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Anna Zamkowska,
Casimir Pulaski Radom University, Poland

*CORRESPONDENCE

Marianthi Karatsiori

✉ mkaratsiori@gmail.com

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Beyond barriers: exploring foreign language learning experiences of students with diverse learning needs in four European countries

Marianthi Karatsiori^{1*}, Trisevgeni Liontou², Ewa Domagata-Zysk³,
Karin Vogt⁴, Milena Košak Babuder⁵ and Mojca Poredoš⁵

¹Department of Education and Social Policy, University of Macedonia, Thessaloniki, Greece,

²Department of English Language & Literature, National & Kapodistrian University of Athens, Athens, Greece, ³Department of Special Pedagogy, The John Paul II Catholic University of Lublin, Lublin, Poland, ⁴University of Education Heidelberg, Heidelberg, Baden-Württemberg, Germany,

⁵Department of Special and Rehabilitation Education, Faculty of Education, University of Ljubljana, Ljubljana, Slovenia

While foreign language learning is increasingly recognized as crucial for educational and social inclusion, the experiences of students with diverse learning needs in foreign language classrooms remain understudied. This study investigated the relationship between Personal Engagement (PE) and Learning Attitudes (LA) among students with diverse learning needs in foreign language learning contexts across four European countries (Greece, Germany, Slovenia, and Poland). The study involved 95 students (aged 8–25) with various learning needs: visual impairment ($n = 16$), deafness/hard of hearing ($n = 14$), physical/motor impairment ($n = 32$), and learning difficulties ($n = 33$). Data were collected through interviews and standardized questionnaires examining both PE and LA, with findings analyzed using both qualitative and quantitative methods. Results revealed that LA scores consistently exceeded PE scores across all groups, with students with physical impairments showing the strongest correlation between engagement and attitudes ($r = 0.674$, $p < 0.001$), while students with visual impairments demonstrated high LA despite moderate engagement levels. Students with diverse learning needs maintain remarkably positive attitudes toward foreign language learning despite varying engagement levels, suggesting that educational barriers may be more related to access and delivery methods than to students' willingness to learn. This emphasizes the need for tailored support strategies that can transform positive attitudes into fuller engagement across different types of learning needs.

KEYWORDS

foreign language learning, diverse learning needs, personal engagement, learning attitude, inclusive education, cross-national study, EFL

1 Introduction

Foreign language learning represents a fundamental aspect of modern education, yet its accessibility and effectiveness for students with diverse learning needs remains a significant challenge in educational systems worldwide. We use the term 'students with diverse learning needs' rather than 'students with disabilities' to recognize that each learner brings unique strengths to the language learning process. As defined by Chilla et al. (2024, p. 6), diverse learning needs encompass "various backgrounds, developmental stages, skills and abilities,

identities, and general physiological and psychological features of learners that might affect the current learning process or hinder the accessibility of content.” This terminology aligns with contemporary inclusive education principles that view learning differences as natural human variation rather than limitations to overcome.

While students with diverse needs have been shown to have the same educational needs as their peers without any diagnosed learning needs, these needs often remain unmet to a significant extent (Groce, 2004). Research has demonstrated that students receiving foreign language instruction exhibit cognitive benefits in reasoning, attentional focus, oral language skills, and overall school performance (Wight, 2015). Despite these documented benefits, access to quality foreign language instruction is frequently limited for students with diverse learning needs (Sparks, 2016). Much of the existing research has focused predominantly on learning challenges rather than exploring the potential benefits students with diverse needs may derive from foreign language learning. This limitation mindset has perpetuated concerns that students with diverse learning needs might become confused by learning a foreign language, potentially affecting their first language development and overall academic progress. However, strong evidence suggests that students with diverse needs can successfully acquire a second language when provided with appropriate accommodation and sufficient time (Simon-Cerejido and Gutierrez-Clellen, 2014).

A significant gap exists in our understanding of how these diverse needs interact with students’ Personal Engagement (PE) and Learning Attitudes (LA) in foreign language contexts. While previous research has explored various aspects of foreign language learning for specific disability groups, few studies have attempted to compare experiences across different types of disabilities or examine these experiences in multiple national contexts. Furthermore, the relationship between students’ engagement with foreign language learning and their attitudes toward it remains largely unexplored for learners with diverse needs.

This study, conducted as part of the SPLENDID project (Supporting Foreign Language Learning for Students with Disabilities, grant agreement 2022-1-EL01-KA220-SCH-000089364) funded by the Hellenic National Authority IKY of the Erasmus+ programme, aims to address these gaps by investigating the foreign language learning experiences of students with diverse needs across four European countries. The project, led by the University of Macedonia, brings together nine partners, including five universities: the National and Kapodistrian University of Athens, Pädagogische Hochschule Heidelberg PHHD (Heidelberg University of Education), the John Paul II Catholic University of Lublin in Poland, and the University of Ljubljana in Slovenia.

Through this investigation, we seek to contribute to a more nuanced understanding of how different types of learning needs influence foreign language learning experiences, ultimately informing more effective and inclusive pedagogical practices. This research represents a step toward understanding the actual aspirations, motivations and challenges, of students with diverse learning needs, ultimately contributing to the development of more inclusive and effective foreign language learning opportunities that benefit all learners.

2 Literature review

The concept of inclusive pedagogy in education has gained significant attention in recent years. According to Stentiford and Koutsouris (2021), two-thirds of studies on inclusive pedagogy in

Higher Education were published between 2010 and 2018, highlighting the growing interest in this field. At its core, inclusive pedagogy represents an approach that views “every learner as an equally unique individual deserving of enhanced learning opportunities and support” (Florian, 2015a). This perspective moves away from treating students with diverse learning needs as ‘others’ who require special treatment. A significant body of research challenges the common belief that teaching students with diverse learning needs requires specialized expertise. Studies have shown that successful pedagogical practices in special education settings closely mirror those required in mainstream classrooms (Davis and Florian, 2004; Florian and Linklater, 2010). Historically, teachers’ beliefs about inclusive education have evolved considerably. Early studies (Lyser et al., 1994; Avramidis et al., 2000; Marshall et al., 2002; Campbell et al., 2003) documented how teachers generally believed that supporting students with diverse learning needs required specialized teaching approaches. However, contemporary research demonstrates that effective teaching practices can benefit all students when properly implemented, regardless of their individual needs (Florian and Linklater, 2010). This understanding is particularly relevant for foreign language education, where teachers often express concerns about their ability to support learners with diverse learning needs.

Learning a foreign language involves not only cognitive competencies but also social and emotional factors that significantly impact the learning process (Domagała-Zyśk and Podlowska, 2024). As Krashen (1985) emphasized, foreign language learning is accompanied by an “emotional filter” that can lead to either success or failure depending on the emotions involved. Recent research has shifted focus from studying only difficulties and anxiety to exploring the joy and inner motivation of foreign language learning (Dewaele and MacIntyre, 2014, 2016). In the context of positive psychology in education, key principles include using positive emotions, fostering engagement, building relationships, and experiencing achievements (Seligman, 2018). For foreign language learning specifically, factors such as student well-being, empathetic communication, and mindfulness have been identified as crucial elements (Dewaele and MacIntyre, 2014). Studies have shown that positive emotions correlate with better foreign language learning outcomes (Liu and Wang, 2021), higher student engagement (Pekrun et al., 2007), and increased willingness to communicate in a foreign language (Khajavy et al., 2018). The joy of learning has been found to manifest in three dimensions: positive learning environment, positive personal attitude, and positive relationships with teachers and other students (Dewaele and MacIntyre, 2016).

The importance of these emotional and psychological factors becomes particularly crucial when considering students with diverse learning needs in foreign language learning. As Rødbroe and Janssen (2006) note, sensory impairments can significantly impact the creation and maintenance of interpersonal relationships, which are fundamental to the language learning process. When students have the ability to influence both the content and methods of their learning, they are more likely to participate actively—a factor that is vital for re-engaging those at risk of dropping out (Barry and Choules, 2017). The development of warm, secure, and trusting relationships between teachers and students becomes especially crucial for educating these students (Clark, 2000), as these relationships can significantly influence student motivation and engagement in foreign language learning (Deci et al., 1991).

Among students with diverse learning needs, those with sensory impairments face unique challenges in the foreign language classroom. Visual impairments significantly impact foreign language learning, as students miss out on incidental learning opportunities that sighted students naturally acquire through observation (Corn and Erin, 2010; D'Andrea and Siu, 2015). Research highlights the crucial role of implementing new methodological approaches, including Information Communication Technology (ICT) and assistive technology, to enhance foreign language teaching practices for visually impaired students, though this requires proper professional development and management (Al Siyabi et al., 2022; Cárdenas and Inga, 2021). Similarly, for students who are deaf or hard of hearing, foreign language learning presents both unique challenges and opportunities for growth (Domagała-Zyśk et al., 2021). Recent studies have explored various aspects of language acquisition for these students, including reading comprehension, writing skills, and visual listening strategies (Domagała-Zyśk and Podlowska, 2024).

Learning disabilities, particularly dyslexia, present another significant area of consideration in foreign language education. Research indicates that dyslexia affects not only first language acquisition but also significantly impacts foreign language learning, requiring special consideration of learners' needs and appropriately trained teachers (Nijakowska, 2019). Learners with dyslexia experience varying degrees of difficulty in foreign language literacy, both in mainstream and special education settings (Kormos, 2017a, 2017b; Nijakowska, 2020; Reid, 2016), with challenges particularly pronounced in languages with deep orthographic systems like English (Nijakowska et al., 2016). However, most dyslexic students can be successfully integrated into foreign language education with appropriate adjustments and thoughtful implementation of language learning strategies (Nijakowska et al., 2016). Multi-sensory teaching approaches have proven particularly effective, helping these learners process information through their strongest learning channels while strengthening weaker areas (Sparks and Miller, 2000; Birsh, 2005). Additionally, the development of technology-assisted learning tools has shown promise in supporting dyslexic learners' foreign language acquisition (Crombie, 2013).

Students with physical disabilities represent another group requiring specific consideration in foreign language education. These students experience diverse challenges in foreign language learning, with their performance spectrum ranging from normal giftedness to varying cognitive abilities (Boenisch, 2016). While many demonstrate advanced communicative skills, they often require additional support with structured learning, frequent revision, and may face challenges with self-directed learning and information transfer (Bergeest et al., 2019). The contemporary understanding of language errors has evolved to view mistakes as a natural part of the learning process rather than failures (Pawlak, 2020), a perspective that has helped reduce anxiety and increase confidence among all learners with diverse educational needs.

