From Classroom to Caregiving: Technology as a Tool for Special Educational Needs Inclusion, a Case Study

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Abstract

Besides teachers, caregivers also play a key role in the inclusion of SEN (special educational needs) learners, especially in the case of children, for example, by helping them with their homework. Just as it can support teachers, technology can empower caregivers; however, little, if anything, is known about how caregivers do or can use technologies. To begin to fill this gap, this paper reports on the case of a caregiver, Laura, grappling with integrating technology, for instance, text-to-speech or word processing, to help her 10-year dyslexic and ADHD (dyslexia and attention deficit hyperactivity disorder) son with his English homework. Findings reveal that her beliefs and knowledge of her son's condition determine how she uses the different tools and that her attitude is proactive and pragmatic in that she takes from the solutions proposed by the expert what she finds most useful for working on the aspects that interest her. Implications for further research and teaching are discussed, particularly with regard to the role of SEN and technology-savvy teachers in parent training.

Keywords: Parent training, Special educational needs (SEN), Inclusion, Technology-enhanced language learning

Introduction

Research on technology-enhanced language learning is no longer limited to investigating how technology can be used by teachers: learners have assumed an increasingly active role in the exploitation of technology, and nowadays, learner digital literacy, namely "understanding – and making the best use of – the current technology toolset available to each individual" (Dudeney & Hockly, 2016, p. 117), is recognised as a fundamental prerequisite for foreign language learning (see e.g., Zhang & Hyland, 2023). This premise, as obvious as it seems, reminds us of the importance of considering the two sides of the coin when envisaging how technology may

support language learning. On the one side teachers integrate technology in the classroom; on the other, learners and non-institutional stakeholders resort to technology as a support for language learning.

This double perspective may be easily applied to many if not all, ambits of language education, as is the case of using technology for making language learning accessible for learners with special educational needs (henceforth SEN): it is not only teachers who may use technology to cope with SEN in the classroom but also learners and their informal caregivers (in the medical literature figures like parents or relatives are often referred to as informal caregivers, as opposed to formal ones, such as doctors or therapists, see e.g., Donelan et al., 2002), especially in the case of children, may resort to it. Digital literacy, therefore, is a fundamental asset also for caregivers (Rodriguez & Liu, 2023).

Research has shown that being caregivers of SEN children can be a very challenging task for parents (Lach et al., 2009; Masefield et al., 2020; Purpura et al., 2021), and any supporting tool may be welcomed by them. Research, however, has mainly focused on how teachers may use technology to support SEN in the classroom (see, e.g., Ali & Razali, 2019; Cimermanová, 2015; Rubio, 2023), while little is known about how caregivers can use technology. Indeed, the potential of technology has been recognised in different ambits of caregiving, such as geriatrics (Lindeman et al., 2020) or neurodevelopmental disorders (Stasolla et al., 2024): little, however, is known about how informal caregivers may benefit from technology to assist SEN learners in their study of a foreign language. Training parents for technology could be an important asset also for language teachers, because empowering parents is critical in supporting learners, thus reinforcing any attempt made in the language classroom to make learning more inclusive. Indeed, teachers could take on the role of counsellors and train caregivers on how to exploit technology, thus strengthening their alliance with them towards a more inclusive education.

To achieve a deeper understanding of how informal caregivers may employ technology to support SEN young learners with foreign language homework and what kind of training they may require, this paper reports on a descriptive and explorative case study of a mother acting as a caregiver for her son, a 10-year-old learner of English suffering from dyslexia and attention deficit hyperactivity disorder (ADHD), and on how she used technology as a support for helping her son in his homework.

Review of Literature

Foreign Language, Special Educational Needs, and Technology

Researchers worldwide have acknowledged the potential of technology for inclusive language education (Barahona et al., 2023; Castrillo & Sedano, 2021; Soyoof et al., 2020), and within this field, a strand of research focuses on using technology to support SEN learners (see, e.g., Andujar & Nadif, 2022; Blume & Würffel, 2018; Crombie, 2013; Wilson, 2013; Young, 2024). Integrating technology into the education of SEN language learners has proven to be transformative, offering personalized and adaptive learning experiences that cater to individual needs (Iwuagwu et al., 2022; Svensson et al., 2021), help overcome difficulties (Ou et al., 2024) and consequently enhance language acquisition.

