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# Multidimensional Networks for Functional Diversity in Higher Education: The Case of Second Language Education

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## Abstract

This chapter provides a theoretical approach to the multidimensional relationship of the student with functional diversity with his/her own educational and socio-cultural context. Inclusion is a key issue in a foreign language classroom where the ability to communicate is of paramount importance. Students with different special needs are bound to find challenges in those language skills that pose problems related to their functional diversity. In order to address these challenges, higher education institutions need to organize multidimensional networks that pay attention to the different stages, events, and situations of the educational process. Furthermore, the ability to communicate that students with functional diversity develop in the foreign language classroom may become an instrumental competence that will become useful for other subjects as well as to respond to daily life challenges. The theoretical model proposed here acknowledges that there are two paradigms that coalesce into a defined educational model. On the one hand, the syntagmatic paradigm ensures that subjects offered in the educational programs are designed bearing in mind the needs of students with functional diversity and are flexible enough to accommodate those needs. On the other hand, the organizational paradigm relates the needs of the students and their teachers to institutional services and protocols.

**Keywords:** functional diversity (FD), higher education (HE), English language teaching (ELT), foreign language learning (FLL), knowledge, skills and abilities (KSAs), curriculum adaptations, technology-enabled assessment (TEA)

## 1. Introduction

In their seminal paper, Romañach and Lobato [1] clearly state the reasons behind using and advocating for the term "functional diversity" (FD) in their study:

> It is known that words or terms are associated with ideas and concepts and that these connotations are not something random, but represent culturally accepted values of the object or organism named. These values are conveyed over time using words as a vehicle. In time, if we wish to change ideas or values, we will have no alternative other than changing the words that support and give life to them.

These authors thus defend the use of the term "functional diversity" instead of pejorative terms such as "disability" or "handicap." In the educational arena, we should be especially sensitive not only with the way we employ terms but also with how our idea of what they represent is implemented in the educational environment. Terms like "disability," meaning "less able," point to the lack of ability of a person and the lack of ability of a student in our class. "Functional diversity," on the other hand, indicates "diverse ways of doing things."

Throughout this chapter, I understand diversity and its implementation in education as the fact of acknowledging and including many possible ways of being and doing things. This understanding includes both people and institutions. In higher education (HE), there are two basic levels of implementation: one is between the students and their teachers and the different institutional units that influence the quality of his/her education (such as diversity support units), and the other is within the closest circle of friends/classmates and teachers with whom the student relates during a course of study and along the years in a higher education institution on a daily basis. I call the first level the organizational paradigm and the second level the syntagmatic paradigm. The main aim of this chapter is to analyze how the relationship between both paradigms is necessary to develop a functional diversity model that is able to recognize that students with diversity also have different needs depending on the courses and degrees they take.

Teachers involved in teaching students with functional diversity often feel alone in the process; sometimes one of the paradigms works, while the other does not provide sufficient support. This is the reason why multidimensional networks for functional diversity have to be organized in a way that both paradigms are integrated into one another and respond to each other.

## 1.1 Multidimensional networks in second language education

In the field of foreign language teaching, working with functional diversity tends to be more complicated than it is in other fields because we deal with all the aspects of communication by simply dealing, for instance, with the four main language skills (reading, writing, listening, speaking), and this is done in a language different to the mother tongue. Language teaching implies awareness of different communicative contexts, the appropriateness of a message in such contexts, and evaluating (nonverbal and verbal) reactions, to name some examples of issues considered in a communicative approach to language learning. Moreover, the language class is no longer a one-way class but rather a participative event where communication among participants is essential.

How does this affect students with functional diversity? Let us consider a few examples. Students with sensory FD (auditory, visual) will need adaptations in those parts of language learning related to listening (clarity, volume, etc.) and seeing (reading, situation awareness, etc.). Students with physical FD affecting speech production will need adaptations in the speaking components of the language class, while FD affecting, for instance, the loss or limitation of movement in hands/arms may affect writing. Students with FD affecting social interaction (such as Asperger syndrome) will need adaptations for group work, among others.

Given the peculiarities and complexities of the language teaching context, it is easy to realize that students with functional diversity of any type will always need some adaptation in the foreign and second language learning class. For the foreign language teacher in higher education institutions, trying to implement adaptations is a very demanding mission. A lot of support is needed to develop effective proposals that can be transferred to similar language teaching situations. For this reason, if we want to make the educational system work regarding functional diversity

for language learning and teaching, we need to oil the wheels of a dynamic model, and we should have a clear picture of what has been done and what remains to be done if the system is to operate effectively. The theoretical approach presented here contributes to the development of an organized multidimensional framework that may aid teachers to identify how to tackle FD issues in the classroom and outside the classroom. This framework should be part of the teacher training curriculum, and in fact teachers of English as a foreign language already identified the lack of this type of training as a gap in their continuing professional development [2, 3].

The TALE project in their needs analysis report ([2], p. 38), informs readers that assessing learners with special needs is reported as the area where teachers feel less confident among all the reported areas where teachers indicate their confidence regarding assessment and is later identified ([2], p. 39) as the area where training needs are higher. In [3], pp. 12–13, a similar statement is made regarding training in dyslexia for teachers. Most teachers (94.4%) felt they needed more information on the language teaching methods and inclusive practices that may be effective for dyslexic learners, thus evidencing an important demand for professional development opportunities in dyslexia.

The theoretical proposal developed in this chapter is thus meant to make a contribution in the organization of second language teacher education and how it should be planned and systematized in educational institutions, specifically at a university level.

In this chapter, I will focus on the needs of students who enroll for degrees in foreign languages. The chapter includes an interview to a teacher of English with visual diversity. The interest of this interview is twofold: this is a teacher who is at the same time also a student since she is preparing for her competitive national exam to become a state employee. Thus, her dual perspective will give us insights in both directions, teaching and learning.