3 Methodology

This exploratory mixed-methods study employed a cross-national approach to explore the foreign language learning experiences of students with diverse learning needs. Based on the identified gaps in current research and the need for better understanding of foreign

language learning experiences among students with diverse learning needs, this study aimed to investigate the following research questions:

RQ1: What is the relationship between PE and LA across different types of learning needs in the foreign language classroom?

RQ2: How do PE and LA in foreign language learning compare across the four European countries (Greece, Germany, Slovenia, and Poland) for students with diverse learning needs?

RQ3: To what extent do educational factors (length of language study, school type, and language proficiency level) influence PE and LAs among students with diverse learning needs who learn EFL?

3.1 Ethical considerations

The study received ethical approval from research committees in all four participating countries (Greece, Germany, Slovenia, and Poland), following their respective institutional and national guidelines for research with vulnerable populations. Ethical protocols were strictly followed to protect participant privacy and ensure data integrity. All student names were replaced with numerical codes during data collection and analysis, and any potentially identifying details were removed from interview transcripts. For all participants, parental consent was obtained alongside student assent. To validate interview data authenticity, all interviews were audio-recorded with permission and transcribed verbatim, with translations verified by bilingual researchers from each participating country. Interview protocols were standardized across all four countries to ensure consistency in data collection.

3.2 Participants

The study included 95 participants across four European countries (Greece: 16, Germany: 24, Slovenia: 23, Poland: 32). The study's age range was set at 8–18 to target primary and secondary students. However, an evidence-based exception was implemented for the Slovenian cohort. Specifically, seven secondary students aged 18–25 who had visual impairments, learning difficulties and mobility impairments, attending special education secondary school were included in the sample. This methodological decision aligns with established special education frameworks that acknowledge extended educational trajectories for students with disabilities, particularly in secondary settings where individualized learning pace takes precedence over standardized age progression. In special education settings, particularly at the secondary level, it is common and pedagogically appropriate to find students who are older than the typical age range for their educational level, as these students often require additional time to complete their education while accommodating their individual learning pace and specific needs. Participants represented diverse learning needs including visual impairment ($n = 16$), Deafness/Hard of Hearing ($n = 14$), physical/motor impairment ($n = 32$), and specific learning difficulties ($n = 33$). Some participants had comorbidities. Such participants were placed in one of the groups (e.g. a Slovenian deaf student was placed in the group with physical/motor impairments). It should be noted that a

broad conceptualization of specific learning difficulties (SpLD) as an umbrella term encompassing overlapping challenges was adapted. While SpLD traditionally includes conditions such as dyslexia, dyspraxia/DCD, dyscalculia, and ADHD, we also included 6 students from Poland with Autism Spectrum Disorder (ASD) in this category for analytical purposes. This pragmatic grouping is supported by both research and policy frameworks. A meta-analysis of 11 studies by Foti et al. (2015) found that individuals with ASD show implicit learning patterns similar to those with other learning differences, demonstrating important commonalities in learning processes. Furthermore, the Individuals with Disabilities Education Act (IDEA) defines specific learning disabilities as “a disorder in one or more of the basic psychological processes involved in understanding or in using language” (Old Colony Regional Vocational Technical High School, n.d.). While IDEA distinguishes between categories of disabilities, the shared cognitive processing patterns and high comorbidity rate justify examining ASD within this broader analytical framework, particularly for educational research purposes. This broader classification approach was important for ensuring robust statistical comparisons across our cross-national sample, while recognizing that these conditions share common features in how they affect information processing, ranging from mild to severe impacts on literacy, language, and organizational skills. A variety of sampling methods, tailored to the context of each country, were used to ensure the inclusion of students with a range of challenges, including visual impairments, Deafness/Hard of Hearing, learning difficulties, and mobility/physical impairments. The study's inclusion criteria required participants to be officially diagnosed with a disability by their respective national authorities, to be actively learning at least one foreign language and to be enrolled in primary or secondary education

in any type of school (i.e., mainstream, special school). While the study was open to students learning any foreign language, all participants were learning English, with some additionally studying other languages such as German or French.

3.3 Greece

In Greece, 16 students with visual impairments, Deafness/Hard of Hearing or hard of hearing, learning difficulties, and mobility impairments were recruited from mainstream schools, primary or/and secondary education. Ten students attended mainstream classrooms with a shadow teacher, who is a certified Learning Support Assistant (LSA), by their side, providing continuous support throughout all classes (Table 1).

3.4 Germany

The data from the German context presents information about 24 students with diverse needs learning English as a foreign language. The sample includes students aged 9 to 18 years, with the largest group comprising students with physical/motor impairments including ADHD (13 students) and 3 with epilepsy. The remaining students are distributed across specific learning difficulties (6 students), Deafness/Hard of Hearing (2 students). Germany has no participant who has visual impairment. Most students attend either special needs schools (primarily those with physical impairments) or mainstream secondary schools, and demonstrate a wide range of language proficiency levels from A1 to B2, with A1 being the most common level (Table 2).

TABLE 1 Profile of Greek students with diverse needs in EFL education ($N = 16$).

Type of disability	Sex	Age	CEFR level	Years learning English	Type of school
Visual Impairment	F (2), M (2)	15, 15, 17, 17	A2 (3), B2 (1)	4–6 years (2), 7–10 years (2)	Mainstream class with LSA (2), Mainstream class (2)
Deafness/Hard of hearing	F (3), M (1)	11, 14, 14, 16	A1 (1), A1 (1), B2 (1), C1 (1)	1–3 years (1), 7–10 years (3)	Mainstream class with LSA (2), Mainstream class (2)
Specific learning difficulties (Dyslexia)	F (1), M (3)	13, 14, 17, 18	B1 (1), B2 (2), C1 (1)	4–6 years (1), 7–10 years (3)	Mainstream class with LSA (4)
Mobility/Physical disabilities (inc. ADHD)	F (1), M (3)	12, 12, 15, 17	A2 (1), B1 (2), C1 (1)	4–6 years (3), 7–10 years (1)	Mainstream class (2), Mainstream class with LSA (2)

TABLE 2 Profile of German students with diverse needs in EFL education ($N = 24$).

Type of disability	Sex	Age	CEFR level	Years learning English	Type of school
Physical/Motor Impairments (inc. ADHD)	F (3), M (10)	10, 11, 11, 11, 12, 13, 13, 14, 14, 15, 16, 16, 18	A1 (2), A1 (8), A2 (1), B1 (2)	1–3 years (2), 4–6 years (6), 7–10 years (5)	Special needs (8), Mainstream-Secondary (5)
- Epilepsy	F (2), M (1)	13, 13, 14	A1 (1), A1 (2)	1–3 years (1), 4–6 years (2)	Special needs (3)
Specific learning difficulties (Dyslexia)	F (2), M (4)	11, 12, 15, 16, 16, 16	A1 (1), A2 (1), B1 (3)	4–6 years (2), 7–10 years (4)	Mainstream-secondary (6)
Deafness/Hard of hearing	M (2)	9, 17	A1 (1), B2 (1)	1–3 years (1), 7–10 years (1)	Special needs (1), Mainstream Secondary (1)

3.5 Poland

The data presents information about 32 Polish students with diverse needs learning English as a foreign language. The students range in age from 8 to 17 years, attending both mainstream and special education settings. The sample represents five distinct categories of disabilities: visual impairments (8 students), Deafness/Hard of Hearing (7 students), learning disabilities (10 students), autistic spectrum disorder (6 students), and physical disabilities (1 student). For analytical purposes, students with autism ($n = 6$) were included in the broader category of specific learning difficulties. This decision was made to ensure more robust statistical comparisons (Table 3).

3.6 Slovenia

The data presents a comprehensive overview of 23 Slovenian students with diverse needs studying English as a foreign language. The students range in age from 9 to 25 years, attending mainstream primary and secondary schools. The age limit for the study was 8–18, to include primary and secondary students, but, as there were 7 students in secondary education who were over 18, they were also integrated into the sample. Slovenia has no participant, who would be only deaf or hard of hearing, since a deaf student was placed in the group with motor/physical impairments due to present comorbidity. The sample includes three types of disabilities: physical impairments (8 students), visual impairments (4 students), specific learning difficulties (11 students) (Table 4).

3.7 Data collection and analysis

Data was collected through semi-structured interviews lasting 30–60 min. The interviews gathered both qualitative and quantitative

data, including information about participants' language learning contexts and proficiency levels. Students' experiences were assessed using items from the Foreign Language Enjoyment Scale (Dewaele and MacIntyre, 2014), with responses recorded on a 5-point Likert scale. The qualitative analysis focused on three key questions: what students enjoy most about English, what makes English learning difficult for them, and their future plans for language learning.

3.7.1 Quantitative analysis

For this study, we constructed two distinct variables—PE and LA—by selecting and categorizing specific items from Dewaele and MacIntyre's (2014) Foreign Language Enjoyment (FLE) scale. While the original FLE scale is more extensive, we focused on items that specifically addressed individual engagement and attitudinal aspects of language learning for students with diverse needs.

The PE variable was constructed using six items from the FLE scale that specifically capture active involvement and personal investment in learning ("I can be creative," "I do not get bored"), emotional connection ("I enjoy learning," "I feel as though I'm a different person"), and achievement experiences ("I've learnt interesting things," "I feel proud of my accomplishments"). The LA variable was formed using seven items that reflect broader attitudes toward the learning environment and process, including error acceptance, sense of belonging, and classroom atmosphere.

The reliability analysis supported this two-construct approach, with both scales showing good internal consistency (PE: $\alpha = 0.752$; LA: $\alpha = 0.731$). To analyze these two constructs, the following statistical approaches were employed. Paired t-tests were used to examine differences between PE and LA scores within the four types of diverse learning needs, while Pearson correlations assessed the relationships between PE and LA scores within each type of learning need. The non-parametric Kruskal-Wallis test was selected to analyze differences in PE and LA scores across geographical contexts and

TABLE 3 Profile of Polish students with diverse needs in EFL education ($N = 32$).

Type of disability	Sex	Ages (in years)	CEFR level	Years learning English	Type of school/setting
Visual impairments	F (4), M (4)	13, 13, 13, 13, 13, 14, 14, 14	A1 (6), B1 (2)	7–10 years (8)	Special education (7), Mainstream (1)
Deafness/Hard of hearing	F (3), M (4)	9, 12, 12, 16, 16, 17, 17	A1 (1), A2 (2), B2 (4)	4–6 years (2), 7–10 years (2), >10 years (3)	Special education (5), Mainstream (2)
Specific learning difficulties	F (3), M (7)	8, 10, 11, 11, 11, 14, 14, 14, 15, 16	pre-A1 (1), A1 (4), A2 (1), B1 (2), B2 (2)	1–3 years (1), 4–6 years (4), 7–10 years (5)	Mainstream classroom (10)
Autistic spectrum disorder	F (1), M (5)	11, 11, 12, 12, 13, 15	A1 (5), A2 (1), C1 (1)	4–6 years (4), 7–10 years (2)	Special education (4), Mainstream (2)
Physical disabilities (ADHD)	M (1)	13	A2	4–6 years	Mainstream classroom (1)

TABLE 4 Profile of Slovenian students with diverse needs in EFL education ($N = 23$).

