above highlight some important findings of teachers' knowledge of deafblindness. Minimal to no training on deafblindness has been received according to the five teachers.

Their lack of training may have affected two of the four teachers when they were asked to teach adults with deafblindness, as they explained to have experienced anxiety about teaching and communicating with them. Perhaps if they had received relevant training on deafblindness, they would not have experienced anxiety at such a level as teaching experience and knowledge are considerably related to anxiety in teaching (Aydin, 2021).

In addition, the four teachers in the focus group seem to recognize the importance of the training they need on deafblindness, as this issue was raised repeatedly during the discussion. Thus, this shows their recognition of their inadequate training in order to teach adults with deafblindness. According to the Broadwell's four stages of CCM, teachers belong to the second stage, conscious incompetence, as they are aware that they lack knowledge of deafblindness (Kongsvik, 2021).

Moreover, one of the four participants during the focus group expressed an individualized and organized training by explaining the strategies he/she used to meet his/her students' needs. This indicates cognitive awareness which is one of the two aspects of metacognition (Hacker et al., 1998). It is defined as the individual's knowledge of his/her cognitive processes and the use of this knowledge to control the cognitive processes (Aksan & Kisac, 2009). The participant identifies his/her inadequate knowledge to teach his/her deafblind students and mentions specific strategies on how to become an adequate teacher.

However, two of the four teachers consider their training adequate because they do not experience difficulties with their two deafblind students, whom the teachers do not consider difficult cases since the individuals with deafblindness communicate verbally and have residual vision and hearing. This indicates that they are not aware of their lack of experience, belonging to the first stage, unconscious incompetence (Kongsvik, 2021), but when the two specific participants were asked during the focus group to assess their knowledge of deafblindness, they were unable to self-assess, saying that they lacked the necessary experience. Therefore, their knowledge is restricted.

### **Understanding of deafblindness**

Based on their responses on questionnaire 1, it can be concluded that the five teachers understand that deafblindness combines vision and hearing problems to varying degrees and that each person with deafblindness is unique. Their statements during the focus group were in line with their answers of the questionnaire, expressing that deafblindness is a dual sensory disability, which needs a different approach from deafness or blindness. This shows that the participants recognize deafblindness as a distinct disability (WFDB, 2018).

However, it seems that participants show a lack of understanding about the causes of deafblindness in relation to the time of onset of deafblindness. Particularly, three of the five teachers neither agree nor disagree that people with Usher Syndrome have congenital deafblindness and one of the five participants agrees. In terms of the differences between congenital and acquired deafblindness, teachers also appear to have misconceptions as they believe that the experiences of people with congenital and acquired blindness is one of the main differences between them. They did not mention the time of onset and the common causes of congenital deafblindness, including Rubella and CHARGE Syndrome and acquired deafblindness, including Usher syndrome as well as aging, early childhood infections, and acquired brain damage (Dalby et al., 2009). They also did not mention that congenital

deafblindness is labelled as “pre-lingual deafblindness” when hearing and vision loss is manifest before language development; acquired deafblindness is labelled as “post-lingual deafblindness” as it describes hearing and vision impairment obtained following the acquisition of spoken or sign language (Larsen, & Damen, 2014).

In addition, it seems that the teachers were influenced during the focus group discussion, as not all the answers they gave in the questionnaire were in line with their answers in the focus group. Three out of five teachers had responded in the questionnaire that they did not know if they were teaching adults with acquired deafblindness, but during the focus group, they all knew whether or not their students had acquired deafblindness. The same applies to whether they teach people with congenital deafblindness. While in the questionnaire, four out of five participants answered that they teach people with congenital blindness and one out of five answered that she does not teach people with congenital blindness; during the discussion, all four teachers answered that they teach people with congenital blindness.

Furthermore, regarding the interventions of children with deafblindness, which was raised during the focus group, the participants did not mention sign language, or tactile sign language, and/or haptics. Thus, they do not indicate knowledge of how children with deafblindness should or could be reared since they do not work with deafblind children.

### **Teachers’ self-efficacy**

The results of teachers’ self-efficacy evaluation indicate that they generally have high confidence in many tasks of teaching students with deafblindness. One of those tasks is encouraging their deafblind students to expand their communications skills. However, their high self-efficacy of the specific statement is not in line with the average score of their self-evaluation in their ability in sign language, which is one of the communication modes used by the adults with deafblindness at the school. Thus, according to Broadwell’s four stages of

conscious competence, the teachers also belong to the first stage, unconscious incompetence. They do not know they cannot expand their deafblind students' communication skills and do not recognize their in-efficacy, particularly not knowing (tactile) sign language (Kongsvik, 2021). The same applies to their high confidence in supporting deafblind students in enjoying communicating and interacting.

They seem to be in the first stage of competency and awareness, unconsciously incompetent, as during the focus group they contradicted the statements of the questionnaire in which they stated that they were highly confident. Specifically, although teachers' self-efficacy was high in terms of promoting independence for their deafblind students, during the focus group they did not mention teaching practices to promote independence. However, their high self-efficacy in adapting their teaching to the needs of their deafblind students, is in line with some didactic practices they mentioned to support their students with deafblindness during the lesson.

Moreover, teachers' high confidence regarding the first mentioned statement contrasts during the focus group with one of the four participants' explanation that his/her level of communication with deafblind students is basic. She/he admitted that he/she was unable to expand a conversation with his/her deafblind student. The particular teacher, according to Broadwell's four stages of conscious competence, belongs to the second stage of competence, conscious incompetence, as he/she recognizes his/her deficit (Kongsvik, 2021).