## 2. Methodology

This chapter combines a theoretical proposal with an interview to a person with visual diversity. The theoretical proposal deals with the organization of educational agents to provide students with functional diversity with adequate and accessible educational models and tools. The interview is used to exemplify a case of a student with functional diversity in a foreign language context and at the same time serve as a way to ascertain how each stage in the theoretical proposal is related to the real situation of our interview subject. Our subject is a female teacher with visual diversity who is also a student for the competitive exams to become a state teacher.

The subject was contacted and in an informal meeting was asked to participate in an interview to talk about her experience as a person with visual diversity in the field of foreign language teaching. In the meeting it was suggested that her view in both sides of the learning/teaching spectrum was of special interest for the interview, but no further information was given regarding the content of her answers. A semi-structured interview (see Appendix) was carried out through WhatsApp, in which the interviewer set up a general structure of the main questions to be asked and the areas covered in the questions. A WhatsApp format was deemed as adequate since it would allow the interviewee to take her time for the answer and respond the questions in a safe, non-threatening atmosphere. The participant was at home, and the interviewer was not physically present so the anxiety that may be present in a face-to-face interview was eliminated. She could freely decide on what to talk about in each question, how much to say, and how to say it.

Throughout the interview, the interviewer elicited information in the form of open questions in a conversational tone and ensured flexibility in the way the subject addressed the different questions. Both questions and answers were submitted using the audio option in WhatsApp messages. The interview was then transcribed and analyzed to determine how the answers related to the theoretical proposal.

## 3. The organizational paradigm of functional diversity in higher education

The organizational paradigm analyzes the institutional services and protocols developed in higher education institutions. In order to be effective, such services and protocols need to be interconnected and should reach the students and their teachers. There are three dimensions in the organizational paradigm: *discursive*, *performative*, and *material*. The discursive dimension designs and pays attention to the way in which language is used throughout the institution to foster respect toward all types of diversity. This discursive dimension should be reflected in policies [4], statutory documents, institutional forms and documents, internal and external communication strategies, exam calls, grant calls, and online/classroom material. The performative dimension is concerned with the actions that institutions take to react to situations, events, or contingencies related with functional diversity. The material dimension includes staff, financial support for architectural and space adaptations, and financial support for accessible and adapted materials that are used to ensure quality education for all.

I will exemplify the discursive dimension with a real situation. Two of my best qualified students did not know anything about their rights as students with functional diversity because they did not associate themselves with the term "disabled" which is used by the university. Both students have different rare illnesses and have never identified themselves as "disabled" because, they told me, "there is nothing wrong with us, we are smart, we just have this illness and we sometimes miss a class or an exam." Again, term connotations are important, and the students missed grant opportunities because of this. They were not even aware of the fact that they could ask for adaptations. The other problem in this case is that if the student does not find out about university policies or the institution is not able to inform in a way that reaches all individuals, the services are lost for some students. For this reason, the discursive dimension is important and needs constant revising.

Questions 1 and 4 in the interview (see Appendix for full answers to the questions) are good examples for the performative (and discursive) dimension. The interviewee reflects on work environment situations she went through:

> Q1. (…) I had a good curriculum and was not questioned about my visual diversity, but there were many untold prejudices, unfinished sentences...like "if something happened to you…"

> Q4. (…) when I talked to the head of the school and administration departments, and they really did not understand my situation very well, did not have much information about how to proceed.

> (…) I was sent to a school with no lift and many stairs. But the headmaster made me go up the stairs, he gave me no other choice (…) I was new there, and I did not want to make any trouble...even if I could have placed a denounce I did not. And in those times, I could have been placing a denounce on a daily basis. (…) this person, he even

> *recommended that I checked that the school I would chose in the future was ready for*
> *me. He told me: "You need to understand we are not used to people like you."*

As we can see in the response to the questions, the full picture of functional diversity has not yet been elucidated. Administration and other teaching staff know what functional diversity is but do not always know how to react to situations that call for action. This is because, in this case, the job interviewers and staff have not been trained to understand and deal with the needs of people with visual diversity. In the first place, phrases like "if something happened to you…" or "people like you" show that there is a lack of information regarding the rights of people with functional diversity. They also denote lack of tact and prejudices; it is assumed that people with functional diversity will cause problems. Secondly, in the case of the second school, a natural solution would have been to find a classroom or space in the ground floor that was more accessible or at least discuss the options with the teacher. Inaction is not a good performative behavior example.

The material dimension belongs both to the organizational and the syntagmatic paradigm. At an organizational level, it implies financing an organization of support units, new technology units, and their staff, which we discuss in the paragraphs below. It also means financing architectural adaptations when new spaces are created. And finally, it entails to monitor the design of accessible information and provide the tools and training necessary to create and update accessible information.

Universities may have different services and departments that orchestrate the needs and demands of students with functional diversity. The organizational paradigm will analyze the institutional resources and support systems. At a macro-structural level, higher education institutions will have to consider specific types of diversity and their implications in the educational system. This entails establishing policies and guidelines, among which we may have:

- Functional diversity awareness

- University guidelines for functional diversity

- General curricular adaptations

- Accessibility guidelines and technological support

- Diversity support units

Functional diversity awareness relates to the idea that both the institution needs to be aware of the needs of students with functional diversity and the students need to be informed and aware of institutional services and their implications. For both sides, this implies knowing which are the degrees' basic requirements, teaching methods, and expected outcomes and whether these are accessible or not for a particular group of students. This is important because many times students miss opportunities due to lack of information when informative channels are not working or not considering their needs. A student with dyslexia, for instance, may find it hard to read a grant call if the text is written in a color combination or letter font that is illegible for them.

Diversity support units are an essential point of convergence in dealing with functional diversity in higher education. These units are the starting point for students, who need to access the unit and be interviewed so that they are informed

about university support options and so that an overall strategy in their educational development may be outlined. Diversity support units can have diversity advisors. These advisors act as links between the student and other university departments, funding application services, or housing services. They will support the students when asking for adjustments in learning, tutorials, exams, and other assessment methods. These advisors may help teachers by providing further information on possible adjustments in their subjects. For example, the foreign language teacher may be advised to provide the student with dyslexia with class notes that use an adequate letter font (such as Arial, Verdana or Dyslexie) or may recommend the teacher to give permission to record lectures in order to make it easier for the students to take their notes.