Type of disability	Sex	Ages	CEFR level	Years learning English	Type of school
Physical impairments (a deaf/hard of hearing student is included in this group)	F (3), M (5)	16, 16, 17, 17, 19, 20, 21, 23	A2 (4), B1 (2), B2 (2)	4–6 years (1), 7–10 years (3), >10 years (4)	Primary (1), Secondary (7)
Visual impairments	F (2), M (2)	9, 12, 13, 21	A1 (2), B2 (1), C2 (1)	1–3 years (2), >10 years (2)	Primary (3), Secondary (1)
Specific learning difficulties (inc. ADD)	F (3), M (8)	10, 11, 11, 13, 13, 13, 14, 15, 16, 20, 25	A1 (1), A2 (4), B1 (1), B2 (3), C2 (1)	1–3 years (1), 4–6 years (2), 7–10 years (7), >10 years (1)	Primary (7), Secondary (4)

types of diverse learning needs. Where significant differences were found, DSCF pairwise comparisons were conducted for post-hoc analysis. Additional Kruskal-Wallis tests examined potential differences based on educational factors including length of language study, school type, and language proficiency level.

3.7.2 Qualitative analysis

The qualitative data from interviews were analyzed using thematic analysis following a systematic approach. Initial deductive analysis was guided by three main categories derived from the interview questions: sources of Foreign Language Enjoyment (Q1: “What do you enjoy most about English?”), perceived challenges in language learning (Q2: “What makes it hard/difficult for you to learn English?”), and future language learning aspirations (Q3: “What are your plans for learning/using languages in the future?”). Within each disability type, responses were coded and analyzed to identify recurring patterns and themes. To ensure authenticity in representing student voices, direct quotes were selected and contextualized with relevant demographic information including age, CEFR level, country, and educational setting.

4 Results

4.1 Statistical analysis of PE and LA

To answer the 1st research question “What is the relationship between PE and LA across different types of learning needs in the foreign language classroom?” the analysis, presented in Table 5, reveals distinct patterns across different learning needs groups. The relationship between PEPE and LA varies significantly across different types of learning needs, revealing distinct patterns for each group while maintaining some consistent trends.

The analysis revealed distinct patterns in both the relationship between PE and LA scores (measured by correlations) and the difference between these scores (measured by paired *t*-tests) across disability types. The paired *t*-tests examined whether the differences between PE and LA scores within each group were statistically significant, while the correlations assessed the strength and significance of the relationship between these two measures.

The Physical Impairment group ($N = 32$) demonstrates the strongest correlation between PE and LA ($r = 0.674$, $p < 0.001$), showing a robust and highly significant relationship. This group achieved both high PE scores ($M = 3.64$, $SD = 0.86$) and high LA scores ($M = 3.99$, $SD = 0.79$). The *t*-test results ($t = 1.63$, $p = 0.104$) indicate that the difference between PE and LA scores was not

statistically significant, suggesting relatively balanced levels of engagement and attitudes. This strong, significant correlation suggests that for students with physical impairments, their level of engagement is closely tied to their attitudes toward language learning.

The Learning Difficulties group ($N = 33$) shows a moderate to strong correlation ($r = 0.515$, $p = 0.001$), despite having the lowest PE scores ($M = 2.99$, $SD = 0.73$) among all groups. While maintaining relatively positive LA ($M = 3.56$, $SD = 0.67$), the significant *t*-test result ($t = 3.09$, $p = 0.002$) indicates a meaningful difference between PE and LA scores. The significant correlation indicates that even with lower overall engagement, there is a consistent relationship between how these students engage with and feel about language learning.

The Visual Impairment group ($N = 16$) presents an interesting pattern with a weak, non-significant correlation between PE and LA ($r = 0.152$, $p = 0.565$). Despite showing moderate PE scores ($M = 3.41$, $SD = 0.65$), this group achieved the highest LA scores ($M = 4.00$, $SD = 0.39$). The significant *t*-test result ($t = 3.04$, $p = 0.002$) confirms that the difference between PE and LA scores is statistically meaningful. The non-significant correlation suggests that for students with visual impairments, positive attitudes toward language learning persist regardless of their level of engagement.

The Deaf and Hard of Hearing group ($N = 14$) shows a moderate but non-significant correlation ($r = 0.313$, $p = 0.289$) and demonstrates relatively balanced scores between PE ($M = 3.40$, $SD = 0.84$) and LA ($M = 3.79$, $SD = 0.52$). The *t*-test results ($t = 1.38$, $p = 0.169$) indicate that the difference between PE and LA scores is not statistically significant. However, given the smaller sample size and non-significant correlation, we should interpret this relationship cautiously.

A consistent pattern emerges across all disability types: LA scores are invariably higher than PE scores, though this difference reaches statistical significance only for the Visual Impairment and Learning Difficulties groups ($p = 0.002$ for both). The Physical Impairment and Learning Difficulties groups, with the largest sample sizes ($N = 32$ and $N = 33$ respectively), provide the most robust evidence of the engagement-attitude relationship, showing significant correlations ($p < 0.001$ and $p = 0.001$ respectively). This suggests that while students generally maintain positive attitudes toward language learning, the strength and nature of the relationship between engagement and attitudes varies substantially based on the type of learning need.

These findings emphasize that while positive relationships between engagement and attitudes exist across all groups, the significant variations in the strength and nature of these relationships based on learning needs necessitate carefully tailored approaches. Such approaches should focus on leveraging the existing positive

TABLE 5 Comparison of PE and LA scores across different disability types: means, standard deviations, *t*-test results, and Pearson correlations.

Disability type	<i>N</i>	Personal engagement	Learning attitude	<i>t</i> -value	<i>p</i> (<i>t</i> -test)	Correlation (<i>r</i>)	<i>p</i> (corr)
Visual impairment	16	3.41 (0.65)	4.00 (0.39)	3.04	0.002*	0.152	0.565
Deaf and hard of hearing	14	3.40 (0.84)	3.79 (0.52)	1.38	0.169	0.313	0.289
Learning difficulties	33	2.99 (0.73)	3.56 (0.67)	3.09	0.002*	0.515	0.001**
Physical impairment	32	3.64 (0.86)	3.99 (0.79)	1.63	0.104	0.674	<0.001**

Values in parentheses represent standard deviations. *p*(*t*-test) indicates significance of paired *t*-tests comparing PE and LA scores within each group. Nnn(corr) indicates significance of Pearson correlations between PE and LA scores.

attitudes while addressing specific engagement challenges unique to each type of learning need, ultimately fostering more effective inclusive foreign language learning environments.

The strength of this correlation gains particular significance when considering the diverse characteristics of our sample. The sample at hand encompasses remarkable heterogeneity, including various types of learning challenges, a wide age range spanning from 8 to 25 years, and different educational settings ranging from mainstream to special needs schools across four distinct national educational contexts. Moreover, the robustness of this correlation becomes even more noteworthy when considering the potential additional barriers these students face in foreign language learning compared to typical learners. The cross-cultural nature of our data further strengthens these findings, as the relationship between engagement and attitude appears to transcend national educational systems, suggesting a universal pattern in how students with diverse learning needs experience foreign language learning. This consistency across such a heterogeneous sample provides compelling evidence for the fundamental relationship between PE and LA in inclusive foreign language education.

Figure 1 presents the analysis of PE and LA scores. All scores for both measures consistently fall within a moderate to high range (approximately 3.0 to 4.0 on a 5-point scale), indicating generally positive experiences across all groups. A noticeable trend is the slightly higher LA scores relative to PE scores across all groups, indicating that while students exhibit a positive attitude toward learning—such as motivation and resilience—their engagement, defined as active involvement and participation, may be less intense. This gap may reflect underlying challenges in engaging students fully, though it is important to note that engagement levels remain positive. Examining each group reveals nuanced differences. Students with visual impairments exhibit relatively high LA scores, implying particularly positive attitudes toward language learning, possibly due to effective

adaptive strategies or strong intrinsic motivation within this group. In contrast, students who are deaf or hard of hearing show lower PE scores (~ 3.40), hinting at potential engagement challenges that could stem from communication barriers or limited accessibility to language instruction. Similarly, students with learning difficulties report the lowest PE scores (~ 2.99), suggesting potential difficulties in maintaining engagement, possibly due to challenges in comprehension or processing that impact active participation. Students with physical impairments display the most balanced relationship between PE and LA scores, indicating that physical limitations may not significantly affect their engagement or attitudes toward language learning.

For the Visual Impairment group, the mean PE score is 3.41 with a relatively moderate SD of ± 0.67 , while the LA mean is higher at 4.00 with a low SD of ± 0.41 . This indicates that although students with visual impairments generally show varied levels of engagement, their attitudes toward learning are notably consistent and positive. The Deaf and Hard of Hearing group shows slightly more variability. The mean PE score is 3.40 with a higher SD of ± 0.88 , and the LA mean is 3.79 with an SD of ± 0.55 . The higher SD in PE indicates a broad range of engagement levels, reflecting individual differences in how students connect with their learning experiences. However, the lower variability in LA (± 0.55) suggests that, like the Visual Impairment group, students who are deaf or hard of hearing tend to have a relatively consistent and positive LA, despite differences in their engagement levels. In the Learning Difficulties group, the dispersion is more pronounced, with a mean PE score of 2.99 and a high SD of ± 0.74 . The LA mean is 3.56, with an SD of ± 0.68 . This higher variability in both PE and LA suggests a diverse range of experiences within this group. Some students with learning difficulties feel positively engaged and maintain a positive LA, while others struggle in both areas. This diversity implies that students with learning difficulties may benefit from more individualized support to address the wide range of engagement and attitude

