



FACTORS ARISING FROM THE UTILIZATION OF ARTIFICIAL INTELLIGENCE AND LARGE LANGUAGE MODELS IN SPECIAL EDUCATION AND TRAINING

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Abstract:

This literature review aims to create a connection between Special Education and Training (SET) with Artificial Intelligence (AI), specifically focusing on machine learning language models. These systems analyze language structures and rapidly generate text that closely resembles human expression. While AI tools have been present since the last century, global technological and research interest in AI experienced resurgence in November 2022 with the release of ChatGPT, a machine learning language model – “chatbot”. The introduction of this tool raised expectations for its potential in educating individuals with Special Educational Needs and/or Disabilities (SENDs). However, the literature also highlights concerns about potential risks and challenges associated with the widespread use of such tools in education. This paper explores the intersection of Special Education and Training goals and Large Language Models (LLM), presenting in the results the potential benefits and risks that may emerge from this interaction.

Keywords: artificial intelligence, machine learning, language-based machine learning models, Special Education and Training [SET], large language models

1. Introduction

The literature study delves into the pedagogical use of AI applications, particularly large language models, in Special Education and Training (SET). Coined in 1956, the term "Artificial Intelligence" (AI) refers to the simulation of human behaviors by machines

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(Zhang & Lu, 2021). Initially associated with encoding human thought to make machines react similarly to humans, AI evolved in the 2010s to encompass the processing of vast electronic data, known as "machine learning." Global interest in AI and its potential increased in November 2022 with the release of the "ChatGPT" application. This tool, categorized under AI tools called "Large Language Models," (LLM) can process large volumes of data and rapidly generate text that closely resembles human expression. The term "machine learning language models" denotes systems capable of analyzing language structures and engaging with users, producing plausible and convincing texts (Zhang & Lu, 2021).

It is a well-established fact that New Technologies (NT) have become an integral part of everyone's lives (Stokel-Walker, 2023; Jimoyiannis, 2017, 2019; Mastrothanas et al., 2018). Consequently, New Technologies are embedded in the everyday lives of both teachers and students with Special Educational Needs and/or Disabilities (SENDs). Special Education and Training strives to successfully include these students, necessitating the provision of an individualized program of teaching interventions (Drossinou & Alexopoulos, 2022, 2023). In other words, there is a need for the education provided to be adapted and differentiated to the individuality of each student. This objective is also reflected in the pedagogical tool TISIPfSENDs, often utilized in SET and linked to successful interventions. TISIPfSENDs stands for Targeted Individually Structured and Inclusive Intervention Programs for Students with Special Educational Needs, essentially encapsulating the core goals of Special Education. TISIPfSENDs underscores the importance of individualization and differentiation. According to this pedagogical tool, which is founded on the principles of teamwork and learner-centeredness, the instructional goal of the intervention is segmented into individual steps and its achievement is determined by individualization according to the student's interests, age, learning readiness, and levels of autonomy. Consequently, Special Education and Training (SET) curricula aim to formulate differentiated and individualized instructional interventions, as well as to adapt the learning environment to the special educational needs of students (Drossinou Korea, 2017, 2020, 2023; Christakis, 2000, 2011, 2023).

New Technologies are frequently used to fulfill the objectives of Special Education and Training to facilitate the successful inclusion of students with SENDs. The recent introduction of ChatGPT and the opportunities it presents have generated expectations, along with concerns about its application in Special Education. Consequently, this study endeavors to bridge the gap in the literature by connecting machine-learning language models with Special Education and Training. Early recognition of the potential benefits, as well as the possible risks associated with the use of such tools in education, especially within SET, can be advantageous for the broader educational community. In any case, the rapid development of AI applications cannot leave education, and therefore Special Education, unaffected (Marino et al., 2023).

2. Purpose, Research Questions and Methodology

Given the lack of research connecting SET to Large Language Models like ChatGPT, this paper aims to create a research link between Special Education and Training with machine learning language models in the literature. The research explores what factors express the potential benefits and risks of using these tools in SET (Drossinou, 1999, 1997). Therefore, a literature review of studies linking LLM to SET's aims was attempted. English-language journal articles were searched in major search databases (e.g. Google Scholar, Scopus) from November 2022 (the time of ChatGPT's release) to December 2023, with keywords - key phrases such as "LLM / Large Learning Models / Special Education / special learning difficulties / ChatGPT". A total of 29 studies were selected.