Another common feature that most higher education institutions have is the provision of university/institutional (online) guidelines [5, 6] for functional diversity. Support units and sometimes other university teams of experts are in charge of creating and distributing these guides to the community. In this sense, the organizational paradigm should generate specific guidelines for the most frequent functional diversity types or each type of functional diversity that are addressed to all academic agencies in the institution. These guidelines can also be field-specific and be addressed, for example, to work placements or science labs (see, for instance, [7, 8]). In the case of institutional guidelines, we are still at the organizational level where information is provided regarding a group of individuals with a specific functional diversity which may be related to a particular university practice. The guidelines are the first level of information and may contain recommendations for general curricular adaptations.

Curricular adaptations are the different types of modifications and accommodations which allow students equal opportunity to obtain access to education, results, benefits, and different levels of achievement based on diversity requirements. At an institutional level, there needs to be general adaptation criteria that all departments can agree on and follow. General adaptations that are provided by most institutions regardless of the degree are, for example, extensions of time, letter size adaptations, or (class)rooms with special characteristics.

Among curricular adaptations, exam adaptations (or adaptations of any assessment method) are a main concern among students with functional diversity because this is the phase in which they are evaluated and may demonstrate achievement. It is also a time of concern because it is in exam situations where anxiety may result in lower achievement or where inadequate adaptations may lead to unfair assessment. García-Pastor and Miller [9] show the experiences of learners who stutter (LWS) in their process of learning a foreign language. Their study reveals that these learners scored significantly higher in foreign language anxiety than the control group and that the contrast was even higher in speaking situations. Thus, speaking anxiety needs to be considered for this particular group of students, even more so in evaluative situations ([9], p. 174). Evaluative situations are those where students need to show what they know in front of their peers and/or teacher. An oral foreign language exam would thus be a situation that may require adaptations for LWS.

Diversity support units are those units or departments that provide academic support to members of the peacademic community with special educational needs. In order to be assisted by these units, usually students need to register in a program. This will entitle him/her to have individual meetings with the support unit where his/her needs are listened to and analyzed in order to design a specific plan of action. For example, a student with dyslexia (a condition that makes it difficult to read and spell) attends the support unit interviews, and a plan of action is taken.

Students' teachers are contacted and informed about the students' needs, and they will be given general recommendations. In the case of dyslexia, it can be something like: "Work Guidelines: Expansion of exam response time. We recommend to focus the correction of the tests on the response content, since there may be misspellings." This is a general recommendation for any student with dyslexia in any degree of study. It should be born in mind that each case of student with diversity is unique; even in cases with the same condition, students may be influenced by other environmental factors that may influence their learning rhythms and paths.

Diversity units evaluate each individual case before giving their recommendations. The recommendation would reach the teacher, and it is the teacher's responsibility to take the recommendation into consideration. The support unit will assist both the learner and the teacher with any requests they may have. The above recommendation regarding dyslexia can be enough for students taking, for instance, an engineering degree. But it can be very limited for foreign language subjects. The students with dyslexia have to deal not only with reading and writing problems in their own language but also when they need to read and write in the foreign language, thus causing more added difficulties. Those teachers who have spelling as an assessment criterion will have to consider specific adaptations.

Another relevant institutional asset is to have an effective technological support unit. This unit may be decisive to help with assistive technology in order to make not only institutional but also learning and teaching materials accessible. Assistive technology officers may guide students with diversity when they have specific technological requirements or could provide technological resources and tools that are helpful for them. They may help students activate the voice-over option in documents, for instance. Technological support officers will also assist teachers in their creation of accessible materials. A key term in this area is technology-enabled assessment (TEA) or the use of technology to design assessment conditions and tools that are adequate and accessible for all students [10].

As can be inferred from the above discussion, the organizational paradigm of functional diversity in HE has a complex articulation. It is for this reason that evaluating and assessing this paradigm should be common practice to ensure that the paradigm is effective and that new requirements will be met in the future. The model followed by [11] illustrates the use of a template for assessing diversity practices in HE where each practice and its aims are evaluated considering the target group, stakeholders involved, and the organizational process of each practice. They also value the accessibility of information regarding this practice, the timeframe during which it develops, whether it is possible to transfer this practice, and its potential to be applied and transferred to other target groups and institutions. An organizational paradigm of functional diversity in HE needs to be assessed, but it also needs to reach the syntagmatic paradigm, and it needs to feed from syntagmatic feedback. Not only that, it would be advisable that HE gets some feedback regarding the performance of students with diversity in the previous educational level (secondary school and others), and also to find a way to support these students in their transition to university (see the TIDE Project as an example for this transition monitoring: https://project-tide.eu/). **Figure 1** below summarizes the key ideas in the organizational paradigm.