Regarding SEN, we must first distinguish between technology in support of dyslexia and ADHD. Technology in support of dyslexic learners focuses mainly on coping with these language disorder difficulties, such as elaboration of phonology or difficulty in reading and writing. A typical digital tool for dyslexic learners is, for instance, text-to-speech, which uses software to read out texts for dyslexic learners so as to allow them the fruition of a written text. Technology in support of ADHD learners, on the contrary, mainly focuses on attention and is aimed at helping learners manage this factor, for instance, through games (see below). Especially in the case of dyslexia, we can, for our research, distinguish between technologies devised to empower SEN learners and technologies that can support learning activities. The first aim at bridging specific difficulties of SEN learners: for instance, Ikeshita-Yamazoe and Miyao (2016) developed a training tool to help dyslexic pupils learn kanji. The second, on the contrary, investigates assistive technology as a support for learning; for instance, Košak-Babuder et al. (2019) investigate the benefits of text-to-speech (TTS) as a support for dyslexic learners in foreign language reading, or Montgomery (2024) showcases a course in which measures (including using specific fonts) were taken to accommodate the needs of dyslexic learners. Our focus here is on the latter approach.

Caregiving for SEN Children and Parent Training

Caregivers are on the front line in coping with SEN, and consequently, caregiving and family have received much attention in the research. Among the themes in this field, parents' difficulties are of primary importance because informal caregivers are usually heavily stressed because of their role, and parenting as the burden is a common metaphor in the relevant literature. A primary area for family involvement is that of homework and, not surprisingly,

also in this ambit, issues related to parents' mental health have a leading role (see, e.g., Abín et al., 2024; Katz et al., 2022). The emotional dimension, therefore, plays a predominant role in caregiving and teaching SEN learners (Howard, 2023): Franklin (2018) is clear in depicting a picture in which failure in school traumatises the child and caregivers are required, first of all, to create "a healthy, positive relationship" (p. 51) with them and become partners and allies. Parent training has proven a highly valuable asset for caregivers (see, e.g., Lee et al., 2022; Multhauf et al., 2016), as it can provide parents with tools to help them in their difficult task of supporting their children in different ambits, including learning and homework (Ruan et al., 2024). Parent training may also focus on using technologies: Dawson et al. (2019), for instance, provide a list of recommendations on how to help dyslexic students with assistive technologies, which explicitly mention the need to discuss with parents which tools to adopt. Interestingly, the same paper reports on a very positive outcome of parent training for technology, and indeed, some researchers have observed that parents of SEN children generally hold technologies in high regard, probably because they are aware of their potential (Altindağ Kumaş & Sardohan Yildirim, 2024). Although parent training for technologies seems to hold potential for SEN children and caregivers are frequently cited in the SEN literature, this ambit, at least as regards foreign language, is nonetheless marginal. Since this field is unexplored, the question, therefore, arises as to what it might look like. What notions and tools from teacher education (such as online communities, O'Dowd & Dooly, 2022), for example, could be used in it, or, again, the frameworks on technologies and language learning normally used by teachers (see, e.g., deVries et al., 2015 on automatic speech recognition and corrective feedback) can be reused in parent training?

Recognizing the importance of technologies in caregiving suggests the importance of parent training and, therefore, of investigating caregivers' needs in this area.

Theoretical Framework

Given the complexity of our research objective, a clear theoretical framework may provide a list of variables we can rely on for a more solid understanding of the issue. If we focus on an informal caregiver using technology to support SEN learners in their homework, we see a non-professional autonomously resorting to an asset (i.e., technology). Therefore, all differences duly considered, we may envisage an analogy between caregivers and autonomous language learners, since both categories are responsible and make choices about which tools to use and when and how to use them.

Among the different theoretical frameworks that can be applied to the study of autonomous language learning (Lai, 2017), Bennet and Maton's (2010) conceptualisation of technology-enhanced autonomy integrates bourdiean notions of field, *habitus,* and capital with the distinction, proposed by Bernstein (1999), between a vertical discourse, typical of formal and institutional education, with a horizontal one, typical of everyday, informal contexts characterized by segmental, context-specific knowledge. In the present study, we mostly limit ourselves to investigating how bourdiean sociology, already used in the literature on dyslexia caregiving (see Ross, 2017), can help us understand how caregivers enter and interact in a specific field, here: the inclusion of a SEN learner into formal primary education. Inclusion, like every other field, has its own rules and values among and through which all actors interact and compete for acquiring a high status: we might expect formal and informal caregivers to approach this field with different values and beliefs *(habitus)* and bringing different forms of capital, be it economic or symbolic. Technology, then, can be seen as a form of capital that actors use to interact in this field.