2. Literature Review

2.1 Potential Benefits and Expectations

A primary factor for potential benefits identified in the literature relates to the use of these tools for diagnosing specific learning difficulties and/or disabilities. As noted by Chen et al. (2022), AI applications could assist in early identification of autistic behaviors. In terms of machine learning language models functioning as diagnostic tools, it's noteworthy to mention the research conducted by Balas & Ing (2023) in the field of medicine. Specifically, ChatGPT was given ten cases (N=10) of patients with eye diseases. The study's results showed that ChatGPT correctly diagnosed 9 out of 10 cases, and all its diagnoses were accurate in lists of differential diagnoses. In a similar study by Hirosawa et al. (2023) in Japan, ChatGPT demonstrated a diagnosis success rate exceeding 80% in 52 (N=52) total case studies. Transitioning to a comparative analysis of responses from different language machine learning models, such as ChatGPT and Google's Bard, Caruccio et al. (2024) also focused on the potential these tools can offer in providing diagnoses. Similarly, Kuroiwa et al. (2023), in their research on the use of language models for diagnosis, also mention their use as self-diagnostic tools. In a study by Koga et al. (2023) two such models (ChatGPT and Google Bard) were given to 25 case studies of patients with neurodegenerative disorders from a clinic in Florida, USA. The aim of the study was to follow up a comparative study of the diagnoses made by the apps versus those made by physicians. The ChatGPT-3.5 version correctly diagnosed 76% of cases, ChatGPT-4 correctly diagnosed 84%, and Google Bard 76%. These findings, the researchers state, are encouraging for the use of AI tools in diagnosis services in neuropathology.

Similar results to those of the above studies are also found in other recent studies, such as that of Rizwan & Sadiq (2023), where ChatGPT correctly diagnosed 8 out of 10 case studies. Different results were seen in Horiuchi et al.'s (2023) study in the field of Neuroradiology, where 100 case studies were given and ChatGPT correctly diagnosed only half of them (50%), with even lower success rates in brain-related cases. Focusing the literature review, however, on research exclusively on SET and the use of machine

learning language models as diagnostic tools, there is an absence of relevant research from 2022 onwards, when ChatGPT emerges and redefines the potential of these AI assistant/robot ("chatbot") applications. In contrast, several studies on the use of machine learning - AI applications in the earlier period are identified, with most of them referring to their use for diagnosing students with Autistic Spectrum Disorders (ASD) (Khan et al., 2018; Maenner et al., 2016; Liao et al., 2022). In a study by Dutt et al. (2022), the combined application of an "intelligent teaching system", that is, a personalised computer system for each student, with AI applications in SET, is proposed in order to identify learning difficulties such as dyslexia, dysgraphia, and dyscalculia. Twenty-four students (N=24) with or without learning difficulties participated in the study, and neural network classifiers were utilized to identify any learning difficulties. The results of this study demonstrated significant accuracy after the parallel involvement of AI. Therefore, a potential application of machine learning language models in SET could be associated with their use in providing diagnoses. However, this application is not confirmed by recent research exclusively in the field of SET and raises risks that will be extensively analyzed in the next section of this study.

Considering the benefits that NT and AI can have on the social skills of students with SEND and in particular students with neurodevelopmental disorders such as ASD, Bertacchini et al. (2023) in Italy connected a Pepper robot to OpenAI's ChatGPT in order to have a real-time dialogue with the AI robot. The researchers then presented in their study two possible scenarios of a student with ASD interacting with such a robot incorporating ChatGPT and highlighted the need for further research in the field, citing literature benefits and challenges that may arise.

Another factor for potential benefits focuses on providing personalised responses that can help both SET teachers and students with SEND. Essentially, based on research, machine learning language models could be an assistant in the SET field for the educational community. In his research by Zhai (2023) regarding the pedagogical use of ChatGPT in science teaching, he observed that the tool adapted its provided responses when given as information that the lesson was intended for a student with dyslexia and even suggested adapted learning materials for that student. Therefore, he concluded that the recommendations and instructions provided by ChatGPT could be beneficial for students with special educational needs.