The organizational paradigm shows the hierarchical relationship between different institutional levels. It has two main foci of sustenance: functional diversity support and technological support. From the institutional policies to the specific recommendations, adaptations, and technology-enabled accessibility, there must be a constant awareness of the principles behind the HE institution directions on diversity.
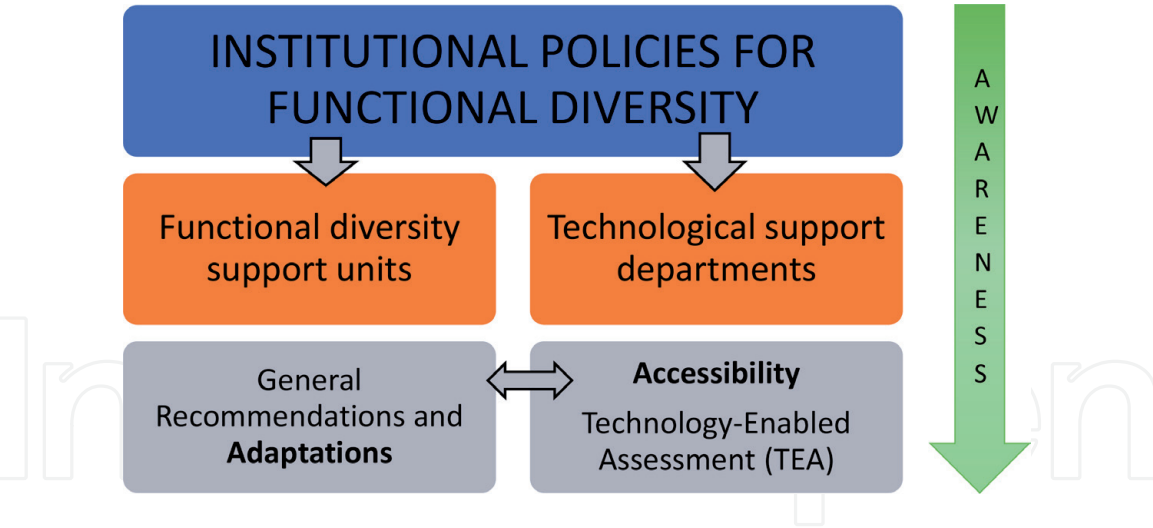
**Figure 1.**
*The organizational paradigm of functional diversity.*

## 4. The syntagmatic paradigm of functional diversity in higher education

The syntagmatic paradigm pays attention to the relationship between students with functional diversity, their peers, and their teachers. It also pays attention to research and research-derived tools that analyze how to deal with specific diversity types in a particular field of study or in certain subjects that require in-depth analysis for the provision of effective education regarding functional diversity types. For the syntagmatic paradigm, I will focus solely on issues related to foreign language learning. Within the syntagmatic paradigm, I will distinguish two main areas of work:

a. The study of one or several types of functional diversity in relation to language learning.

b. The other is the study of *one foreign language learning skill* and how to adapt that skill to the different possible functional diversity types or to an individual FD.

The first area is necessary to understand how a student with functional diversity will develop his or her knowledge, skills, and abilities (KSAs) in the language learning classroom. This understanding is of paramount importance for teachers to be able to choose a particular teaching method and to be able to adapt their subject and materials when necessary. The research and resources we will include in this section regarding KSAs are particularly relevant in relation to continuing professional development of the language teacher working with FD. An example of the first area (A) is Kormos [12], who studies the second language learning processes of students with specific learning difficulties (SpLDs). The book investigates relevant aspects within SLA including the effect of affective factors on learners' KSAs and how to identify SpLDs in another language. Teachers who are unaware of how SpLDs are reflected in the students' KSAs will undoubtedly benefit from reading this book, since unawareness on SpLDs may easily lead to misunderstandings and unfair assessment on the part of the teacher. Two full chapters are devoted to the teaching and assessment of second language skills for students with specific learning difficulties.

The work of Nijakowska [13] clearly belongs to this category and focuses on one type of functional diversity. Hers is a book devoted to the study of dyslexia and language teaching. Specifically, Chapters 3 and 5 deal with dyslexia and foreign

language learning and teaching, while Chapter 6 provides samples of activities to exemplify theory in action.

European projects on dyslexia, like CalDys2 (http://www.caldys2.eu/node/104), DysTEFL, DysTEFL2 (http://dystefl2.uni.lodz.pl/), TIDE (https://project-tide.eu/), and Dyslang (https://www.bdadyslexia.org.uk/about/projects/dyslang), are educational initiatives that yield practical proposals for the classroom based on years of team research and practice. These projects and related research also provide teacher guidance and sometimes training programs for teachers [14].

The second area focuses on one particular language skill and how this skill is understood and practiced by one functional diversity type. Analyzing the needs of SWFD in relation to language skills is useful to envisage in which skill the students with functional diversity (SWFD) will function in a different way. Broadly speaking, foreign language courses usually include practice in the four main language skills: reading, speaking, writing, and listening. In this sense, Kormos [12] also falls into the second area, since it focuses on reading skills. Kosak-Babuder et al. [15] also deal with reading skills and dyslexia. They base their study on the assumption that one of the special arrangements in testing contexts is to allow dyslexic students to listen to the text while they read, a hypothesis that the results of their study supports. These authors examined the effect of read-aloud and its impact on comprehension on the part of students with dyslexia and compared results with a control group with no reported dyslexia. They contrasted the results for different modes of test administration for reading comprehension tasks (read only, read-aloud, listen only). Administration modes did not seem to influence students with no reported dyslexia, while the results for students with dyslexia were significantly better when following the read-aloud protocol. The study hence demonstrates that this adaptation should be recommended for type of task and students with functional diversity (SWFD).

Mortimore and Crozier [16] report that note-taking skills are more demanding for students with dyslexia than the skill of reading, since these skills imply both listening and writing. The higher the educational level, the more demanding these skills are, since the input becomes more complex. As explained in Nijakowska [14], note-taking skills also require a lot of concentration on the part of the student for a long period of time and demand being able to remember details. Other SWFD find listening and related skills particularly challenging. Such is the case of the student in our appendix. Listening skills for a student with visual diversity have a great level of difficulty. As the student in our interview points out (question 8), it is impossible for them to read and write at the same time:

> Q8. (...) *About the listening part of the exam. You know that when you complete a listening test, you have to answer a number of questions that you can read while you listen. I cannot do that, I have to either listen or get the voice over read for me, but not both things at a time. Therefore, I cannot visualize the questions in the listening as other people do (...)*

Ideally, students may read the listening questions while listening and decide to take notes for one question or another at the same time. However, a student who is blind requires the computer to read the questions for her/him and will not be able to use this strategy. Not being able to read while listening will also demand a higher level of concentration to remember the questions while the audio is played, since they will not have the opportunity to listen to the questions again until the audio text for the listening is over.

As suggested elsewhere [17, 18], listening test administration procedures may determine the adequacy of a listening practice, and this is even more important for

SWFD. Foreign language test administration procedures as well as task administration procedures need to include SWFD in their design phase. In practicing listening, administration includes not only checking that the audio has a good quality and adequate speed as well as clear diction but also designing the way in which students have to answer the listening task, that is, question type and sequencing and pauses and amounts of audio text to be listened before answering each or all the questions. It also includes the number of times that an audio will be listened in order to perform the task.