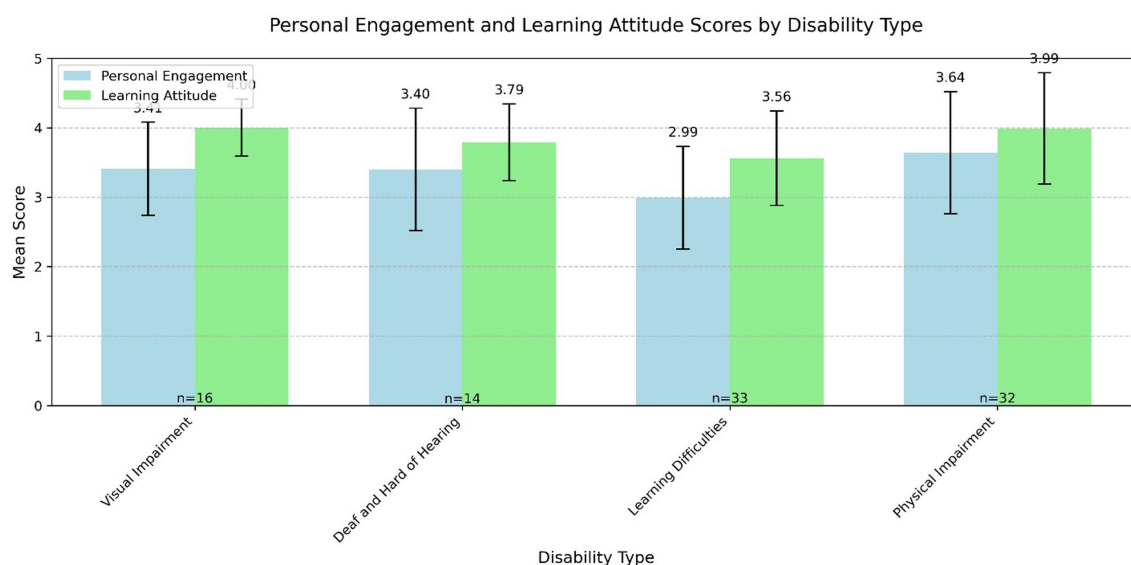


FIGURE 1

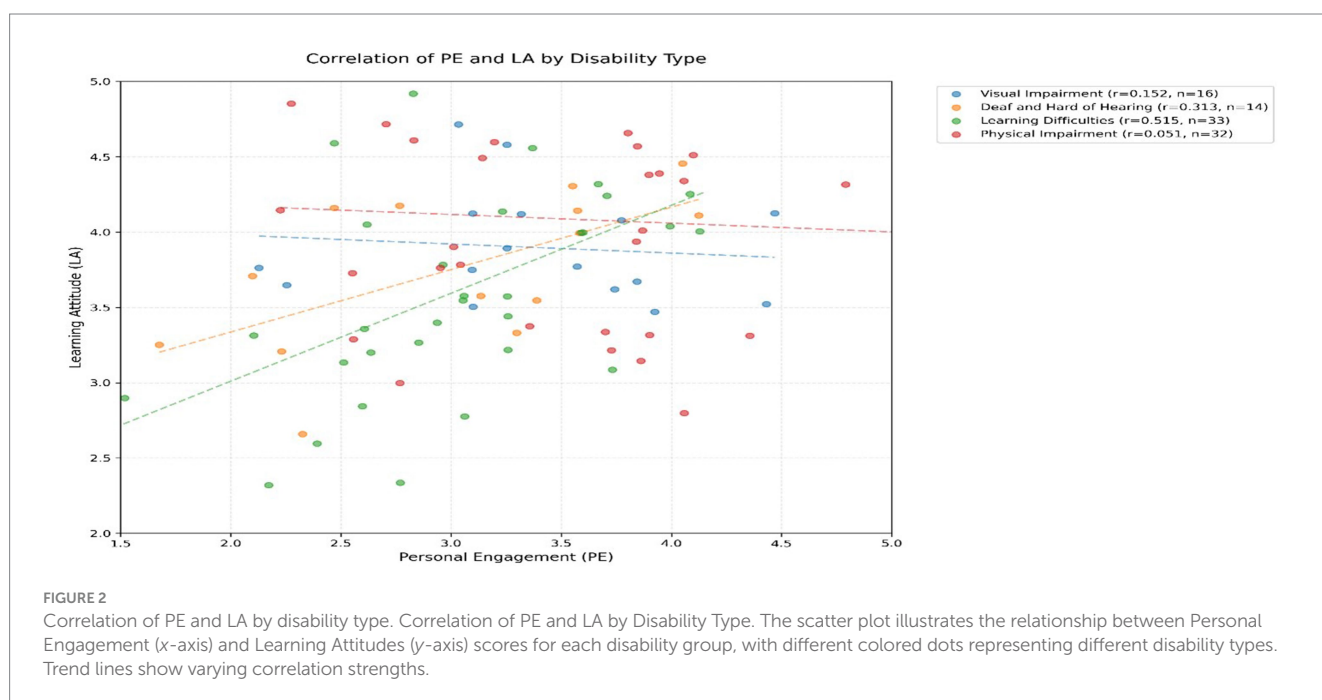
PE and LA scores by disability type. The bar graph displays mean scores on a 5-point Likert scale across four disability groups (Visual Impairment, Deaf/Hard of Hearing, Learning Difficulties, Physical Impairment). PE scores (blue bars) and LA scores (green bars) are compared, showing consistently higher LA scores across all groups, with error bars indicating standard deviations.

levels. For the Physical Impairment group, the mean PE score is 3.64 with a high SD of ± 0.88 , while the LA mean is 3.99 with a relatively low SD of ± 0.80 . The broad spread in PE scores shows that engagement levels vary widely within this group, likely reflecting individual differences in how physical limitations impact classroom participation and interaction. However, the more consistent LA scores (± 0.80) suggest that, on the whole, students with physical impairments share a generally positive and stable LA. This consistency in attitude, even with variable engagement, could indicate resilience or effective support strategies that help these students maintain a positive outlook on learning.

The presence of overlapping error bars across all groups implies that while differences in PE and LA scores exist, they are subtle and not likely statistically significant. This overlap suggests that students with different types of disabilities may share more similarities than differences in their foreign language learning experiences. The consistent, moderate-to-high scores across all groups indicate that, despite diverse needs, students generally approach language learning with a positive outlook. From an educational perspective, these findings suggest a need to focus on fostering engagement, particularly among students with hearing impairments or learning difficulties, while also acknowledging the generally positive attitude toward language learning observed across all groups.

Figure 2 shows the correlation between PE and LA across different disability types. The scatter plot reveals varying relationships between PE and LA for each group. Learning Difficulties shows a moderately strong positive correlation ($r = 0.515$), with points forming an upward trend as PE increases. The Visual Impairment group displays a weak correlation ($r = 0.152$), shown by a nearly flat trend line. The Deaf and Hard of Hearing group shows a moderate correlation ($r = 0.313$). The Physical Impairment group's data points suggest a strong positive correlation ($r = 0.674$), indicating that for these students, higher personal engagement is strongly associated with more positive learning attitudes.

For the Visual Impairment group, the mean PE score is 3.41 with a relatively moderate SD of ± 0.67 , while the LA mean is higher at 4.00 with a low SD of ± 0.41 . This indicates that although students with visual impairments generally show varied levels of engagement, their attitudes toward learning are notably consistent and positive. The Deaf and Hard of Hearing group shows slightly more variability. The mean PE score is 3.40 with a higher SD of ± 0.88 , and the LA mean is 3.79 with an SD of ± 0.55 . The higher SD in PE indicates a broad range of engagement levels, reflecting individual differences in how students connect with their learning experiences. However, the lower variability in LA (± 0.55) suggests that, like the Visual Impairment group, students who are deaf or hard of hearing tend to have a relatively consistent and positive learning attitude, despite differences in their engagement levels. In the Learning Difficulties group, the dispersion is more pronounced, with a mean PE score of 2.99 and a high SD of ± 0.74 . The LA mean is 3.56, with an SD of ± 0.68 . This higher variability in both PE and LA suggests a diverse range of experiences within this group. Some students with learning difficulties feel positively engaged and maintain a positive learning attitude, while others struggle in both areas. This diversity implies that students with learning difficulties may benefit from more individualized support to address the wide range of engagement and attitude levels. For the Physical Impairment group, the mean PE score is 3.64 with a high SD of ± 0.88 , while the LA mean is 3.99 with a relatively low SD of ± 0.80 . The broad spread in PE scores shows that engagement levels vary widely within this group, likely reflecting individual differences in how physical limitations impact classroom participation and interaction. However, the more consistent LA scores (± 0.80) suggest that, on the whole, students with physical impairments share a generally positive and stable learning attitude. This consistency in attitude, even with variable engagement, could indicate resilience or effective support strategies that help these students maintain a positive outlook on learning.



Overall, examining SD across these groups highlights notable patterns: while LA scores are generally consistent within most groups (especially Visual Impairment and Deaf and Hard of Hearing), PE varies more widely, particularly for students with Learning Difficulties and Physical Impairments. These findings suggest that while many students maintain positive learning attitudes, individualized strategies might be necessary to address diverse engagement needs, especially in groups with high PE variability. Perhaps the most significant finding is that despite varying levels of personal engagement, all groups maintain remarkably positive learning attitudes, suggesting that students across all types of learning needs retain a positive disposition toward language learning, even when their personal engagement levels might be lower. This pattern indicates that positive attitudes toward language learning persist independently of engagement challenges associated with different learning needs and types of disability.

Figure 3 illustrates the analysis of PE questions across different types of disabilities. Students with mobility impairments consistently demonstrated higher engagement scores across most items, with particularly strong responses in feeling “proud of accomplishments” ($M = 4.22$). In contrast, the learning difficulties group generally reported the lowest engagement scores, with notably low scores in the area of “do not get bored” ($M = 2.60$). Students with visual impairments showed a unique pattern, reporting exceptionally high scores for “learnt interesting things” ($M = 4.19$), while students with deafness/hard of hearing demonstrated relatively consistent moderate scores across most questions (ranging from 3.36 to 3.79). Interestingly, the question about feeling “as though I’m a different person” received consistently low scores (ranging from 2.06 to 2.71) across all disability types, suggesting this aspect of engagement might be less relevant or relatable for students with diverse learning needs, or for our sample, the meaning of the item was not clear to most of the respondents.

Figure 4 presents the analysis of LA questions across different types of disabilities. Students with visual impairments reported the highest scores for “It’s cool to know English” ($M = 4.56$) and “Making errors is part of the learning process” ($M = 4.50$). In contrast, students

with learning difficulties generally reported lower scores, particularly in “English classes—it’s fun” ($M = 3.15$). Students with mobility impairments showed strong scores in “It’s a positive environment” ($M = 4.25$) and “There is a good atmosphere” ($M = 4.00$). Meanwhile, students with deafness/hard of hearing had moderate scores across most items, with a notable peak in “English classes—it’s fun” ($M = 3.93$). These findings suggest that LA vary across disability types, with certain groups enjoying specific areas of the learning process while facing challenges in others.

To answer the second research question “How do PE and LA in foreign language learning compare across the four European countries (Greece, Germany, Slovenia, and Poland) for students with diverse learning needs?” the analysis reveals distinct patterns in how national contexts interact with diverse learning needs.