Also worth mentioning for potential benefits is the research conducted by Eunhye Choi (2023). Specifically, the researcher examined the beliefs of individuals from higher education (N=71) regarding the role of these applications for people with disabilities in the context of SET through an online questionnaire. As indicated by the results, the majority believed that these applications could primarily benefit individuals with ASD (N=44), multiple disabilities (N=40), intellectual disability (N=38), and special learning difficulties (N=37). The research subjects considered that ChatGPT could assist people with disabilities in their verbal-expressive communication, producing and understanding complex concepts, and generally improving their productivity. Consequently, the above research has unveiled expectations for the pedagogical use of

language-based machine learning models in SET while also highlighting concerns about challenges that will be mentioned below.

Furthermore, the literature connects tools such as ChatGPT to language learning for students with SEND. Specifically, Alenizi et al. (2023) investigated the beliefs of special education teachers in Saudi Arabia regarding teaching English as a foreign language. A mixed-methods study was conducted, involving questionnaires administered to N=199 special education teachers and interviews with N=5 teachers. Positive factors identified from the questionnaires included the positive role that ChatGPT can play in improving students' language skills for language learning. Some teachers noted that their students already exhibited a positive attitude towards this tool based on their experiences thus far. Simultaneously, qualitative analysis of the (N=5) interviews highlighted benefits such as supporting students with SEND in learning a foreign language, enhancing teamwork, and promoting inclusive education.

Encouraging the use of ChatGPT in the teaching of History to students, with or without specific learning difficulties, is the focus of the study by Jauhiainen & Guerra (2023). The study involved N=110 primary school students aged 8 to 14 years old, comprising 50 students from the 4th grade, 32 students from the 5th grade, and 28 students from the 6th grade. The tests were conducted in Uruguay, spanning four classes in two schools in the country, with Spanish as the language of instruction. Students utilized laptops, and ChatGPT (ChatGPT-3.5 version) provided all the content, including text, figures, and exercises used in teaching the lesson. As the results indicated, the majority of students appreciated the provision of pedagogical materials using AI, and it appeared that the inclusion of such tools can stimulate interest and lead to the development of their skills. Although there is limited literature on the use of machine learning language models such as ChatGPT in SET, early studies link these systems to expectations of increased teaching effectiveness and student interest (Yu, 2023; Ivanov & Soliman, 2023).

Alshahrana (2023), conducting a review of 18 studies on the potential benefits of ChatGPT in education, points out that it can help to engage and motivate students, as well as promote personalized teaching to support inclusive education and the demand for equality in the education of students with SEND without limitations and exclusions. Overall, the studies reviewed highlight the use of such language-based machine learning models to enhance student engagement and personalize their learning experience to promote accessible inclusive education. Rane (2023) also concludes the above findings, stating that a key advantage of these applications is the speed with which they produce human-like responses. These tools can provide personalised responses, offering feedback and question-solving to students with diverse learning needs and enhancing teamwork. That is, language models can help students with SEND overcome their language difficulties, but also teachers can create personalised inclusive learning environments and pedagogical materials.

Attempting a literature review of research on the pedagogical benefits of ChatGPT, Adiguzel et al. (2023) note that such tools can help by proposing personalised

learning environments for students with and without learning difficulties, highlighting that AI tools have been research linked to positive outcomes for students with dyslexia and ASD. Furthermore, moving on to a literature review of research to identify the benefits of using machine learning language models in education, Baidoo-Anu & Owusu Ansah (2023) point out that these applications could be a virtual assistant teacher outside the classroom for students with special learning difficulties, providing answers to their questions and explaining complex concepts. Indeed, they note, as these language tools are based on written text, their use could benefit students with learning and language difficulties. In another literature review by Karakose & Tülübaş (2023), among the benefits that ChatGPT can offer, the provision of personalised responses and differentiated pedagogical material, as well as the enhancement of students' skills such as teamwork, communication, creativity, and critical thinking are highlighted. As they note, the above factors can help students with SEND, but SET teachers can also be helped with ideas, lesson plans, and didactically differentiated pedagogical materials adapted to their students' special educational needs, and could also help with student assessment.

Focusing in particular on special education teachers, it is worth mentioning Rakap's (2023) research in Turkey. N=22 early career Special Education teachers participated in the study and were asked to develop a special education intervention program for 5 students with ASD. As shown by the results, teachers who used ChatGPT as their assistant created a qualitatively improved program, with more appropriate instructional intervention goals, and spent less time than teachers who participated in the study and did not use ChatGPT. Therefore, such tools can save time and can be a valuable resource for SET teachers.