Thus, in a listening task the sequencing and timing of questions need to be aligned with a specific type of FD. One possible course of action is to fragment the listening task into a number of recognizable sequences (episodes distinguished in the listening event as a whole). Instead of listening to the full text and then answer the questions, the SWFD may listen to each sequence and answer the questions for that sequence. This would also apply for the test question mentioned in the interview where the student is asked to summarize the whole listening. The audio text may be divided into smaller units to facilitate note-taking for the SWFD. In this regard, a relevant issue in foreign language test or task administration is the means of administration: paper or digital formats. Generally speaking, digital testing or TEA offers possible task and test administration procedures that may include adaptations for different SWFD by providing different access means. One of the advantages of digital educational contexts is that they facilitate multimodal environments in which different communicative modes—visual, audio, written, video, etc.—may be used as the means of access in a given task, and tasks can be accommodated to specific needs [19–21].

So far, we have seen FD examples related to the skills of writing, reading, and listening. For other SWFD, social skills, which are more directly related to speaking skills, may pose certain problems. This is the case of students with Asperger [22] because they have problems with social interactions. Situations where students face stress or anxiety, such as cases of dysarthria [23], stuttering [9], or students with depression, are instances where the practice of oral skills need to be revised. In some cases, like dysarthria or stuttering, analyzing the specific condition of the student may lead to contemplate different options of task or test administration, design specific tutorial sessions, or use digital environments to facilitate the practice of spoken skills. In the case of students with Asperger, teachers will have to bear in mind how these students interact. For example, they usually start interaction in ways that are awkward for other students and in a not very effective way [24, 25], and they also want others to follow their rules and share their preferences, interests, or achievements. This knowledge should be used by the teachers, and it will help them with classroom management and the way tasks are organized so that students with Asperger may participate in classroom activities as any other student in the group.

Other considerations for students with Asperger are that these students should not be grouped with peers that may cause them distress, fear, agitation, or anxiety. As an example, a recommendation [22] is that they should not be paired with those classmates that are usually perceived as the leaders or those that are strongly interested in sports due to a lack of similar interests.

A different case is that of SWFD for whom the foreign language is a third language and for whom the visual input and written input may be more relevant than audio-based information. Such is the case of students deaf and hard-of-hearing persons [26, 27]. Innovative research in this field is, for example, the work of Ewa Domagala-Zysk and her development of surdoglottodidactics—a science of teaching and learning a foreign language by DHH (deaf and hard-of-hearing persons) individuals—which has shaped the nature of learning and teaching strategies

implemented in English as foreign language classes for deaf and hard-of-hearing students in Poland. Other researchers [27] pay attention to the deaf professional and develop teaching proposals for students with auditive FD that are an aid to integrate them in their future professional activities. This proposal works with English for special purpose students who are deaf and develops materials in the area of film production with the idea of preparing them to communicate with foreign peers in their future work environments and to promote their future professional advancement.

Working with students with FD in the language classroom fosters the development of instrumental competences [28]. These are the competences that have an instrumental or enabling function, that is, they make something possible by developing the cognitive, methodological, technological, and linguistic skills to do it. While linguistic skills are instrumental by definition, in the case of functional diversity, they have a second instrumental level that has an inclusive value. The foreign language class is a scenario where students with FD can develop important instrumental skills that they can apply in other situations outside the classroom. This is why the combination of language learning and FD is so important. In addition, the importance given to instrumental competences by employers has a direct impact on the labor insertion of people with FD.

For example, for students with Asperger, work in group in the foreign language classroom may include guidelines on how to behave in a particular situation. This will develop the student's social skills and give them tools and strategies to manage specific situations in the real world. Another example can be the use of new technologies by students with visual diversity in the language classroom. Since they will need to make use of adequate technological tools and skills to respond to classroom tasks, the instrumental technological competence will be developed. In addition, the teachers and institutions need to consider which are the essential technological tools students with visual diversity may need and how these tools may assist them in their future working environment. An institution may have specific budget to cater for technological tools aimed at students with FD, while an academic department may decide to foster the use of specific technology that may be useful to the student with visual diversity, for instance, in the foreign language class. The department may evaluate and consider how the technological competences developed in the use of a specific tool may be useful to the class as a whole and/or to the student with FD in particular.

We have seen how different approaches to teaching FL to SWFD in the syntagmatic paradigm include paying attention to FD types, to how SWFD function in the process of learning specific skills, and on how these considerations may help teachers design more effective teaching and testing strategies for their students.