Their low self-efficacy in making themselves understood and understanding the students seems to be problematic as it pertains to the core of teaching, and everything is built on this.

According to Aydin (2021), self-efficacy levels are directly related to teaching anxiety. Specifically, the teachers with the highest levels of self-efficacy have the lowest degree of anxiety. Thus, the two of the four teachers, who experienced anxiety, appeared to

have low self-efficacy. However, it also contrasts with the data of the questionnaire 2 in which the five teachers reported that they were highly confident in supporting deafblind students in enjoying communicating and interacting.

### **Training participants believe they need**

Teachers during the focus group appear to be partially aware of the training they believe they need. They mentioned knowledge of deafblindness, sign language, Braille, reading literature regarding deafblindness, and didactic practices to support their deafblind students during the lesson. Although psychology knowledge is essential to contribute to the teachers' professional development and interactions with their students (Poulou, 2005), the participants mentioned knowledge of psychology on how to handle their deafblind students. The verb 'handle' that they used seems directive and controlling.

Additionally, they did not mention training in assessing their deafblind students. This is striking as assessments of persons with deafblindness are essential to determine the extent of an individual's disabilities and which functioning capabilities a person has (Damen & Worm, 2013).

Moreover, they did not mention training in concept development, hearing-vision, orientation and mobility, environment and materials, and professional issues (Riggio, 2009). According to Riggio (2009), the knowledge and skills obtained from the abovementioned categories, and the categories of deafblindness and communication, are necessary for teachers of learners with deafblindness to be proficient in providing services and using different teaching strategies that are most beneficial for their students.

Lastly, the participants mentioned teachers' needed personal characteristics to teach an adult with deafblindness. Patience, contagiousness, perseverance, empathy, compassion, and persistence are needed traits for an educator of learners with deafblindness. This set of

teachers' personal traits center around person-centeredness and building warm and caring relationships with their students.

The teachers also place a high priority on feelings in their teaching. Through empathy, teachers can support psychological needs of their students. These needs are a feeling of belonging, autonomy, and competency (Deci & Ryan, 2008).

In conclusion, teachers' academic qualifications mentioned above by the participants indicate the results of lack of knowledge and understanding on deafblindness and the immediate need for specialized training on deafblindness.

### **Recommendations**

Two recommendations for future studies are to utilize the present study as a pilot study for a large sample and use the questionnaires also at the end of the focus group. By sharing their experiences during the focus group, they became more aware of deafblindness than they were at the beginning. Thus, their data on their knowledge and understanding of deafblindness and their self-efficacy in teaching students with deafblindness may differ from their initial data.

Another recommendation for future studies is to include adults with deafblindness. They can express their views on how effective their teachers are in educating them, which can be contrasted with teachers' self-efficacy.

Moreover, the particular school can involve signing deaf individuals to support teachers in teaching deafblind people and thus model tactile sign language for the teachers. An intervention programme for teachers can also be set up, involving the teachers themselves, a deafblind expert, or the researcher. Through this program, they can share best practices and teach each other about teaching practices that work in teaching deafblindness. The last recommendation, which the participants also proposed, is that specialized training on

deafblindness should be implemented, and the school administration is responsible for organizing it.

### **Limitations of the study**

The major limitation of this study is the limited number of participants. The data are not representative for teachers' knowledge and understanding of deafblindness and their self-efficacy. Consequently, the research results cannot be generalized as a representative of the general population of teachers of learners with deafblindness in Cyprus. A small number of samples also do not usually yield reliable or precise estimates (Hackshaw, 2008).

Moreover, due to the study's small sample, it was impossible to conduct a pilot study for the questionnaires and the focus group to obtain feedback about the questionnaire's structure and content and the effectiveness of the moderator (Breen, 2006).

Another limitation is the transcript translation, which the researcher herself did. A researcher could have carried out the inter-rater reliability in order to have accurate and valid codes.

A final limitation of the study was the limited time that was available to have the focus group. Finding mutual spare time for everyone, including the participants, moderator, and external moderator, was difficult. The focus group had to last around sixty to seventy minutes as teachers had other commitments.

### **Conclusion**

This study indicates that the five educators feel that they need training on deafblindness to effectively teach their students with deafblindness. Despite that, during the focus group, they partially mentioned an inefficiency in teaching deafblind students, such as in communicating with their deafblind students, the data on their self-efficacy was relatively high. Thus, it seems that the teachers are unconsciously incompetent and may overestimate



themselves. They seem to be unable to properly judge their competence in teaching deafblind students, and in order to move on to the next stage, conscious incompetence, they would need to recognize their own incompetences, and the value of new skills (Kongsvik, 2021).

Based on this small-scale study, it seems that it would be useful for a program to be established in order to pursue high expectations for deafblind students involving collaborative educational personnel (Mockler, 2014) that should include a professional with specialized knowledge and skills in deafblindness (Riggio & McLetchie, 2008). Ideally the staff would include special needs teachers, orientation and mobility specialists, speech and language therapists, and physical and occupational therapists (Riggio & McLetchie, 2008). A recommendation for the team members is to be educated in the unique needs of the deafblind student, in appropriate assessment and intervention strategies by the team member with a high level of knowledge and skills in deafblindness. Another recommendation is to select team members according to each student's needs, difficulties, and capabilities (Riggio, 2009).

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