Table 6 presents the analysis of PE and LA across countries. There are strong positive correlations between PE and LA in several specific groups: Slovenia’s Learning Difficulties group ($r = 0.870$, $p = 0.002$), Visual Impairment group ($r = 0.808$, $p = 0.002$), and Physical Impairment group ($r = 0.684$, $p = 0.042$), Germany’s Physical Impairment group ($r = 0.514$, $p = 0.042$), Greece’s Hearing Impairment group ($r = 0.915$, $p = 0.002$), and Poland’s Hearing Impairment group ($r = 0.856$, $p = 0.002$). A consistent pattern emerged across all countries and disability types, where Learning Attitudes scores were invariably higher than Personal Engagement scores, with LA means ranging from 3.50 to 4.25 and PE means from 2.00 to 4.04. Greek students generally showed high attitude scores (LA = 4.14–4.25), while Polish students tended to report lower scores (PE = 2.77–3.33, LA = 3.50–3.88). However, it’s important to note that sample sizes varied considerably ($N = 1$ to $N = 16$), which affects the reliability of some measurements, particularly in groups with fewer than three participants where correlations could not be calculated. The analysis of Greek students’ data revealed an intriguing pattern: negative correlations between PE and LA for students with Visual Impairment ($r = -0.902$, $p = 0.002$) and Learning Difficulties ($r = -0.798$, $p = 0.002$). While these students reported relatively lower PE scores

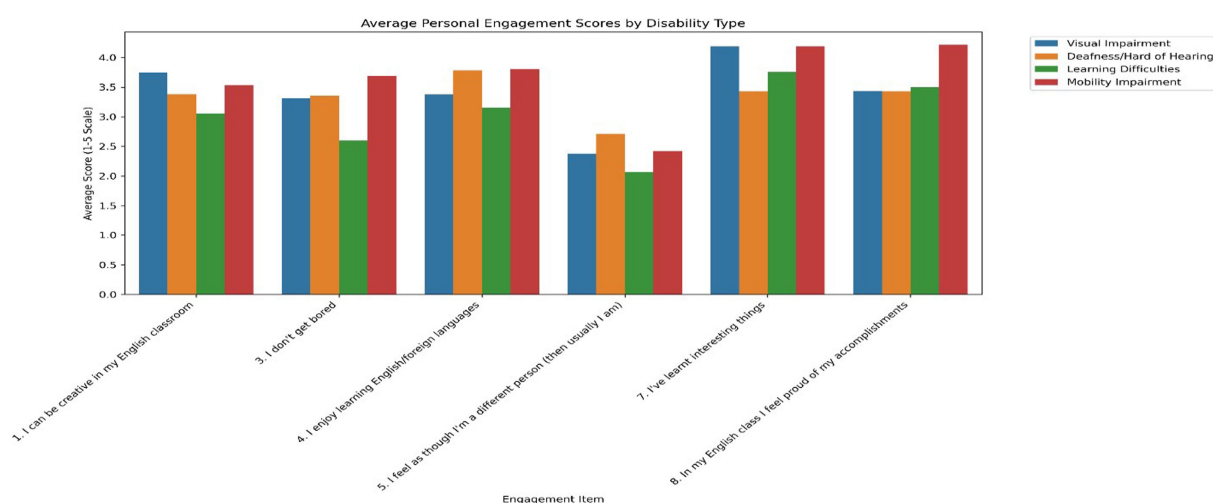


FIGURE 3

PE questions by disability type. The bar graph compares mean scores on six Personal Engagement questions across four disability categories (Visual Impairment, Deaf/Hard of Hearing, Learning Difficulties, Physical Impairment). Questions assess aspects like learning enjoyment, creativity, boredom, and sense of accomplishment, with scores ranging from 1 to 5 on a Likert scale.

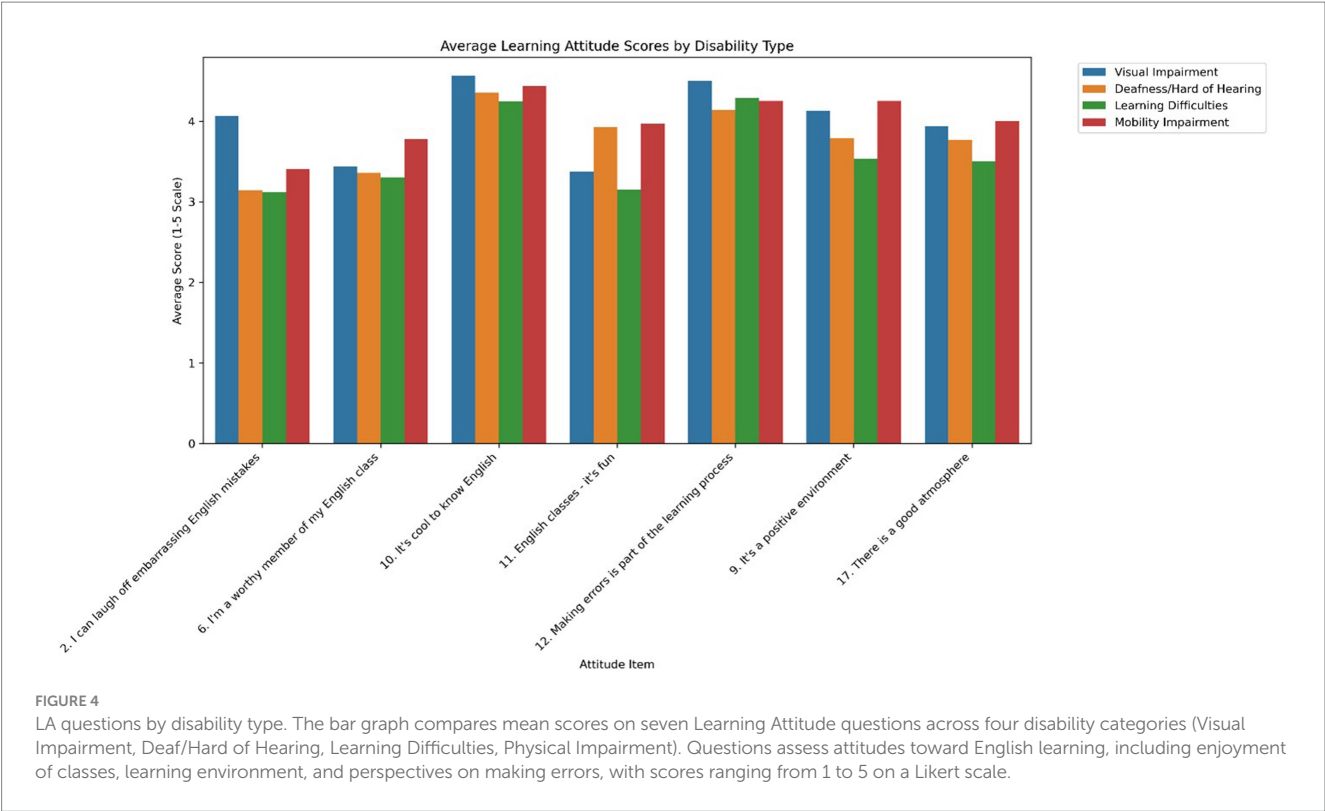


TABLE 6 PE and LA correlations across four European countries: analysis by disability type and country.

Country	Disability type	N	PE mean	LA mean	Correlation (p-value)
Slovenia	Learning difficulties	11	2.60	3.95	0.870 ($p = 0.002$)*
Slovenia	Visual impairment	4	4.04	3.93	0.808 ($p = 0.002$)*
Slovenia	Physical impairment	8	3.65	3.91	0.684 ($p = 0.042$)*
Germany	Learning difficulties	6	3.14	3.75	0.632 ($p = 0.178$)
Germany	Hearing impairment	2	3.33	4.00	–
Germany	Physical impairment	16	3.53	4.15	0.514 ($p = 0.042$)*
Greece	Hearing impairment	4	3.88	4.14	0.915 ($p = 0.002$)*
Greece	Visual impairment	4	3.04	4.21	–0.902 ($p = 0.002$)*
Greece	Learning difficulties	4	3.54	4.25	–0.798 ($p = 0.002$)*
Greece	Physical impairment	4	3.87	4.21	0.423 ($p = 0.178$)
Poland	Physical impairment	1	3.17	3.67	–
Poland	Hearing impairment	7	3.17	3.62	0.856 ($p = 0.002$)*
Poland	Learning difficulties	16	2.77	3.50	0.708 ($p = 0.124$)
Poland	Visual impairment	8	3.33	3.88	0.450 ($p = 1.127$)

(PE = 3.04 and 3.54 respectively), they maintained notably high LAs (LA = 4.21 and 4.25). This seemingly paradoxical relationship suggests that students might develop positive LAs (such as accepting mistakes, valuing English knowledge, and appreciating the learning environment) even when they experience challenges with PE (creativity, enjoyment, and personal accomplishment in class). This pattern could be attributed to effective support systems in Greek schools, where teachers might create supportive, positive learning environments that help students maintain optimistic attitudes toward language learning, even when they struggle with personal engagement.

Ten students (out of 16) in Greek mainstream classrooms were supported by Learning Support Assistants (LSAs), certified shadow teachers providing continuous support. This individualized support may explain the paradoxical relationship observed between personal engagement and learning attitudes among Greek students, contributing to positive attitudes despite lower engagement levels. The individualized support provided by LSAs may contribute to creating a positive and supportive learning environment, which could help students maintain positive attitudes towards language learning despite their lower levels of personal engagement. This finding is particularly

interesting because it might suggest these students have developed a resilient attitude toward learning despite their PE challenges. It could indicate that while they might struggle with active participation and feeling successful, they have maintained a positive mindset about learning English in general. These findings highlight the importance of distinguishing between PE and LAs in educational support strategies, as they can appear to operate independently rather than in parallel.

To further analyze the findings, Figure 5 presents the overall country means of LA and PE per country. The non-parametric Kruskal-Wallis test revealed statistically significant differences in participants' LAs across different countries at a significant level of $p < 0.001$. Analysis of LAs across the four participating countries revealed significant variations in mean scores, with Greek participants demonstrating the highest LA ($M = 4.21$), followed by German participants ($M = 3.96$), Slovenian participants ($M = 3.76$), and Polish participants ($M = 3.58$). DSCF pairwise comparisons identified two statistically significant differences: German participants showed significantly more positive LA compared to Polish participants ($p = 0.046$), and Greek participants demonstrated significantly higher LA than Polish participants ($p = 0.001$). While Slovenian participants' scores fell between those of Germany and Poland, these differences did not reach statistical significance. This pattern could suggest a north-south gradient in LA, with southern European participants (Greece) showing the most positive attitudes, central European participants (Germany, Slovenia) demonstrating moderately positive attitudes, and eastern European participants (Poland) reporting relatively lower, though still positive, LA. However, it's important to note that Poland had the largest sample size among all countries, which might influence these results, as larger samples tend to show more varied responses and potentially lower average scores compared to smaller samples which might skew toward more extreme positive values. If we do not take into account this important methodological consideration, the results might suggest meaningful cross-national differences in LA among students with diverse learning needs, with Greek and German students demonstrating particularly positive orientations toward foreign language learning compared to their

Polish counterparts. This pattern should be interpreted with consideration of the varying sample sizes across countries and their potential impact on the observed differences in attitudes.