Table 1: Potential benefits and expectations

Potential benefits and expectations	Studies
Help with diagnoses	Chen et al. (2022), Balas & Ing (2023), Hirose et al. (2023), Caruccio et al. (2024), Kuroiwa et al. (2023), Koga et al. (2023), Rizwan & Sadiq (2023), Horiuchi et al. (2023), Khan et al. (2018), Maenner et al. (2016), Liao et al. (2022), Dutt et al. (2022)
Personalization and help for students and teachers	Choi (2023), Zhai (2023), Alshahrana (2023), Rane (2023), Adiguzel et al. (2023), Baidoo-Anu & Owusu Ansah (2023), Karakose & Tülübaş (2023), Rakap's (2023)
Increasing students' skills (social, writing skills, communication, and creativity).	Bertacchini et al. (2023), Choi (2023), Alenizi et al. (2023), Jauhiainen & Guerra (2023), Rane (2023), Baidoo-Anu & Owusu Ansah (2023), Karakose & Tülübaş (2023)
Teamwork and inclusion	Alenizi et al. (2023), Alshahrana (2023), Rane (2023), Karakose & Tülübaş (2023)
Increasing students' interest	Jauhiainen & Guerra (2023), Yu, (2023), Ivanov & Soliman (2023)
Learning foreign languages	Alenizi et al. (2023)

2.2 Potential Risks and Concerns

Despite the encouraging and promising benefits of using language models in SET, the applications of AI are accompanied by several concerns about potential threats. In the aforementioned study by Alenizi et al. (2023), special education teachers (N = 199) teaching English as a foreign language also expressed some concerns. In particular, they seem to be concerned about whether ChatGPT can be an appropriate tool to support their students' individualized needs, how time-consuming it can be to use, their ability to use it, and the lack of resources and technological access. In Choi's (2023) research regarding expectations of potential benefits and risks of the pedagogical use of ChatGPT in SET, teachers expressed concerns about challenges in areas such as (1) limited digital accessibility, (2) difficulty in use and understanding, (3) addiction-abuse, and (4) accuracy of information provided. This implies that since ChatGPT relies on a certain database when it lacks necessary information, it may provide incorrect information. Moreover, it needs to be pointed out that this is an application not intended exclusively for educational use and therefore has not undergone appropriate modifications to ensure digital accessibility for people with SEND.

Furthermore, in a literature review, Baidoo-Anu & Owusu Ansah (2023) point out those tools such as ChatGPT can also have a negative effect on education. Among the potential risks, they mention factors such as lack of emotional intelligence and human interaction, the difficulty for the machine to understand the style and content of the conversation, bias against groups due to the biased texts they may have in their database, and where they derive their responses from, lack of creativity, original expression and personalisation due to mechanistic and formalised responses, as well as ethical issues such as the protection of the privacy of conversational. According to Baidoo-Anu & Owusu Ansah (2023), the above negatives could also affect students with SEND. Particular reference is made by these researchers to the provision of incorrect answers, citing as an example that ChatGPT often makes up information, such as bibliographic references, which it presents as true. In conclusion, the researchers highlight what the CEO of the company that created ChatGPT, OpenAI, wrote in a post on December 11, 2022, one month after ChatGPT was made available.

According to Baidoo-Anu & Owusu Ansah (2023), Sam Altman described ChatGPT as "*incredibly limited, but good enough at some things to create a misleading impression of greatness. It's a mistake to be relying on it for anything important right now. It's a preview of progress; we have lots of work to do on robustness and truthfulness*". Indeed, as it turns out the first version of ChatGPT was based on information up to 2021, which resulted in the app ignoring anything newer. For this reason, the researchers conclude that special awareness is needed by the educational community when using this tool. They also highlight the risk of students, both with and without learning difficulties, copying identical texts in their homework. This risk is also highlighted by Trust et al. (2023). Therefore, in such a case not only would the literacy skills of students with SEND not be enhanced, but rather undermined.

Similar considerations are expressed in the review by Kasneci et al. (2023). The researchers highlight that ChatGPT draws from a certain database in which there may be texts that are biased against social groups. Therefore, there is a risk that the tool may reproduce stereotypes and biases against students. This risk negates its potential benefits in cases of diagnosis, assessment, or predicting academic performance (Mbakwe et al., 2023; Kasneci et al., 2023). Finally, as ChatGPT draws from a database, which it replicates and adapts its responses by editing language structures to give 'unique' responses to users, the argument for providing personalised responses to students with SEND seems weak.