To meet the research objectives, i.e., understanding how an informal caregiver acquires and uses technology as a form of capital in helping a SEN learner with homework, the reported investigation was guided by the following questions:

1. How does the caregiver use technology in assisting a 10-year-old dyslexic and ADHD boy learning a foreign language?
2. What are the caregiver's needs with respect to education for technologies?

Method

Research Design

The reported research employed a qualitative approach and particularly a case study design, often adopted in studies on SEN (see, e.g., Mohamadzadeh et al., 2020; Simon, 2000). Specifically, the design falls within the single-case embedded type (Yin, 2003) as it is focused on a specific situation, namely the caregiver and how she perceives and uses technology to help her son with his homework. A case study design is particularly well-suited for investigating the experiences of a caregiver because of its ability to provide a comprehensive and nuanced understanding of individuals within their real-life context. Indeed, in the reported research, such design enabled the researcher to capture the interactions between the caregiver, technology, and the learner, highlighting the interventions and support mechanisms that enhanced the caregiver's support of the learning process.

The participant's primary caregiver provided informed consent to participate in this study and agreed to share relevant information and insights regarding her experience. All information collected was treated with confidentiality and used solely for academic purposes in accordance with ethical research guidelines.

Participants

Luca (the names used in this case study are fictional and do not reflect the real identity of the participants) is a 10-year-old boy from an upper-middle-class family in his last year of primary school. His mother and teachers describe him as intelligent and curious. Luca was diagnosed with severe dyslexia at the age of 7. According to the diagnosis, Luca has a high IQ, and no cognitive impairments emerged. The diagnosis was immediately taken up by the school, which, as required by law, prepared a personalized educational plan in which the measures necessary to ensure Luca full access to schooling are indicated. Following persisting problems in the classroom, Luca was tested for ADHD and was found to suffer from the condition.

Laura is Luca's biological mother and his principal caregiver. Laura is an educated woman who works as a doctor in a large public hospital. She is attentive towards her son. As an educated and attentive mother, Laura is proactive in her role of caregiving and keeps herself informed: she reads books on SEN, attends public meetings with professionals, and, most important for us, recognises the importance of parent training. For these reasons, she willingly accepted to undergo personalised training on using technology to support her son in doing his homework. Laura regularly uses ICTs for work and leisure and occasionally helps less capable relatives with them.

Technology Used

The experiment focused on homework common at Luca's level of instruction, i.e. last year of primary school, aiming at an A1 level of the Common European Framework (CEFR - Council of Europe, 2001; 2018), namely grammar, phonology and vocabulary drills and tasks; reading and writing tasks. These tasks constituted Luca's homework and Laura was asked to help him using technology. The tools included in Laura's training were chosen based on research on technology and SEN and on Luca's needs:

- Speech synthesis (TTS software for comprehension, see, e.g., Košak-Babuder et al., 2019);

- Word processing to support reading (for instance, dividing a text into smaller parts, see, e.g., Liontou, 2019);
- Specifically designed fonts and their usage (OpenDyslexic, see, e.g., Flaten Jarsve & Tsagari, 2022);
- Tools for the creation of quizzes, games, and exercises (see, e.g., Lan et al., 2018, Tan & Chua, 2012)

Laura was introduced to these tools and provided a short training by an expert on how to use technology to support a SEN learner: the expert illustrated the main features of each tool and how it can be used for SEN. Laura was then required to choose and use these tools in supporting Luca in his homework and to report her experience. The expert was, however, always available for support, and she consulted him for suggestions and technical issues. Some of the activities were actually negotiated with the expert, but she always had the last word on the choices.

Data Collection

To investigate the case of Laura learning how to use technology to support her son, multiple data sources were utilized so as to ensure a comprehensive understanding of the subject matter. Primary data was collected through semi-structured interviews with Laura and on-site observations.

A total of four interviews were conducted. Laura was first interviewed before the training to gain an understanding of her caregiving context; she was then interviewed twice during and once after the observation.