The analysis revealed a similar pattern of variation in PE scores, with Greek participants demonstrating the highest mean engagement ($M = 3.58$), followed closely by German ($M = 3.50$) and Slovenian participants ($M = 3.46$), while Polish participants showed notably lower engagement scores ($M = 3.06$). The Kruskal-Wallis test indicated a significant overall difference between countries ($p = 0.034$), but subsequent pairwise comparisons with Bonferroni correction did not yield statistically significant differences between specific country pairs at the $p < 0.05$ level. The comparisons between Poland and Germany ($p = 0.215$) and between Poland and Greece ($p = 0.169$) approached but did not reach statistical significance. This pattern suggests that while there are observable differences in PE levels across countries, these differences are more subtle and less pronounced than those found in LA. This indicates that national educational contexts might have a more moderate influence on PE compared to their impact on LA. Additionally, the larger sample size in Poland compared to other countries may suggest that educational settings do not significantly influence the PE of students with diverse needs learning English as a Foreign Language (EFL). It is very probable that there are no meaningful differences between countries, so the second research question cannot be answered with precision.

To address the third research question "To what extent do educational factors (length of language study, school type, and language proficiency level) influence PE and LA among students with diverse learning needs?" additional statistical analyses were conducted to examine potential differences based on these three key educational variables. The Kruskal-Wallis tests revealed no statistically significant differences ($p > 0.05$) among groups for any of these variables. Specifically, neither the duration of foreign language learning experience, nor the educational level (primary vs. secondary education), nor the language proficiency level (from A1 to C2) appeared to significantly influence students' PE or LA. Additionally, the Kruskal-Wallis test revealed no statistically significant differences ($p > 0.05$) between male and female students in terms of PE or LA, suggesting that sex did not

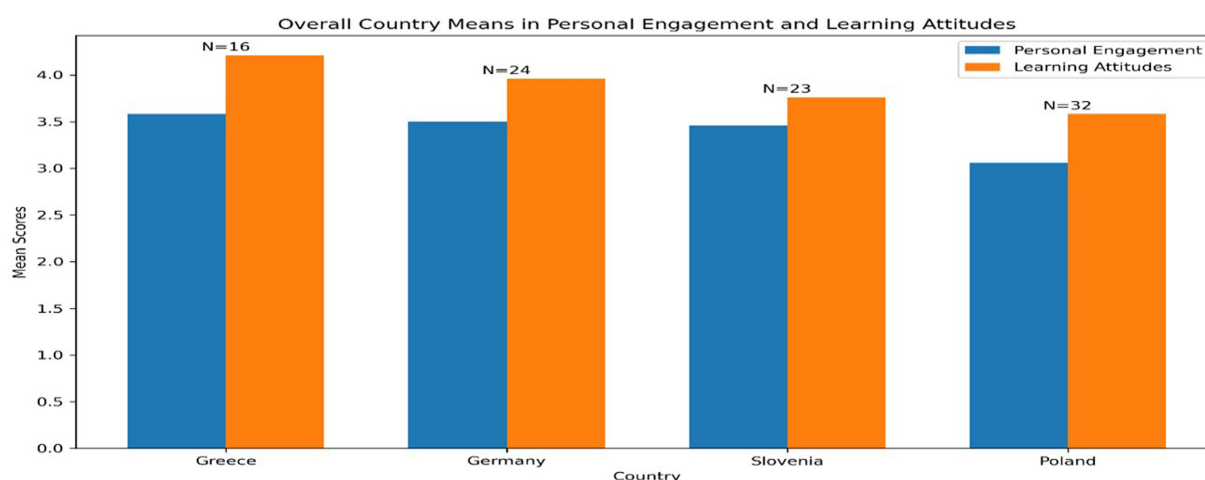


FIGURE 5
PE & LA mean score by country. The graph compares average PE and LA scores across four European countries (Greece, Germany, Slovenia, and Poland), with blue and orange bars representing the two measures.

significantly influence these variables in the context of this study. These findings suggest that the relationships between PE and LA observed in this study are relatively stable across different lengths of language learning experience, educational levels, and language proficiency levels, indicating that these variables may be more strongly influenced by the type of learning need rather than these contextual educational factors.

4.2 Thematic analysis of students' experiences

The analysis of three questions during the interview (Q1: What do you enjoy most about English?, (Q2 What makes it hard/difficult for you to learn English?), and (Q3: What are your plans for learning/using languages in the future?) provides valuable insights into the relationship between PE and LA among students with diverse learning needs. These three questions directly address the research questions in several ways. Regarding RQ1, the responses to Q1 reveal how different types of learning needs influence engagement patterns—for instance, visually impaired students show strong engagement with audio-based activities, while hearing-impaired students demonstrate higher engagement with written tasks, indicating that PE is closely tied to accessibility and learning modality preferences. The responses to Q2 highlight how different challenges across disability types affect LA, with these challenges often shaping students' approach to language learning. Concerning RQ2, cross-country analysis of these responses reveals interesting patterns—for example, students from Greece and Germany often express more career-oriented motivations in their Q3 responses, while Polish and Slovenian students more frequently mention travel and social communication as future goals. This suggests cultural and educational system differences influence both engagement and attitudes. Finally, addressing RQ3, the responses, particularly to Q1 and Q3, demonstrate how educational factors impact engagement and attitudes—students with longer language study experience (7–10 years) typically express more sophisticated engagement patterns and future aspirations, while school type (mainstream vs. special needs) appears to influence the types of activities students find engaging and their perceived barriers to learning. The CEFR level notably correlates with both engagement patterns and future aspirations, with higher-level students generally expressing more complex and academically-oriented goals in their Q3 responses, suggesting a positive relationship between language proficiency and learning engagement. Below, a more detailed thematic analysis per disability type is presented.

4.3 Visual impairments

4.3.1 What do you enjoy in EFL? (Q1)

The responses of students with visual impairments revealed significant insights into learning enjoyment. Students across three countries (Greece, Poland, Slovenia), particularly those aged 13–15, demonstrated enthusiasm for practical aspects of language acquisition, expressing explicitly their preference for audio-based activities, and a number of them mentioning listening activities as their favorite. The responses highlight a strong connection between enjoyment and tangible progress, with students expressing satisfaction in vocabulary expansion and improved reading comprehension. Notably, learners from special needs schools in Poland showed particular motivation

tied to future travel opportunities, while students at various CEFR levels (A1–A2) appreciated the gradual development of their language skills. This pattern of responses suggests that students find the most satisfaction in learning experiences that combine practical skill development with clear indicators of progress, regardless of their educational setting or initial proficiency level.

4.3.2 Making students' voices heard

“Learning new words, improving reading skills, developing creativity.”

Age: 13 | CEFR: A1 | Poland | Special Needs School

“It is pleasure for me to think that if I go somewhere out of Poland, I will know the language.”

Age: 14 | CEFR: A1 | Poland | Special Needs School

“Learning new words and that I understand more with time.”

Age: 15 | CEFR: A2 | Greece | Secondary School

4.3.3 What is the greatest challenge in EFL? (Q2)

Students with visual impairments face distinct challenges that fundamentally impact their engagement with written language learning materials. The analysis reveals consistent challenges with text accessibility as a primary barrier, with students across Greece, Germany and Slovenia reporting significant difficulties in accessing standard text formats. This is particularly evidenced by a student from Greece (Age 15, CEFR B2) who noted, “I find it difficult to read long texts, my vision is blurred. The lighting conditions play a big role,” highlighting how environmental factors intersect with accessibility needs. Difficulties with reading speed and comprehension emerge not from cognitive processing issues, but rather from the physical challenges of accessing text, with students requiring additional time to process written materials due to their visual limitations. Issues with standard text formats are particularly prominent, as demonstrated by a Polish student (Age 13, CEFR A1) who observed, “For example we cannot see well and some letters are blending together,” indicating how conventional text presentations can become barriers to learning. The need for adapted materials emerges as a crucial theme, with students requiring various accommodations such as enlarged print, specific color contrasts, or digital formats with zoom capabilities. However, these adaptations sometimes present their own challenges, as illustrated by one student's comment about enlarged print books being “so big, like all table,” suggesting that solutions must balance accessibility with practicality. These findings highlight the critical importance of thoughtful material adaptation while considering the practical implications of different accessibility solutions.

4.3.4 Making students' voices heard

“I find it difficult to read long texts, my vision is blurred. The lighting conditions play a big role.”

Age: 15 | CEFR: B2 | Greece | Secondary School

"For example we cannot see well and some letters are blending together."

Age: 13 | CEFR: A1 | Poland | Special Needs School

"Words that I hear for the first time. I cannot read them very well."

Age: 13 | CEFR: A1 | Poland | Special Needs School

4.3.5 What are your future plans with foreign languages? (Q3)

Students with visual impairments demonstrate goal-oriented and pragmatic aspirations for their future language use, with patterns emerging across different countries and educational contexts. The focus on practical communication skills appears as a primary theme, with students expressing clear awareness of language as a tool for real-world interaction. This is exemplified by a student from Poland (Age 14, CEFR A1) who expressed, "If I can go to England I will use my English skills," showing how they connect language learning to concrete future applications. Interest in higher education emerges as another significant theme, particularly among students at secondary level, as evidenced by a Greek student (Age 15, CEFR A2) stating, "I would like to continue and get a language certificate and study in UK," demonstrating how language proficiency is viewed as a pathway to academic advancement. Travel-related goals feature prominently in students' responses, suggesting they view their visual impairment not as a barrier to mobility but as a factor to be accommodated in their international aspirations. Professional development aspirations also emerge strongly, with students across different CEFR levels expressing clear connections between language skills and career opportunities. Notably, these findings suggest that visual impairment may influence the specific strategies students envision for achieving their goals, but does not fundamentally limit their academic or professional ambitions. This pattern of responses indicates a high level of self-efficacy and future-oriented thinking among visually impaired students, despite the additional challenges they face in language learning.

4.3.6 Making students' voices heard

"I would like to continue and get a language certificate and study in UK."

Age: 15 | CEFR: A2 | Greece | Secondary School

"If I can go to England I will use my English skills."

Age: 14 | CEFR: A1 | Poland | Special Needs School

"To reach as high a level as possible and improve my communication skills."

