Chapter 2

Empowering Language:
Fostering Inclusion and Growth Through Assistive Intelligence for Students With Language Disorders

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ABSTRACT

Language disorders, spanning challenges in comprehension, expression, and development, cast a pro-found influence on various aspects of students' educational experiences, affecting academic achievement, social interactions, and overall learning trajectories. This chapter delves into the complexities of language disorders, untangling their diverse manifestations, which include expressive, receptive, and mixed receptive-expressive language disorders. The implications ripple across academic domains, erecting barriers to reading, writing, and comprehension. Moreover, the socio-emotional domain is intertwined with these challenges, fostering isolation, self-doubt, and hindered communication. This comprehensive understanding of the multifaceted impacts of language disorders becomes the foundation upon which truly inclusive educational environments are forged. Guided by ethical imperatives and a commitment to equity, this chapter explores the potential of assistive intelligence technologies as a catalyst within inclusive education.

INTRODUCTION

This chapter delves into the powerful potential of assistive intelligence in fostering linguistic empowerment for students with language disorders within inclusive education. The concept of linguistic empowerment holds immense significance as it serves as a conduit for students to cultivate effective communication skills, self-expression, and meaningful engagement in their educational endeavors (Henry 2021). As language forms the substratum of learning, social interactions, and self-identity, the challenges faced by students grappling with language disorders in comprehending, utilizing, and comprehensively under-

standing language can have far-reaching implications on their academic journey and overall well-being. Recognizing linguistic empowerment as a pivotal objective within inclusive education, the aspiration is to equip students with language disorders with the requisite tools and support to unlock their untapped communicative potential, thus fostering a more equitable and enriching educational approach (Belda-Medina 2022). In this pursuit, the emergence of assistive intelligence emerges as a formidable ally, bearing the promise of great advancements. By identifying the capabilities of AI-driven technologies like speech recognition software, natural language processing applications, and text-to-speech synthesis tools, teachers can architect inclusive learning environments that not only nurture language development but also catalyze linguistic empowerment. These innovative technologies extend tailored assistance, offer alternative communication conduits, and augment students' capacity to comprehend, express, and engage with peers and teachers (Pegrum, Hockly & Dudeney 2022).

Inclusive education, a cornerstone of an equitable society, fervently seeks to offer equal opportunities to every student, irrespective of their unique needs and abilities (Medina-García, Doña-Toledo & Higueras-Rodríguez 2020). Amid this pursuit, students grappling with language disorders encounter distinctive obstacles that hinder their holistic participation and curtail their academic progress. Hindrances in communication, language assimilation, and self-expression profoundly impede their scholastic experiences (McGregor 2020). Yet, the rapid strides taken in the realm of Assistive Intelligence (AI) shine a beacon of hope, ushering in diverse solutions to champion and bolster these students. In the inclusive education paradigm, each student embodies distinct strengths, capabilities, and latent potential. The strategic integration of assistive intelligence, guided by ethical considerations, emerges as a catalyst to unearth these latent capabilities and ignite linguistic empowerment. It amplifies voices, and furnishes personalized interventions tailored to address the specific needs of students grappling with language disorders (Efthymiou 2023a). By embracing the latent metamorphic prowess of assistive intelligence, teachers can embolden students to navigate their educational odyssey with confidence, while actively contributing to the learning community.

This chapter embarks on a comprehensive exploration of the ethical underpinnings, pragmatic applications, and illustrative case studies that exemplify the catalytic role of assistive intelligence in nurturing language development and fostering profound linguistic empowerment. By underscoring the cardinal importance of linguistic empowerment and the agency wielded by assistive intelligence, our intention is to kindle inspiration among teachers, researchers, and policymakers to fully embrace these groundbreaking strides and orchestrate inclusive environments that not only nurture but also amplify the communicative potential inherent within every student grappling with language disorders.

THEORETICAL BACKGROUND

The intricate realm of education for students with language disorders reveals a landscape fraught with complexities, where the impact of these conditions resonates across every facet of their academic journey. These language disorders, spanning a spectrum of impediments in language comprehension, expression, and development, cast an indelible shadow over the educational experiences of these students, profoundly shaping their academic attainments, social interactions, and overall learning trajectories (Ziegenfusz et al. 2022). Delving into the heart of language disorders becomes an imperative foundational step in constructing inclusive environments adept at accommodating the unique needs of these students. Expressive language disorders, receptive language disorders, and mixed receptive-expressive language disor-

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