The questions of the first interview were:

1. How do you perceive your role as a caregiver with respect to school?
2. How would you describe yourself supporting your son in his homework?
3. What is your personal and professional contribution to Luca's caregiving?
4. Do you consider yourself to be proficient with technology?
5. Do you know any technological tool that could be used to support your son in doing his homework?

The questions of the two interviews conducted during the experimentation were:

1. Of the tools you have used, which ones have been helpful to you?

2. What strengths did they have for the child's problems, and how did they help you with homework?
3. Are there any drawbacks to use these tools?
4. Did you experience any technical difficulty?
5. Do you think you will or could use them in your everyday tasks in the future?

The questions of the last interview were:

1. How would you describe your experience in using technology to support your son?
2. Do you think that the time/resources employed for integrating technology can be compatible with your daily schedule (work, etc.)?
3. What were the most difficult issues in using technology?
4. Do you find that technology can constitute a valuable asset in your task? Can it change the way you support your son?

Participant observation was employed during the different homework sessions, with notes being taken on two themes, namely real-time decision-making processes and interactions. The researcher engaged in limited tasks while observing, such as sitting next to the caregiver/learner couple during homework, and provided occasional guidance or assistance with technical/design issues when prompted to do so. The use of technology during homework, however, was often discussed beforehand with Laura, with the expert providing ideas on how to use a tool for a specific tool. The researcher took care not to disrupt the natural workflow of homework. The researcher video recorded the sessions through a smartphone and took anecdotal notes on the caregiver's behaviour regarding technology, notably what decisions she took and what difficulties she experienced. Measures to avoid distracting the participant as much as possible were taken given his condition: for instance, the smartphone was placed at a distance so as not to alter Luca’s behaviour.

The experimentation was conducted between April and June 2024. There were six technology-enhanced homework sessions in total, each lasting about 15 - 20 minutes.

Data Analysis

Data analysis was conducted according to the principles of Interpretative Phenomenological Analysis (IPA), a method that focuses on exploring how individuals make sense of their personal experiences and the meanings they attach to them (Eatough & Smith, 2017). IPA is especially useful for understanding subjective experiences in depth. In this case, IPA enables us to gain insights into the parent's perspective, including the challenges she encounters: this approach is, therefore, particularly suited for the case under scrutiny. By centering on the caregiver's personal meaning-making process, this methodology not only reveals the nuances of the caregiver-learner dynamic but also provides a richer understanding of the decisions of the caregiver regarding technology. Data analysis followed the protocol outlined for IPA, namely (1) initial noting, (2) developing emergent themes, and (3) connecting themes, and was conducted using the QDA Miner software for Windows.

Findings

Laura managed to use technology to support Luca in his homework once a week. Each week Laura used a different tool to work on a specific language task, for example, TTS software as a reading support. Table 1 details the technologies used during the experiment, the language activities for which they were used, and, finally, their effectiveness in supporting Luce in performing the task.

Table 1

Tools Used by Laura in Assisting Her Son

Week	Technology	Activity	Effectiveness
1	Text-to-speech	Reading comprehension	Potentially useful, did not improve attention
2	Flashcards	Grammar	It helped maintain Luca's attention
3	Word processor	Written production	Overall effective for dyslexia, but laborious to implement
4	Flashcards	Grammar	It helped maintain Luca's attention, but the wow effect soon wore off
5	Online quiz	Grammar	A more gamified approach; worked better towards attention
6	Word processor	Reading comprehension	Overall effective for dyslexia, but laborious to implement, did not help with attention

This section presents the key themes that emerged from the analysis of the interviews and observational data: these themes represent Laura and Luca's lived experience with how technology can support homework.

Rejection of Didactics and Pragmatic Approach to the Use of Technologies

The first theme is Laura's relationship with didactics or, rather, how she perceives her own role in her son's education. A very particular view emerges here, which we can call a "rejection of didactics," that is, a disinterest in teaching combined with the awareness that she has another role in her son's education, namely working on the affective dimension. We can speak, in this case, of a specialization, Laura, a specialization that is reinforced by her own knowledge of her son and her readings on SEN. In the preliminary interview, focused on her relationship with her son's condition, Laura clearly defines what in bourdiean sociology we may call her *habitus* and capital.