Age: 13 | CEFR: B1 | Poland | Special Needs School

"I have plans to keep learning new languages...I have French in my plans. But I notice that I'm also a little bit drawn to Macedonian

because of one singer, this one Tosha Proeski...I do not necessarily have to have a teacher for all these languages. You can put yourself on YouTube, you have got these different apps...I want to be an example to other people with disabilities that anything can be achieved if you have the motivation."

Age: 21 | CEFR: B2 | Slovenia | Secondary school

4.4 Deafness and hard of hearing

4.4.1 What do you enjoy in EFL? (Q1)

Students with Deafness/Hard of Hearings demonstrate distinct preferences in their language learning enjoyment, with patterns that clearly align with their sensory strengths and learning needs. The preference for visual learning methods emerges as a dominant theme across different ages and proficiency levels, serving as a primary channel for language acquisition and engagement. This is particularly evident in the response of a student from Greece (Age 17, CEFR B2) who emphasized "learning new vocabulary, learning grammar, learning about English culture," highlighting how visual approaches facilitate comprehensive language learning. The enjoyment of written activities features prominently, with students like one from Poland (Age 16, CEFR C1) expressing satisfaction in "creating my own statements in a foreign language," demonstrating how written expression provides a means of confident language production. Interest in cultural aspects emerges as a significant motivator, suggesting that deaf and hard of hearing students view language learning not merely as linguistic acquisition but as a gateway to broader cultural understanding. The appreciation of interactive exercises, particularly those that do not rely heavily on auditory input, indicates that these students actively engage in language learning when activities are appropriately adapted. Notably, these preferences appear consistent across different educational settings and all three countries (Greece, Germany, Poland), suggesting that the enjoyment patterns are more closely tied to the nature of Deafness/ Hard of Hearing itself rather than specific educational contexts. This understanding has important implications for pedagogical approaches, suggesting that enjoyment in language learning for these students is maximized when visual and written elements are prominently featured while maintaining interactive and culturally rich content.

4.4.2 Making students' voices heard

"Learning new vocabulary, learning grammar, learning about English culture."

Age: 17 | CEFR: B2 | Greece | Secondary School

"I like creating my own statements in a foreign language."

Age: 16 | CEFR: C1 | Poland | Secondary School

"I like watching films with subtitles."

Age: 12 | CEFR: A2 | Poland | Primary School

4.4.3 What is the greatest challenge in EFL? (Q2)

Students who are deaf or hard of hearing encounter specific challenges in language learning that are directly related to the auditory aspects of language acquisition. Significant pronunciation challenges emerge as a fundamental barrier, evidenced by a student from Poland (Age 17, CEFR C1) who explained “For me a big problem is pronunciation. You write a different thing—and pronounce a different one,” highlighting the disconnect between written and spoken forms when auditory input is limited. Difficulties with listening comprehension represent a core challenge, illustrated by another student (Age 12, CEFR A2) noting “sometimes the recordings are blurry and then I cannot hear everything,” demonstrating how traditional listening activities in language learning can pose significant barriers. Problems with oral communication are particularly prominent, as students struggle with producing spoken language without full access to auditory feedback. This is further complicated by challenges with accent variation, where different speakers’ pronunciations create additional layers of complexity in comprehension. These findings are consistent across Greece, Germany, Poland and different types of school, suggesting these challenges are inherent to Deafness/ Hard of Hearing rather than context-dependent. Notably, while higher CEFR levels indicate overall language progression, these fundamental challenges persist, requiring ongoing adaptations and alternative approaches. The data particularly emphasizes how visual aids and written materials become crucial compensatory strategies, with students often relying more heavily on visual and textual input to overcome auditory limitations. This pattern of difficulties underscores the importance of developing specialized teaching approaches that maximize visual learning channels while providing appropriate support for oral language development.

4.4.4 Making students’ voices heard

“For me a big problem is pronunciation. You write a different thing—and pronounce a different one.”

Age: 17 | CEFR: C1 | Poland | Secondary School

“Sometimes the recordings are blurry and then I cannot hear everything.”

Age: 12 | CEFR: A2 | Poland | Primary School

“Understanding different accents, making translation mistakes.”

Age: 17 | CEFR: B2 | Germany | Secondary School

4.4.5 What are your future plans with foreign languages? (Q3)

Students who are deaf or hard of hearing demonstrate sophisticated and well-defined aspirations for their language learning futures. The focus on written communication skills emerges as a primary theme, exemplified by a student from Poland (Age 16, CEFR B2) who expressed “I want to use English fluently, write in English fluently,” indicating a strategic emphasis on written proficiency as a key pathway to professional success. Interest in international work features prominently in their aspirations, with students viewing their language skills as a bridge to global opportunities despite auditory

challenges. This is particularly evident in responses from older students (ages 16–17) who show awareness of how written English proficiency can compensate for oral communication challenges in professional settings. Academic aspirations emerge strongly across the data, with students like one from Poland (Age 17, CEFR C1) showing interest in sign language and international communication, noting “I like learning other international language—International Sign,” demonstrating how students envision multiple pathways for international communication. Travel goals, while present, are often framed within the context of written and visual communication strategies, suggesting a pragmatic understanding of how to navigate international experiences with Deafness/ Hard of Hearings. Notably, these future aspirations appear particularly well-developed among students with higher CEFR levels (B2–C1) and those in secondary education, indicating how academic progress influences the scope and specificity of future language use plans. The data reveals that these students view their Deafness/Hard of Hearing not as a limitation but as a factor that shapes their approach to achieving their international and professional goals.

4.4.6 Making students’ voices heard

“I want to use English fluently, write in English fluently.”

Age: 16 | CEFR: B2 | Poland | Secondary School

“I like learning other international language—International Sign.”

Age: 17 | CEFR: C1 | Poland | Secondary School

“I want to study English as my major.”

Age: 17 | CEFR: B2 | Poland | Secondary School

4.5 Students with specific learning difficulties

4.5.1 What do you enjoy in EFL? (Q1)

Students with specific learning difficulties demonstrate distinct preferences in their language learning enjoyment, with a clear inclination toward dynamic and multisensory learning experiences. The preference for interactive learning emerges as a dominant theme, evidenced by a student from Poland (Age 11, CEFR A1) who expressed enjoyment in “Tasks, especially on educational platforms and through play,” highlighting how active engagement enhances learning pleasure. The enjoyment of game-based activities features prominently across different age groups and proficiency levels, suggesting that gamification provides a motivating framework that helps overcome learning barriers. For instance, another student (Age 13, CEFR A2) noted enjoying “when we read texts and I learn interesting things,” indicating how interactive approaches can make even traditional reading activities more engaging. The appreciation of multimedia approaches is particularly notable, with students responding positively to learning experiences that combine visual, auditory, and kinesthetic elements. This preference aligns with their need for diverse learning channels to compensate for specific learning challenges.

Interest in practical applications emerges as a significant motivator, with students showing greater engagement when they can connect language learning to real-world uses. Notably, these enjoyment patterns appear consistent across different educational contexts and countries, suggesting that the preference for interactive, multisensory learning is intrinsically linked to the nature of specific learning difficulties rather than external factors. This understanding has important implications for pedagogical approaches, indicating that enjoyment in language learning for these students is maximized when activities are interactive, varied, and practically oriented, while maintaining a structured framework that supports their learning needs.

4.5.2 Making students' voices heard

"Tasks, especially on educational platforms and through play."

Age: 11 | CEFR: A1 | Poland | Primary School

"I like it when we read some text and then we answer questions related to this."

Age: 13 | CEFR: A2 | Poland | Primary School

"I like listening tasks the most."

Age: 14 | CEFR: A1 | Poland | Primary School

4.5.3 What is the greatest challenge in EFL? (Q2)

Students with specific learning difficulties experience a complex set of challenges that primarily center around cognitive processing and retention aspects of language learning. Memory and retention challenges emerge as a fundamental barrier, exemplified by a student from Poland (Age 11, CEFR Pre-A1) who stated "I cannot remember words. I mix letters," highlighting how basic vocabulary acquisition becomes a significant hurdle. Difficulties with grammar rules present as a persistent challenge, illustrated by another student (Age 16, CEFR A2, Germany) who noted "Learning grammar is difficult. I have to approach this properly," suggesting that the abstract and rule-based nature of grammar poses particular challenges for these learners. Problems with vocabulary retention appear as a recurring theme across different age groups and CEFR levels, with students reporting that words are "escaping from my mind, even if I learned them earlier," indicating how the consolidation of new vocabulary remains challenging even with repeated exposure. Processing speed issues emerge as a significant barrier, affecting students' ability to engage with real-time language activities and respond effectively in classroom situations. This is particularly evident in test situations, where students report needing extended time to process and respond to language tasks. Notably, these challenges persist across different educational contexts and countries, suggesting they are inherent to the nature of specific learning difficulties rather than context-dependent. The data also indicates that while students may develop coping strategies as they advance in their language learning journey, these fundamental challenges continue to impact their learning experience, requiring ongoing support and accommodations.

This pattern of difficulties emphasizes the need for structured, repetitive learning approaches that provide ample time for processing and practice, while incorporating multiple learning modalities to support retention and understanding.

4.5.4 Making students' voices heard

"I cannot remember words. I mix letters."

Age: 11 | CEFR: Pre-A1 | Poland | Primary School

"Learning grammar is difficult. I have to approach this properly."

Age: 16 | CEFR: A2 | Germany | Secondary School

"Sometimes I do not understand certain commands."

Age: 11 | CEFR: A1 | Poland | Primary School

4.5.5 What are your future plans with foreign languages? (Q3)

Students with specific learning difficulties demonstrate notably varied perspectives regarding their future language use, characterized by a wide spectrum of aspirations and confidence levels. Mixed levels of aspiration emerge as a prominent theme, ranging from ambitious goals to more hesitant outlooks, as evidenced by contrasting responses across the data. For instance, while one student from Poland (Age 11, CEFR A1) expressed optimistic travel aspirations stating "I want to learn English so that one day I can travel," another (Age 13, CEFR A1) showed more uncertainty, admitting "I do not have plans. I know I should learn English when I finish school but I do not think so." The focus on basic communication emerges as a common thread, with students often emphasizing practical, everyday language use rather than academic or professional ambitions. Travel-related goals feature prominently in their future plans, suggesting that students can envision concrete, tangible applications for their language skills despite their learning challenges. However, uncertainty about future use appears as a significant theme, with many students expressing ambivalence or hesitation about their long-term engagement with the language. This uncertainty seems particularly pronounced among students with lower CEFR levels and younger age groups, suggesting that confidence in language ability influences future aspirations.

4.5.6 Making students' voices heard

"I want to learn English so that one day I can travel."