In the syntagmatic paradigm, the role of other agents in implementing adaptations is important. One is the figure of area/department coordinator for FD, who will need to design specific plans of action for teaching SWFD that all the members of the department should agree to follow. SWFD may also be assigned FD tutors who may assist them in the whole educational process in the HE institution. A teacher coordinator for each course should also supervise that methods used by teachers in the same course follow similar or the same principles so that no contradictory ideas will cause any problem. Finally, the role of student peers as task facilitators may prove to be an essential aid in the integration of SWFD. These students may act as tutors, or they may help, for instance, as scribes in helping note-taking processes or in cases where having another student write for you is easier for the SWFD (e.g., cases of students with physical functional diversity who cannot easily write). They may also act as readers to facilitate a specific reading purpose. In **Figure 2** below, I summarize the key issues in the syntagmatic paradigm.
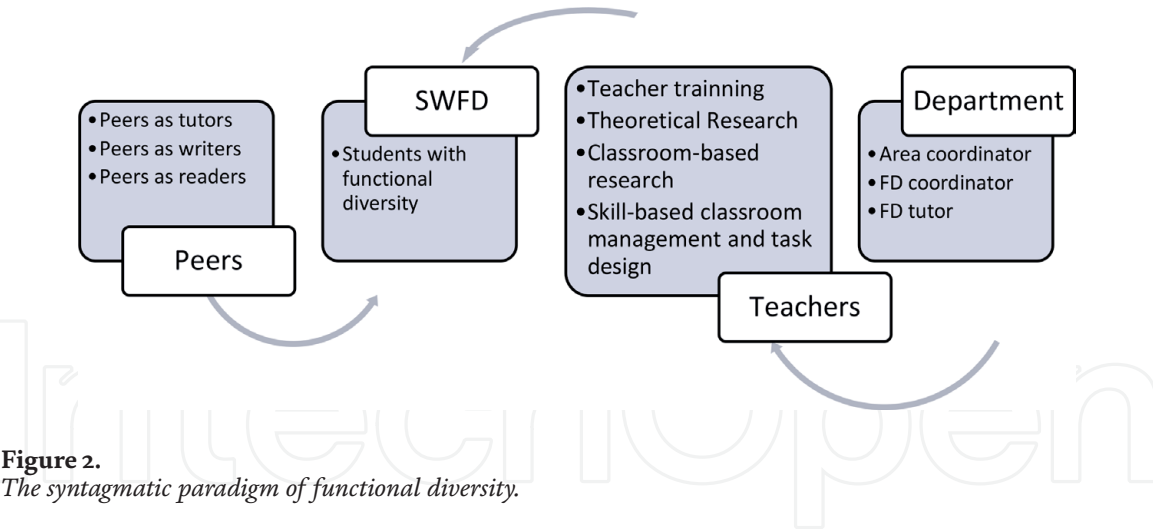
**Figure 2.**
*The syntagmatic paradigm of functional diversity.*

As illustrated in the figure, in the syntagmatic paradigm for a SWFD to develop his/her foreign language skills, peers, tutors, teachers, and coordinators need to interact and share their practices. Lack of coordination would entail problems and misunderstandings in the SWFD daily experience. Lack of teacher training in FD is perhaps the most urgent need in HE. Even though many professionals may be interested in FD and devote time to read informed materials, there is a general lack of coordination in a departmental organization and procedures toward integration of SWFD, and the teacher is usually left to make their own decisions in their classrooms.

## 5. Multidimensional networks for functional diversity in higher education

While the organizational and the syntagmatic paradigms are sometimes self-sufficient, a connection between both paradigms in what I will call multidimensional networks for functional diversity should be a requisite in FD. The different agents involved in the process should communicate and evaluate each other's progress and proposals. In the previous section, I mentioned how the teacher may be left to take their own decisions as to how they manage SWFD or which adaptations they finally implement in their subjects. Communication procedures at a multidimensional level would mean that the institution should foster those actions oriented toward teacher training not only on a general level (which is important) but also on a specific field of study level where adaptations can be more detailed and can be specified more clearly in relation to specific subjects. In order to do so, it is essential to support research in FD and HE. It is also necessary to facilitate research results and to promote the transferability of good practices. Tutors and teachers should also be informed about the institutional policies on FD so they can provide their students with the information they need in a timely manner. When institutional proposals are not working or are seen as not useful, it is those tutors and teachers who should report specific problems to higher institutional levels for revision.

The problems that SWFD may face in a HE context may be very similar to those found later on in their working practice. Some questions in the interview shown in the appendix reflect miscommunication problems between the syntagmatic and organizational paradigms. I will now comment on the interview questions.

Question 2 relates to how the majority of teachers both in private and public institutions are not prepared to consider the needs of SWFD. In preparing for her competitive exam, the student in the interview could not find any preparation school or academy able to provide her, for example, with technology-enabled materials and training that could have facilitated and improved her preparation for the

exam. The student also reports that she is unaware of any state exam preparation resources. These resources, whenever they exist, must be publicized, and SWFD should be informed of their existence on registering for the exam.

Question 3 poses an interesting challenge: the student is eager to learn and get a good training and registers for courses, but then what is supposed to be an innovative, ITC-based instruction ends up being a problem for her due to the lack of adaptation of the most frequently used tools used in FL environments, such as Moodle. Again, it seems to be the case that adaptations are only considered in exam situations, and even in those situations, they tend to be general. The challenge that is now starting to be taken on by some researchers is to study FD and analyze specific needs to adapt ITC tools.

Question 4 has been commented on in the body of this chapter. It shows examples of professional experiences that a teacher with FD may have to overcome. As explained before, there is a lack of staff training for adapting professional environments that are friendlier and more aware of the needs of people with FD.

Question 5 points in the direction of a lack of knowledge on research related to test adaptations. This is particularly significative on the part of the student. She is asking for general adaptations, but she is also trying to explain her needs, her specific needs. One important aspect of adaptations is to inform the student with time enough before the test. A SWFD cannot be left to imagine how the test will be. They should be informed about test format and about the accepted adaptations well ahead of the exam time. This is particularly important because when one prepares for a test, one prepares for a specific format and means of administration. Not having this information in advance may lead to a less effective student performance. In question 6, the student indicates that she had an interview with the examiners a few days before, but this is clearly a very short span of time to manage the information they may give her in preparation for the exam. It is obviously also a short time for the examiners to decide on how to design specific adaptations based on the report of the student.

Question 7 addresses the issue of social integration. The student expresses her concern with the examiners' full appreciation of her abilities and fears that a marginalized vision of her FD may affect the evaluation of her performance in the oral part of the exam. This is an issue that is affecting the student's preparation for the exam, though assessment criteria are probably neutral enough to impede personal evaluation from permeating into the final grade. Perhaps publication of detailed assessment criteria would avoid this situation. At present, the mark percentage for each part of the exam is publicized.

Questions 7 and 8 talk about the listening part of the exam the interviewee is about to take and the worries the student has regarding its administration. The official call for the examination explains that the listening is based on a C2 level audio document and states that the following tasks will be carried out:

a. Response to general and/or detailed questions that the selection committee raises

b. Summary of the information contained in the audio (approximately 200 words), as determined by the selection committee

The call states that the audio document will be between 5 and 6 min long and will be played twice. The duration of this part will have a maximum time of 50 min. The value of this part of the exam is 40% of the total percentage.