Although Alshahrana's (2023) literature review mentioned above highlighted the benefits of using language models in SET, the researcher concludes with some points that need consideration. Firstly, the current research reporting favorable reviews of the benefits of ChatGPT is not extensive enough to draw firm conclusions about its effectiveness in education. More multidisciplinary comparative studies are needed to demonstrate the long-term effects of using such tools. Furthermore, additional investigation is required into students' perspectives on such applications, as well as factors such as the personalization of teaching and motivation. It is emphasized that ethical considerations must be taken seriously to avoid perpetuating biases through such chatbots, and teachers should receive proper training. For SET, Alshahrana (2023) states that more research is needed to explore the effects of language models on students with SEND and digital accessibility issues. And, in the aforementioned review by Rane (2023), challenges to ethical issues such as the digital divide and privacy are mentioned.

Furthermore, in the research by Bertacchini et al. (2023) in which ChatGPT was integrated into a PEPPER robot for students with ASD, extensive reference is made to ethical considerations and caveats that need to be taken into account in such projects. According to the researchers, prior to such an intervention using AI tools, information, transparency, and consent are needed. It is also important to ensure anonymity and protection of personal data. Furthermore, it is noted that in such interventions there is a real risk of addiction to the student with SEND or complete replacement of human interaction and contact. Particularly for students with ASD who have deficits in their social skills, they note, this is an important factor to consider. Among the concerns, the researchers highlight that these tools need to respect the diversity of students with SEND and not perpetuate stereotypes or prejudices against them. Therefore, they conclude on the importance of respecting human rights and constant vigilance throughout the intervention using AI to avoid potential risks. Besides, as they note, SET requires a multidisciplinary collaboration of many scientists and stakeholders, and the creation of an ethical framework could safeguard the dignity and well-being of pupils with SEND in any intervention using AI tools. The provision of incorrect answers by ChatGPT is also highlighted by AlZu'bi et al. (2023), a finding that prompted them to explore alternative tools. These researchers also point out the absence of emotional intelligence and raise privacy concerns.

Although Rakap's (2023) research showed that early career special education teachers created more effective intervention programs with the help of ChatGPT, the researcher points out in her research some limitations and concerns that need to be taken into account. In any case, he underlines that the use of such tools cannot replace the role of the special educator, but needs careful use, following ethical rules of transparency, consent, and information, taking into account risks of personal data leakage. Furthermore, according to Rakap (2023), SET and AI are divergent in the way they operate. Special Education and Training aim at the importance of didactically differentiated and individualized interventions, while AI aims at producing mass and standardized mechanistic responses. Therefore, it concludes that it is useful to have the help of AI, but the final quality of the interventions is the sole responsibility of the individual and the interdisciplinary team working together within SET.

Table 2: Potential risks and concerns

Potential risks and concerns	Studies
Personal data protection and ethical issues	Baidoo-Anu & Owusu Ansah (2023), Alshahrana (2023), Rane (2023), Bertacchini et al. (2023), AlZu'bi et al. (2023), Rakap (2023)
Mechanistic responses and lack of personalisation	Alenizi et al. (2023), Baidoo-Anu & Owusu Ansah (2023), Kasneci et al. (2023), Bertacchini et al. (2023), Rakap (2023)
Bias against groups	Baidoo-Anu & Owusu Ansah (2023), Kasneci et al. (2023), Mbakwe et al. (2023), Bertacchini et al. (2023)
Lack of emotional intelligence and human contact	Baidoo-Anu & Owusu Ansah (2023), Bertacchini et al. (2023), AlZu'bi et al. (2023), Rakap (2023)
Inaccuracy of information	Choi (2023), Baidoo-Anu & Owusu Ansah (2023), AlZu'bi et al. (2023)
Copying and reducing language skills	Baidoo-Anu & Owusu Ansah (2023), Trust et al. (2023)
Addiction	Choi (2023), Bertacchini et al. (2023)
Lack of time, knowledge and access	Alenizi et al. (2023), Choi (2023)

3. Results and Discussion

This study attempted to connect Special Education and Training and Large Language Models in the literature. As shown by the literature review, the relationship between them can be captured in two factors; (1) potential benefits and (2) potential risks of machine learning for SET. The main (1) expected benefits focus on helping with diagnoses of students with SEND, using them as assistants for teachers and students due to the personalised responses they provide, and developing skills such as social, writing skills, and creativity. Furthermore, the review of studies also identified expectations to promote teamwork, inclusive education, increased student interest, and language learning. On the other hand, the main concerns focused on ethical risks and the management of personal data, lack of personalisation due to standardised answers, the perpetuation of stereotypes, lack of emotional intelligence, and the provision of incorrect information.