Age: 11 | CEFR: A1 | Poland | Primary School

"I do not have plans. I know I should learn English when I finish school but I do not think so."

Age: 13 | CEFR: A1 | Poland | Special Needs School

"I would like to go abroad on a trip in the future."

Age: 11 | CEFR: A1 | Poland | Primary School

4.6 Physical motor impairment

4.6.1 What do you enjoy in EFL? (Q1)

Students with physical/motor impairments demonstrate distinct patterns of enjoyment in language learning that are closely tied to accessibility and successful engagement. The enjoyment of digital activities emerges as a prominent theme, evidenced by a student from Germany (Age 12, CEFR A2) who expressed enthusiasm for “online games to revise English,” highlighting how technology provides accessible and engaging learning pathways. Interest in communication aspects features strongly in their responses, with students particularly valuing opportunities to interact and express themselves despite physical limitations. This is exemplified by a student from Poland (Age 11, CEFR Pre-A1) who emphasized “Getting to learn new languages, being able to communicate with others,” indicating how language learning represents a pathway to broader social interaction. Appreciation of interactive tasks emerges as significant, particularly when these tasks are adapted to accommodate their physical needs, allowing full participation in learning activities. Motivation from learning progress appears as a crucial factor in their enjoyment, with students expressing satisfaction in seeing their own advancement in language acquisition. The data also indicates that enjoyment often increases when activities are designed to be inclusive and accessible, allowing students to participate fully despite their motor challenges. This understanding has important implications for pedagogical approaches, suggesting that enjoyment in language learning for these students is maximized when activities are digitally accessible, communication-focused, and provide clear evidence of progress while maintaining appropriate physical accommodations.

4.6.2 Making students’ voices heard

“Online games to revise English.”

Age: 12 | CEFR: A2 | Germany | Primary School

“Getting to learn new languages, being able to communicate with others.”

Age: 11 | CEFR: Pre-A1 | Poland | Special Needs School

“I like learning new words and learning new things.”

Age: 14 | CEFR: A1 | Germany | Special Needs School

“No one has ever asked me that before. Yeah I do not know, when we have for example to fill-in the words. We must complete the sentences and then we get the ones to listen to, and then we have to see whether we have completed the sentences correctly or whether there is something else written and so on. That is what I like best. The part about checking whether the sentence is completed or not.”

Age: 21 | CEFR: B2 | Slovenia | Secondary school

“I do not know, because that’s the way we were taught in primary school. So, the more times you knew, the more creative you could

be when you were speaking with someone, writing something, the more you could understand films as well, that kind of thing. So, learning new things, well.”

Age: 16 | CEFR: B1 | Slovenia | Special Needs School

4.6.3 What is the greatest challenge in EFL? (Q2)

Students with physical/motor impairments face distinct challenges in language learning that are primarily centered around the physical aspects of language production and task completion. Physical writing challenges emerge as a fundamental barrier, clearly illustrated by a student from Germany (Age 12, CEFR A1) who expressed “I find it difficult to use the pencil to write long texts,” highlighting how the mechanical aspects of writing can significantly impede language production. Pace-related difficulties represent a persistent concern across different educational contexts, evidenced by a student from Poland (Age 11, CEFR A2) noting “Too much learning. Too quick pace of learning,” indicating how standard classroom tempos may not align with their physical capabilities. Fatigue issues appear as a significant factor affecting sustained engagement in learning activities, with students reporting decreased performance and increased difficulties as lessons progress due to physical exertion. Material accessibility problems manifest in various ways, from difficulties manipulating traditional learning materials to challenges with classroom equipment setup. The data also indicates that while higher CEFR levels suggest overall language progression, these fundamental physical challenges persist, requiring ongoing adaptations and support. This pattern of difficulties emphasizes the critical importance of providing appropriate accommodations and assistive technologies while considering the physical demands of learning activities. The findings also suggest that these challenges often intersect and compound each other, with physical fatigue, for instance, further impacting writing abilities and pace of work, highlighting the need for comprehensive support strategies that address multiple aspects of physical accessibility in language learning.

4.6.4 Making students’ voices heard

“I find it difficult to use the pencil to write long texts.”

Age: 12 | CEFR: A1 | Germany | Primary School

“Too much learning. Too quick pace of learning.”

Age: 11 | CEFR: A2 | Poland | Primary School

“Different words, accent, the fact that they are written differently.”

Age: 16 | CEFR: A2 | Germany | Secondary School

“When we were writing a test, because halfway through you are so tired that you forget about the endings—the s’s, that’s it. The others do not.”

Age: 16 | CEFR: B1 | Slovenia | Special Needs School

4.6.5 What are your future plans with foreign languages? (Q3)

Students with physical/motor impairments demonstrate remarkably ambitious and concrete future aspirations in their language learning trajectories, with a strong emphasis on professional development and global engagement. Career-focused aspirations emerge as a dominant theme, strikingly illustrated by specific vocational goals, as evidenced by a student from Poland (Age 11, CEFR A2) who confidently expressed “I want to be a footballer and play in foreign clubs,” and another student (Age 13, CEFR A1) who stated “I want to develop the language because I want to be a programmer.” These career-oriented goals suggest that students view their physical impairments not as limitations but as factors to consider in their professional planning. Interest in international opportunities features prominently across different age groups and CEFR levels, with students actively envisioning themselves in global contexts despite physical challenges. Travel goals appear consistently in their responses, with students like one from Germany (Age 11, CEFR Pre-A1) expressing the desire to “fly to the US and talk to people,” indicating how language proficiency is seen as a key to mobility and independence. Communication-oriented plans emerge as a unifying thread, with students viewing language skills as essential tools for achieving their broader life goals. Notably, these future aspirations appear particularly well-defined and pragmatic, with students demonstrating clear awareness of how language proficiency can help them overcome potential physical barriers to achieve their international and professional ambitions. This pattern of responses indicates a high level of self-efficacy and future-oriented thinking among students with physical/motor impairments, suggesting that their physical challenges may influence the specific strategies they envision for achieving their goals but do not limit their aspirations.

4.6.6 Making students’ voices heard

“I want to be a footballer and play in foreign clubs.”

Age: 11 | CEFR: A2 | Poland | Primary School

“I want to develop the language because I want to be a programmer.”

Age: 13 | CEFR: A1 | Poland | Special Needs School

“Would like to fly to the US and talk to people.”

Age: 11 | CEFR: Pre-A1 | Germany | Primary School

4.7 Limitations

A significant limitation of this study lies in its sample size and distribution characteristics across the four participating European countries. The total sample size ($N = 95$) presents challenges for robust statistical analysis, particularly when disaggregated by country and disability type. The uneven distribution of participants across countries (Greece: 16, Germany: 24, Slovenia: 23, Poland: 32) creates inherent difficulties in making meaningful cross-national comparisons and potentially introduces bias in the overall findings. This limitation becomes particularly acute when examining specific disability

subgroups within each country. For instance, and one deaf/hard of hearing in Slovenia who also had physical impairment, or the complete absence of certain disability types in some countries (such as no visual impairments in Germany), creates substantial gaps in the cross-national comparative analysis. The small subgroup sizes also limit the statistical power of analyses comparing different disability types and their experiences, potentially masking significant patterns or relationships that might be visible in a larger, more balanced sample.

The study’s methodological approach presents several significant limitations that affect both its internal and external validity. While the study combines interviews with quantitative data from the Foreign Language Enjoyment (FLE) scale’s Likert questions, providing both qualitative insights and quantitative measures of PE and LA, it may still not fully capture the multifaceted nature of students’ foreign language learning experiences. The methodology could benefit from additional data sources such as classroom observations and teacher perspectives to provide further triangulation and a more comprehensive understanding of the phenomena under study. The cross-sectional design of the research offers only a momentary glimpse into students’ experiences, failing to capture the dynamic nature of language learning and how students’ engagement and attitudes might evolve over time. While the study focused on primary and secondary education, Slovenia’s sample included four students aged 18–25 who were still attending secondary special education schools. Although their inclusion maintains the study’s focus on secondary education, their age difference could introduce some variability in perspectives compared to younger secondary students. Additionally, the pragmatic decision to aggregate autism spectrum disorder cases with specific learning difficulties, while necessary for statistical analysis, potentially obscures important distinctions between these fundamentally different types of learning needs, possibly oversimplifying the unique challenges and experiences of each group.

5 Discussion

The findings of this study reveal both an inspiring story of resilience and a call to action in foreign language education. Across all groups, students maintained remarkably positive attitudes toward language learning even when facing significant engagement challenges, as evidenced by LA scores consistently exceeding PE scores. This pattern tells an important story about our students’ determination, but also about where our educational system needs improvement.

Consider the Visual Impairment group, where students showed exceptionally high LA despite moderate engagement levels. These students believe strongly in the value of learning English, even when they cannot easily access learning materials or participate fully in visual aspects of lessons. Similarly, while students with Mobility Impairments showed the strongest connection between their attitudes and engagement ($r = 0.674$), suggesting that when they can participate fully, they thrive, students with Learning Difficulties demonstrated more variable engagement patterns while maintaining positive attitudes – a testament to their resilience in the face of cognitive processing challenges. The findings for students who are Deaf or Hard of Hearing highlight another crucial aspect: while these students maintain positive attitudes, their engagement patterns showed no significant correlation with these attitudes, suggesting that traditional auditory-based language learning approaches may be creating unnecessary barriers.

This disconnect between wanting to learn and being able to fully participate points to a systemic issue rather than student limitations.

What makes these findings particularly compelling is the diversity of future aspirations we uncovered—from dreams of studying abroad to becoming programmers or athletes. These students do not let their challenges define their dreams. Instead, their consistently positive attitudes across all groups, despite varying engagement levels, suggest that the real challenge lies not in students' willingness or ability to learn, but in our capacity to create truly inclusive learning environments that can transform these positive attitudes into full engagement. The real question is: are we doing enough to help them reach these goals?

Data availability statement

The datasets presented in this article are not readily available because the dataset belongs to the partners of the consortium and it will be destroyed in 3 years after the completion of the project. Requests to access the datasets should be directed to mkaratsiori@gmail.com.

Ethics statement

The studies involving humans were approved by Research Committee of University of Macedonia (Greece) and the Research Ethics Committee of John Paul II Catholic University of Lublin (Poland). For the University of Education Heidelberg and University of Ljubljana, the institutional requirements related to research ethics were met. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin.

Author contributions

MK: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. TL: Methodology, Writing – review & editing. ED-z: Data curation, Writing – review & editing. KV: Data curation, Writing – review & editing. MKB: Data curation,

Writing – review & editing. MP: Data curation, Methodology, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The authors declare that no Generative AI was used in the creation of this manuscript.

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