> Interviewer*: "How would you describe your role with respect to homework?"*
> Laura*: "My role is a role of necessity, in the sense that I would not want to have this role, it is a tiring role and… and it is a role that affects me though […] I don't feel assisting him in his homework to be my job, regardless of his condition."*
> Interviewer: *"So, you don't like helping Luca in his homework?"*
> Laura*: "Definitely not. Because homework puts me in front of my son's difficulty, so that it annoys me, it's something that bothers me. […] so, first, I am not a teacher, I don't recognise it as my role and second, when I am faced with his difficulties I feel frustrated because I see him struggle so."*

Here, Laura positions herself in the field of SEN caregiving. Indeed, she clearly detaches and distinguishes herself from teachers irrespective of her son's condition and dismisses all didactical implications and issues. The point here is that Laura enters the field of caregiving with a *habitus* that is ontologically different from that of teachers. Her ability to work with empathy and her profound knowledge of her son constitute her capital. She is a committed caregiver who feels she has a specific role, namely that of working with empathy,

which she dubs through the metaphor of "finding a channel" (see next paragraph) to provide an optimal environment for learning.

Laura's *habitus* has proven critical in her approach to technology, and we can observe in her a sort of rejection of didactics. Laura has overall short-term objectives, like having her son do his homework, or mid-term, like fostering his motivation and attention, and does not concede to anything that does not yield immediate and tangible results in these respects. A tool like TTS, for instance, was soon dismissed, because it failed to fulfil what she felt as was her main concern (see below).

Her pragmatic attitude is further exemplified by how she quickly identifies a potential in the fonts specifically designed for dyslexia during the same activity and resorted to using the app's text area as a blackboard to have Luca read some sentences and try if using the font may be of any help in coping with his dyslexia. Another example of her pragmatic approach can be observed by looking at an example of what may be defined as simplified and extemporary gamification (see below). Here, Laura does not seem interested in long-term gamification, for instance assigning scores to completed activities, but rather, she is more prone to transforming exercises into games to foster Luca's attention.

Focus on Attention and Motivation

When addressing her son's homework, Laura's main concern is represented by attention and motivation. This concern is rooted in Laura's emphasis on the emotional dimension of the child's condition, as it emerges from the first interview:

> *There are books. I read one this morning about parents with dyslexic children, which basically said that parents should work a lot with empathy to create a climate suitable for learning to study. Although I struggle, I manage quite well to find a channel with my son, because what I see in him is that he is very weighed down by this, by the fatigue and so the more something is imposed on him in a pedantic way, the more it makes him even more frustrated , while the more you actually put into it some empathy or lightness, fun, finding something a little bit more special - that anyway fosters motivation in him.*

Laura feels she has a specific role, namely that of working with empathy, which she dubs through the metaphor of "finding a channel" to provide an optimal environment for learning. In this perspective, Laura is more prone to resorting to gamification - albeit simplified and extemporary (see below), which enhances intrinsic motivation, and, as seen, more conservative with respect to tools aimed at supporting dyslexia, such as TTS, which seem less capable of fostering Luca's interest and motivation. During a session, for instance, she used a web-based platform for vocabulary exercises and simply transformed a grammar/vocabulary exercise into a game by using flashcards. The exercise required matching descriptions of sea animals with sentences to practise comparative adjectives, e.g., "The shark is bigger than the goldfish." Here Laura used an online platform, Quizlet, in which she uploaded pictures of animals she had previously downloaded from the Internet. This overall simple process proved beneficial to foster Luca's interest and motivation. Before starting, Luca jumped around the laptop, eager to play. Turning the task into a kind of game aroused Luca's interest and indeed, he completed the whole exercise, in spite of his usually being reluctant to engage in repetitive tasks and losing interest quickly after just a few items. Interestingly, his excitement turned into attention during the exercise, which, due to his dyslexia, was done with the support of the caregiver (who wrote the answers in the book), like all of Luca's homework. Laura used technology to devise motivating and game-like activities at other times. For instance, with the expert's support, she transformed a grammar task (fill a sentence with "have/has got"), a kind of activity Luca usually dislikes, into an activity in which the Kahoot app gave instant feedback and provided a score. Although we do not argue here whether Laura's knowledge of her son is correct or biased, we must observe that it is responsible for her choices, which are undoubtedly informed and, above all, have worked for what was her main concern, namely motivation.