The length of the audio (5–6 min) seems to be too long for a student with visual diversity, and the student will not know whether the audio will be stopped in the

middle to allow her to take notes as needed, or whether it will be simply played more times as she requests.

> *Q8. About the listening part of the exam. You know that when you complete a listening test, you have to answer a number of questions that you can read while you listen. I cannot do that, I have to either listen or get the voice over read for me, but not both things at a time. Therefore, I cannot visualize the questions in the listening as other people do, so I have asked to have the audio played more times to compensate for this...I hope to meet the board of examiners before the day of the exam so that I can explain myself better or answer their questions regarding this matter.*

It seems to me that these decisions should not be left so much to what the student imagines that could be made, though her opinion is of course very important. What matters, though, is that examiners and the administration should already possess enough information on FD to provide the student with adequate options, instead of leaving that burden on the student alone. The issue of pausing or not for the summary of the audio information is also a problematic question for the student, who cannot prepare for a specific option in advance.

Finally, question 9 is a good reflection on how the focus on the abilities of SWFD and professionals with FD may contribute to the development of good practices based on their experience:

> *Q9. I tell them that if I make a mistake while I write, they can tell me. We learn from mistakes. So, I take advantage of this to teach them that if one makes a mistake, you just rectify and that's it, there is nothing wrong about that.*

In the case of this teacher, she takes advantage of her FD to teach students about attitudes in relation to making mistakes and about behaving properly and acting in an ethical way.

## 6. Concluding remarks

A multidimensional network for functional diversity in HE is based on the principle of cooperation and evaluation among the different agents of the process, both at the organizational and the syntagmatic paradigm levels. In this sense, we should remember that important actions and beliefs for implementing good practices in FD include:

- Support units have a role in organizing and informing FD tutors and coordinators on a general level.

- Departments and academic coordinators need to design protocols to support good practices in their field of study.

- Syntagmatic support from peers and teachers, where teacher training needs to be supported and fostered by the institution.

- Teacher training needs to be based on theoretical research, classroom research, and classroom management experiences. The three of them are a cycle of constant feedback for good practices.

- Focusing on language skills and their constructs is a good organizational principle for FL teaching in a diversity context.

Research calls for action [2, 3] in the training of language teachers for FD teaching and assessment. Considering the difficulties discussed throughout this chapter regarding good FD practices, designing multidimensional networks is vital. The benefits are twofold in working with students with FD in the language class. While developing a first level of instrumentality in linguistic competences, students are also dealing with a second level of instrumentality whenever the foreign language class gives them clues, tools, and strategies that deal with other instrumental general competences, which are highly valued by employers.

As stated in the introduction, the language learning context is an ideal arena where FD may find its own expression; it is a place for innovation where we can develop new ideas on how to communicate and how to foster new ways of understanding communication from a FD perspective.

## Acknowledgements

## Appendix: interview to a teacher/student of English with visual diversity

### Question 1: Why did you decide to take the national competitive exam to become a language teacher?

I come from a family of teachers, and that was something I always felt curious about. First, I started looking for other types of job as a translator. I started job interviews around the country, and I had a good curriculum and was not questioned about my visual diversity, but there were many untold prejudices, unfinished sentences...like "if something happened to you...." But since I always liked teaching languages, I made the decision to get a job as a teacher, and here I am.

Before that, even before the first job interviews, I considered working for the Spanish Association for Blind People (ONCE) selling coupons, which would give me a job quite easily, and that would allow me to be independent. However, at that moment, from a psychological point of view, I wanted to do something else in my life, invest time in the things that I like, and I decided to take the hard path, get trained as a teacher, study more, even though I knew it would take me many more years to get a good job. But I did not want to have an easy money kind of job, I wanted to feel proud of what I did, do something that I like better, even if it meant working harder and longer to get that job.

### Question 2: What kind of institutional help did you get from the state administration?

Well, I have not received any help to prepare for my exam. When I took the first exam chance, I was still able to see using Telelupa (a kind of TV that augments images in a screen, even if the reading is slower, and the wider letters you use, the narrower field of text vision you have...so you take a long time to answer). And I had to manage myself, I got no other help. I went to the private school were everybody goes to prepare for the exam, and I got prepared there. Same as now.

To be honest, if there is any help from the administration to get oneself prepared for the exam, I do not know about it.

**Question 3: What kind of help do you get at work to prepare for the exam or for any training courses?**

During the years I have been studying on my own and I have been training myself. The problem is that nearly no learning platform is accessible, so I am very limited when I have to follow the different new platforms, and the screen reader is just not enough. I went to a Moodle course recently, but I had to give up because it was impossible for me to follow it. And I love technology, I always have. If that was made accessible...wow...that would be just great! It would open so many doors for me, but right now I cannot update my training since all courses follow the newest ICT platforms, and they are simply not accessible.

**Question 4: Does your school help you to develop your job as a teacher of English?**

During my training period as a language teacher, I have found schools that were not accessible and which had no lifts from one floor to another. And the school itself was not accessible, it was not easy to reach the school.

I did not use a wheelchair when I started to work. At that time, I still used crutches. One year, I had this situation, let me see if I can manage to explain it. You know on Fridays we have to go to the school headquarters, and for that I had to take a train since the headquarters were 50 km away from the school where I worked. I could not drive and it was also really difficult for me to get a train. And when I talked to the head of the school and the administration departments, and they did not really understand my situation very well, did not have much information about how to proceed. But after a lot of talking, they finally decided that I would do a different complementary task at home and would be supervised, and that really made things a lot easier.

Then, I think it was the following year, I was sent to a school with no lift and many stairs. But the headmaster made me go up the stairs, he gave me no other choice. But I was starting, I was new there, and I did not want to make any trouble... even if I could have placed a denounce I did not. And in those times, I could have been placing a denounce on a daily basis. I got a lot of help from my colleagues. But this person, he even recommended that I checked that the school I would chose in the future was ready for me. He told me: "You need to understand we are not used to people like you."