Finally, fewer reports were found about challenges related to addiction to new technologies, time management, and lack of knowledge and technical equipment.

Moving on to the discussion, it seems that LLMs can offer a lot to Special Education and Training. The launch of ChatGPT has revealed the potential of these tools that certainly cannot leave SET unaffected, as it already has millions of users. However, despite the popularity of these tools and their attractive features, they need to be approached with critical caution and a framework for use needs to be put in place, especially in areas such as SET. Focusing on the reference identified in the review of research on personalisation of teaching, it is noted that this aim is at the core of SET. Indeed, given the contribution of New Technologies to students with SENDs in general, it appears that LLMs can also offer multiple pedagogical benefits. For example, computers are an ideal controlled environment for pupils with ASD as they provide reversible choices without distractions. Therefore, AI applications on the computer or customized robots could help in emotional organization and improve social skills for these students. Furthermore, since LLMs are based on language and written interaction with users, they could also help to develop the language skills of students with special learning difficulties. Furthermore, the present study has shown that these tools could be a competent assistant for students and teachers in terms of organisation, material and time management, provision of personalised material and feedback, and areas that are relevant to the aims of SET.

On the other hand, despite the encouraging and promising benefits, the concerns raised in this study need to be taken seriously. A major drawback of these tools is the absence of emotional intelligence, which can be attributed solely to humans. This weakness is considered important in the pedagogical relationship, as in SET the role of the teacher who mediates is influential in order for the student to cover the required cognitive distance. Especially for students who have difficulties in their social skills and cooperation with others, such as students with ASD, interaction with the teacher and peers is considered a requirement for any successful instructional intervention. Obviously, New Technologies can help SET, but these need to be targeted and utilized when planning instructional intervention steps as part of reading literacy activities. The absence of emotional intelligence and mechanical automation in education is not related to the goals and philosophy of special education.

In addition, ethical and data protection issues are extremely important. Particularly in the case of students with SEND, this data is highly sensitive as it often involves diagnoses and medical reports. Furthermore, expectations of predictions of attainment and behaviour problems need to be critically addressed, as there is a risk that these tools may convey biases against students. Furthermore, although they could benefit students with special learning difficulties in their language skills, there is a risk of copying text in their essays.

Furthermore, a weakness of these models and in particular ChatGPT is the provision of incorrect answers. As ChatGPT draws information from a specific database, it is expected that it cannot answer every question correctly. Nevertheless, the tool

provides answers even if they contain incorrect information, presenting them as true. If the teacher uncritically uses ChatGPT's answers, then confusion may be caused to students with special educational needs.

The above finding casts a shadow over possible expectations for the use of such systems as diagnostic tools. After all, diagnosis in SET is a multidisciplinary process that requires the face-to-face presence of the student. Therefore, such utilization of these machines could prove to be inappropriate and even dangerous, while a possible replacement of the interdisciplinary team negates the context of interdisciplinary differential diagnosis.

4. Conclusion

Therefore, as shown by this theoretical and literature study, LLMs can be a capable ally in the context of SET. Especially since the launch of ChatGPT, the range of possibilities of these tools has expanded significantly. Although AI applications were pre-existing, it seems that ChatGPT came to open a "can of worms", unleashing new possibilities and risks. For this reason, it is emphasized that the teacher needs to be properly trained and informed about potential AI risks and to approach ChatGPT responses critically. Only then, could both teachers and students with SEND benefit.

5. Limitations and Recommendations

Considering that LLM had a particular growth since November 2022 with the launch of ChatGPT, this study was limited to research from the last few years in order to - as far as possible - take into consideration ChatGPT and the changes it has brought with its new capabilities to the field. The study could be extended to investigate general and special education teachers' beliefs about the pedagogical use of large language models in special education interventions.

Acronyms

SET: Special Education and Training,

TISIPfSENDS: Targeted, Individually Structured, and Inclusive Intervention Programs, for Students with Special Educational Needs,

SENDS: Special Educational Needs and/or Disabilities,

LLM: Large Language Models,

ChatGPT: Chat Generative Pre-trained Transformer,

NT: New Technologies,

AI: Artificial Intelligence.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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