Autonomy and Proactive Attitude

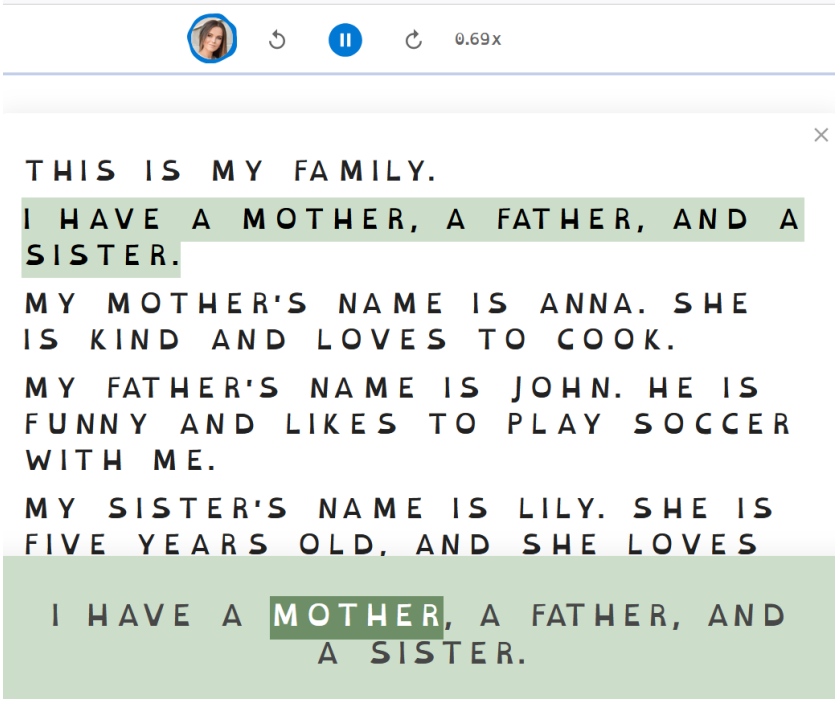
A third important theme emerging from the analysis is Laura's autonomy and proactive attitude. Indeed, Laura is far from being a passive executor: although she refers to the expert for the initial implementation of activities, one may observe in her a tendency to autonomously analyse the affordances (van Lier, 2004) of each tool and an attempt whenever she spots a potential in it, to reuse it in a different context.

If we take TTS, for instance, we see Laura at first following the expert instructions: she installs the fonts for dyslexia on her laptop, pastes a text in the NaturalReader® app, adjusts the options so as to make the app highlight the text being read etc. Here we have an example

of a pedagogically sound action (see, Flaten Jarsve & Tsagari, 2022), which Laura receives from formal instruction by the tutor. While she soon found it to be not particularly effective as regards motivation and attention, she found that this combination of tools actually helped Luca read, especially small portions of text. Laura then autonomously chose to replay portions of the texts to help Luca understand and answer comprehension questions, although Luca's attention was wavering, and she struggled to get him to attend to the task. While, as seen, motivation and attention constitute her principal concern, she is able to envisage how to use this combination (fonts+TTS) as a digital blackboard for reading.

Figure 1

TTS Software Used to Support Reading Through a Multisensory Approach. Reading is Enhanced Through the Use of a Font Specifically Designed for Dyslexia



Based on this experience, the combination of TTS and fonts for dyslexia was used as a support for a phonology task; here, Laura simply replied to the procedure: wrote each word (one at a time) in the app's text area, and it read by the software. This task was overall straightforward to implement and easy for the child to perform, since the focus on one word at a time made the cognitive load of the activity lighter than reading. However, Laura did not find particular benefits in using technology for the task, apart from using the fonts as a support for reading.

To support reading in a subsequent task, a solution similar to that of Liontou (2019) was devised with the help of the expert (week 6). A text was subdivided into smaller pieces, each of which was rewritten using specific fonts for dyslexia and accompanied by an image to support understanding. In this case, it was necessary to follow him patiently and wait until he had the right concentration. In this way, however, the benefits of technology were actually nullified because much of the reading was done by the caregiver.