A few years ago, I was sent to a school outside my hometown. Since I do not drive, I need to rent a flat when I get sent to a place just 20 min away from home. I went working, and on the first day I found there was an access ramp, but that does not mean it is easy to go up the ramp, they may be too vertical and thus hard to go up the ramp. But then the rest of the building was not accessible, and, for instance, in order to reach my classroom, I had to cross a patio, there were many huge glass panels along a corridor...but I cannot see, so I would not know where those were. Finally, I got a solution from the administration and got sent to a different school. But in that moment, I did not even contemplate legal complaint. I think I simply do not have the energy to be complaining and fighting all the time.

This year, there was an admministration mistake, and even if I got many points and had the right to choose a better place, in the list for the place allocation, I was assigned a village 1 h away from home. So, my colleagues helped me a lot with the situation, and I had to go to the administration again to complain and get a solution, I would have needed a personal assistant if I had to go to that place, so in the end it was a relief. But again, it took me a lot of time and effort to get it solved.

**Question 5: In the competitive exam, do you know which types of adaptations will you get before entering for the exam? Who informs you about the type of adaptations for your exam?**

When I have to take an exam, I have to say it to Social Welfare because they are the ones that have to process the adaptations that I need for the exam. For that, I make a list with the needs that I have, the adaptations that I need. Actually, it is not about what adaptations I will be granted but about what I really need. They process it and sign it. There are of course a number of laws for adaptations that correspond according to the file number we have, and Social Welfare follow these laws to grant or not to grant, but with that I have not had any problem at all.

**Question 6: When you register for the competitive exam, do you have any interview with the test givers? Or is there any questionnaire or something similar where you can state your needs and worries?**

When I register for the official competitive exam, you know, this is the third time, well,...I remember I had a meeting like a couple of days before the exam with the test givers. I met them personally, and I could give them all the information I wanted to provide.

**Question 7: What part of the exam worries you most?**

Which part of the test is the one that worries me the most? I worry about all the parts! Look, on the one hand, I'm very insecure about myself. And on the other hand, I hope that the examiners do not have prejudices with my disability, whether we like it or not, that happens sometimes. Then of course, I'm trying not to...that my intervention in the competitive exam diverts the attention of the examiners to what I am doing and not to how I am...and that brings me to my head, gives me a lot of anxiety....and I am really overwhelmed with that, I feel so anxious about it.

And then there is the listening...the famous listening. One of my biggest problems is that I have very little concentration, and it is not that I do not understand it, but that I have a hard time concentrating. So, this task is difficult for me.

**Question 8: You said that you may ask for adaptations. For the competitive exam that you are soon taking, which adaptations did you ask for?**

I have asked to have a computer so that I can write my exam and also to prepare and defend the curriculum and didactic unit. Perhaps they could read the framework descriptors for me, this is another part of the exam, or they could digitalize that part of the exam for me so that I can read it. Apart from that I have asked to take my headphones with me because the voice-over would be quite annoying for the rest of the people in the room, so this way I can listen quietly and not interfere.

Then also, there should be no images, tables, or graphics in the exam texts because I cannot do anything with them.

Now, regarding the timing, they have a look at your file and decide on the time adaptation. I have an extra hour extension for each exam hour.

Regarding the computer they told me I cannot use my own since I could cheat, I mean, copy things, form the documents in my computer. So, they have given me a computer to practice with and take to the exam. It should be as similar as possible as the one I use. But the one they have provided is an older computer, and I will

have to use an obsolete system unable to update the tools I use and adapt myself to a less efficient computer and tools than the ones I usually work with. But well, I will adapt anyway.

About the listening part of the exam. You know that when you complete a listening test, you have to answer a number of questions that you can read while you listen. I cannot do that, I have to either listen or get the voice-over read for me, but not both things at a time. Therefore, I cannot visualize the questions in the listening as other people do, so I have asked to have the audio played more times to compensate for this...I hope to meet the board of examiners before the day of the exam so that I can explain myself better or answer their questions regarding this matter.

**Question 9: What is different about learning and teaching a language after losing your sight? Which abilities have you developed?**

All my process since I started studying till now as a teacher, there have been many changes. First, I could see well, then less, then I did not see enough to read and write and did all simply what I could. I was then 19, sometimes they recorded books for me, sometimes my parents read for me things like the history of the world. That was secondary school. Then when I decided to study a degree, I was then about 30, and I used lenses, I had to magnify the screen. In the computer I had to enlarge the screen so the reading process was really slow. Two years later when I decided to take the competitive exams, it was not a good experience because the reading speed was not enough, and it was not coherent due to the reading method. When I started teaching, I still used magnifying lenses for the screen.

Now when I am in class, I simply explain the students how things work for me, and there has never been a problem. It is very clear for me that for learning or teaching a language, we do not need sight. I am aware that my students do see and they do not have to do things without seeing, because they do see. Well, I try to adapt to that situation of difference. On the other hand, that makes me feel safe because the fact of telling them this is what happens to me, I need this or that from you...well I take advantage of that on the pedagogical side. For instance, in the first day of class, I tell them that since I have to get to know them and recognize them by their voice, if they do not participate in class, they get no points, so they do participate a lot, which is really good. And in 3 or 4 days, I already know them all.

The truth is I am very happy about this reality, we get to have a close relationship, they are a bit more than students, we share many things and have a good time in class. So, I tell them to help me identify a page in a book. And I tell them that if I make a mistake while I write, they can tell me. We learn from mistakes. So, I take advantage of this to teach them that if one makes a mistake, you just rectify and that's it; there is nothing wrong about that. I transcribe nearly everything with the computer, and it gets projected on the whiteboard, and they can read and take notes, and I tell them that if I make a mistake, I do not feel embarrassed, I rectify and I tell them that they can let me know if there is any spelling mistake. I think that plays in my favor.

There is also the issue of cheating in exams, I think some of my students do cheat, they use their mobiles and copy things. But I do my job and they have to do theirs. But since I know them a lot and make them write a lot, I know who has the level and who does not. It is a matter of ethics and they have to learn that too.

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