Finally, a different outcome occurred with word-processing software in supporting, mostly controlled, writing. Writing tasks at the A1 level are, by definition, simple; however, notwithstanding their simplicity, they constitute an arduous task for a dyslexic learner. The "Describe your best friend" task constitutes an interesting example. In this case, we see Laura adopting a proactive stance: she ponders the affordances of the tools at her disposal and discusses with the expert how to use word processing to accommodate Luca's needs. She made Luca answer orally, then made him dictate to her the answer she would write on the word processor, on which she could adjust different settings (for instance, she used a dyslexia font and wrote in capital letters), use the spell-checker to call Luca's attention to spelling and, also, use colours to highlight letter combinations in words difficult to spell, for instance "to show him that *gh* is silent in straight," a practice which would however, again, soon lose its appeal for Luca. Interestingly, Laura does not transfer the writing task into a digital environment: she manages, although with the expert's support, to integrate technology as a fundamental part of the redesigning of the task, which involves other actions, like having Luca answer orally. In this case too, the main problem is in Luca's capacity to keep his attention focused.

> *One of the first things I was advised to do by the therapist was to avoid obliging him to write and to do tasks orally instead, writing things down myself (…) This activity was able to catch his attention, at least for the first sentences. (…) In this case, too, I feel this approach might help him with his condition, as long as he keeps his attention focused. (…) This activity made me understand that tools can be used in many ways, but… I don't know if I will ever be able to do this alone, however.*

Laura's last sentence is useful in understanding whether, how, and how much she would be able to use technologies in the future. As she observes in the final interview, notwithstanding her autonomy, expert support is likely to be decisive.

> *I don't think I will use a digital tool each time I help Luca with his homework; however, some activities were rather simple and they are not too laborious. But I don't have the time, nor the ability, to design new activities and, you know, cannot speculate too much on what to do, choosing tools and so on… the expert's support made a big difference in facilitating my task.*

The answer is clear in explaining that technology integration is not something that can be easily achieved by Laura, certainly not with short training and, most importantly, without adequate support.

Discussion

The first research question aimed at investigating how Laura used technology in assisting her son. We can answer this question according to our IPA approach by connecting the themes emerging from the data. The three themes appear indeed to be strictly connected. First, Laura is a committed and educated caregiver who, above all, is conscious of her capital in the field of caregiving, namely her knowledge of her son and her will to work, especially on the affective and emotional dimension of learning (Howard, 2023). Technology is, in the case of Laura, a form of capital because it can play a key role in this fundamental area of SEN, namely emotions, and finally make "homework time is less cumbersome" (Dawson et al., 2019). Here, Laura strongly aligns with the voices in the literature on parental caregiving that suggest parents become allies of their children (Franklin, 2018), a position that is well explained by her strong emotional involvement, common as seen in caregivers of children with SEN (see above). Since she has a clear idea of her position in the field of caregiving, Laura adopts an approach towards technology that is pragmatic and proactive at the same time. It is pragmatic because the potential technology is weighed against clear objectives and it is also proactive because Laura rearranges and implements technologies towards the same objectives. This is particularly clear when she spots the potential of using dyslexia fonts for reading short sentences and practicing phonology. The same holds for gamification, which, as seen, is simplified to fulfil the short-term objective of maintaining Luca's attention during the homework, which is in line with the findings of research on gaming and inclusion (Soyoof et al., 2020). Laura, in conclusion, does not passively apply the expert's instruction but autonomously weighs the

affordances of the tools and makes choices that augment her capital in the field of caregiving. Precisely because she wants to be a player in that field, Laura is constantly seeking to improve her capital and therefore approaches technology from a sceptical and, above all, practical perspective.

The findings provide information to answer our second research question. Also, in this case, we must set off from Laura's position in the field of caregiving, which is different from that of teachers and, therefore, expresses different needs and objectives for training. First, Laura is proactive but not totally independent and autonomous. She needs technical support (for instance, she needed help to install and use the fonts in the browser) and asks for the expert's advice on how to design activities, especially the more complex ones (see reading comprehension in week 6). This suggests that she may occasionally need technical/procedural training but also that she may require support in integrating the understanding of the pedagogical affordances of technology and task design. Her digital literacy, as defined by Dudeney and Hockly (2016), therefore appears to be incomplete. Second, her lack of interest in didactics and pragmatic attitude push towards a more practical approach to technologies, particularly those capable of supporting Luca in the short term, in this particular case, as regards attention and motivation. Finally, the fact that Laura has strong beliefs and a proactive attitude does not automatically mean that she is capable of correctly identifying Luca's real needs; on the contrary, she appears to be biased towards the emotional dimension. Her bias towards emotions further leads her to neglect other areas, for instance, language accuracy, where technology can play a fundamental role, as illustrated by Ou et al. (2024). It seems, therefore, that she needs critical tools to understand and assess the affordances of different tools, which could imply adapting and simplifying existing theoretical frameworks and theories, like the output hypothesis, to appreciate the potential of tools (de Vries et al., 2015).

We must consider our answer as limited to this specific case, however, these needs may constitute a first tentative foundation for training, as explained in the following.

Limitations and Directions for Further Research

The reported case, like all single case studies, does not allow in the least for generalisation; in addition to this, we must point out the limitations of the present study First, Laura is an extremely committed and educated caregiver, and we do not know how many informal caregivers may be defined so. Informal caregivers are a heterogeneous group, and therefore, a fundamental step for research in this domain would be to focus on the different profiles and

how each of them might approach technology. A second limit of this study is that, to appreciate Laura's approach to technology, the tutor chose not to have a directive role, but we cannot exclude that if the tutor had been more assertive or, on the contrary, absent, Laura's recourse to technology might have been different. Further research, therefore, is needed to understand how caregivers react to varying grades of expert support. A third important limitation is that the data in our possession, even within the limits of a case study, are too scant to delve into the second element of Bennet and Maton's framework, namely the distinction between vertical and horizontal discourse. However, some of Laura's choices, such as the simplification of gamification or avoiding overly complex activities, seem to suggest that her use of technology could be driven by a horizontal discourse.

Implications for Parent Training

As said in the introduction, parent training is critical in supporting caregivers, and language teachers may discuss with parents and counsel about how to use technology at home. The reported findings can, with the necessary caveats, provide insight into this important task.

First, because they are not bound by institutional constraints, informal caregivers are, like Laura showed, completely autonomous in how they use technology. Trainers could, therefore, propose a variety of tools and methods, showing how each can be used in a simple way to support language learning, avoiding an academic approach and preferring instead accessible and easily understood solutions. Trainers could also focus on the positive effects of technologies because if parents perceive the immediate value of these technologies, they will be more motivated to use them. Above all, preparation should focus on technology resources that are easily integrated into daily life, such as text-to-speech, that can be used in a few minutes a day, or at least resources that do not require too much preparation time.

Second, as emerged from Laura's case, a course in technologies is not enough because the integration of technology is a creative process and requires continuous support on the part of experts or discussion with peers, both of which already occur in caregivers' communities. Parent training might therefore include, for instance, online communities analogous to those of language teachers (O'Dowd & Dooly, 2022) for sharing of good practices or continuous counselling and feedback on the part of the teachers. Further, the case of Laura showed that, notwithstanding a general proficiency with technology, parents may also need support as regards technical issues, like, in our case, installing fonts in a browser.

A third important implication, finally, is that parent training should not neglect theory at all: in our case, for instance, Laura's needs are practical, but this does not mean that she does not need a pedagogical foundation for her use of technology for at certain points she needs to discuss matters with the expert. It seems that reflective practice, a rather common feature of teacher training (Belvis et al., 2013), might also be useful for informal caregivers.

Conclusion

The study reported the case of Laura, a mother who, from a bourdiean perspective, clearly positions herself in the field of caregiving, where she brings her capital (her knowledge of Luca and her knowledge of ADHD/dyslexia issues). Because of her rather *habitus* she is rather pragmatic in her choices and uses technology to work on what she considers to be her own areas of competence.

These findings offer insight for language education and, in particular, for parent training. Technology can constitute a useful asset for caregivers when assisting SEN learners in their homework, although we still do not know exactly to what extent. As observed before, technology constitutes a form of capital, and, in conclusion, Laura's proactive attitude implies that it can have a part in fostering parent support in language education, although in a way that might not always be compliant with that of the teachers. It, therefore, seems useful to invest in this ambit and devise parent and informal caregiver training on this subject. As emerged from Laura's case, however, training is not enough, because integration of technology is a creative process and requires support on the part of experts.

There is, however, one point that clearly emerges from Laura and Luca's case: caregivers are on the front line in tackling special educational needs and are eager to acquire tools which may help them in this task. As seen above, research on technology-enhanced language learning might have much to offer them, providing that caregivers' needs are thoroughly considered and met. That is what research in this field has always done and would certainly be capable of doing in this case.

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