



UNLOCKING NVDA: TEACHERS' VIEWS ON ENHANCING LISTENING SKILLS FOR VISUALLY IMPAIRED STUDENTS

Diana Achmad^{1*}, Syamsul Bahri YS², Muhammad Saidinas³

^{1,2,3}Universitas Syiah Kuala, Indonesia

*diana.achmad@usk.ac.id

ABSTRACT

This study aims to investigate the teachers' perceptions towards the implementation of Non-Visual Desktop Access (NVDA) in enhancing English listening skills among visually impaired students at SLB Negeri Banda Aceh, Indonesia. Visually impaired students often face unique challenges in language acquisition due to limited access to visual cues. This research seeks to address this critical issue by examining the implementation of NVDA as an assistive technology to facilitate English language learning done by teachers. The research employed a qualitative method and used semi structure interview as the instrument. Three teachers at this school were chosen as the respondents. The results show that the teachers used this tool because it has benefits. This can motivate students to learn English better, especially listening skills. NVDA is believed to be able to increase the students' ability in mastering English, beside this tool is also free and easy to operate. The findings are expected to inform educational policies and practices to better support the language development of visually impaired individuals and, in turn, promote inclusivity and accessibility in the educational system.

Keywords: listening skills, NVDA, SLB, visually impaired students

1. INTRODUCTION

The contemporary digital era has brought about a significant evolution in the role of media within the realm of education, particularly influencing English language learning. Language educators are increasingly leveraging a diverse range of media tools and resources to enhance teaching methodologies and elevate students' language proficiency levels. This paradigm shift is guided by the Technological Pedagogical Content Knowledge (TPACK) framework, initially proposed by Mishra and Koehler (2006), which underscores the crucial integration of technology, pedagogy, and content knowledge to facilitate effective teaching and learning.

Within the TPACK framework, Technological Knowledge (TK) stands as a pivotal dimension. TK entails educators' adept comprehension of various technologies and their functional capacities, as highlighted by Pappas (2023), emphasizing the understanding and application of technological resources in teaching. Specifically, in the context of English language learning, digital learning media have revolutionized methods for enhancing listening skills through innovative activities, as outlined by Richards and Rodgers (2014), including audio recordings, videos, group discussions, and online comprehension exercises.

However, despite these advancements, there remains a notable gap in the application of digital learning media within special schools, particularly for visually impaired students. Traditional lecture methods persist as the predominant approach to English language instruction, characterized by teacher-centric delivery and limited student engagement, as noted by Gregorius (2017).

Moreover, the issue is compounded by the scarcity of materials and resources tailored to the needs of visually impaired students, leading to inadequate modifications in instruction, as evidenced by studies conducted by Susanto and Nanda (2018). The absence of accessible English language textbooks and learning materials in braille further exacerbates the challenges faced by blind students, necessitating reliance on verbal instructions and assistance from others.

Nevertheless, there is potential for leveraging assistive technologies, such as screen readers, to address these challenges. Screen readers, such as Non-Visual Desktop Access (NVDA) and Job Access with Speech (JAWS), offer visually impaired individuals' alternative means of interacting with computers and technological devices, as elucidated by McCarthy et al. (2013). Research by Wiyanah (2016) has demonstrated the efficacy of



screen readers in facilitating English language learning by converting text into clear speech, thereby enhancing legibility for blind students.

The lack of accessible resources and learning media for blind and visually impaired students often leads to a decline in their academic performance, particularly in the area of listening skill. One possible solution is the use of screen reader technology as a learning media by the teacher. In light of these considerations, recent efforts have been made to introduce screen readers, particularly NVDA, as a digital learning medium for English language instruction in special schools like SLB Negeri Banda Aceh. However, the full potential of this assistive technology remains untapped, necessitating further exploration through qualitative research. Therefore, the aim of this study is to interview teachers implementing NVDA screen readers as a learning medium for English language instruction, particularly focusing on its efficacy for visually impaired students in the classroom. Therefore, this study aims to investigate the teachers' perceptions towards the use of NVDA to improve the listening skills of visually impaired students at one of the special schools in Banda Aceh, Indonesia. Based on the objective above, the research question is formulated as follows: "What are the teachers' perceptions towards the use of NVDA to improve the listening skills of visually impaired students at SLB Negeri Banda Aceh?"

2. METHODS

This qualitative study employed a phenomenological approach to delve into teachers' perceptions regarding the utilization of NVDA (Non-Visual Desktop Access) for enhancing the listening skills of visually impaired students. Phenomenology was chosen for its ability to explore individuals' subjective experiences within a specific context, providing valuable insights into the phenomena under examination. The research was conducted at SLB Negeri Banda Aceh, focusing on the experiences of three teachers who implemented NVDA screen readers in English language instruction for visually impaired students.

Data collection involved semi-structured interviews with the participating teachers. The interviews were designed to gather detailed accounts of teachers' experiences and their views related to the integration of NVDA in English learning. Additionally, interviews were aligned with the research question, focusing on the implementation of NVDA as a digital learning medium for enhancing listening skills. Data analysis followed an inductive approach, involving data reduction, display, and drawing conclusions (Miles et al., 2020). Through this methodology, the study aimed to provide comprehensive insights into the effectiveness of using NVDA to support English language learning among visually impaired students in special education settings.

3. RESULTS & DISCUSSION

All respondents demonstrated familiarity with using screen readers in educational settings. Respondent 1 tailored NVDA to individual student needs, adjusting voice preferences to suit their preferences. Respondent 2, having transitioned from JAWS to NVDA, emphasizes the importance of staying updated with technological advancements. Respondent 3, while primarily a counseling teacher, utilized NVDA in teaching various subjects, indicating its widespread use across different educational contexts.

In the context of Technological Pedagogical Content Knowledge (TPACK), respondents' experiences underscore the significance of educators' technological proficiency. Respondent 1's adaptation of NVDA aligns with TPACK's emphasis on understanding technology's capabilities to meet diverse student needs. Respondent 2's transition highlights the need for continuous technological learning among educators. Respondent 3's use of NVDA to enhance learning across subjects exemplifies how technological knowledge aids in selecting suitable media for effective instruction, consistent with TPACK principles.

Moreover, respondents cited various reasons for choosing NVDA as a learning medium. Respondent 1 appreciated NVDA's portability, facilitating seamless usage across different devices. Respondent 2 highlighted NVDA's cost-effectiveness compared to paid alternatives like JAWS. Respondent 3 emphasized NVDA's efficiency in delivering electronic materials compared to traditional Braille methods. Their preferences align with principles outlined by Hikmah (2019) and Astriani (2018), emphasizing effectiveness, flexibility, time, and cost



when selecting learning media. NVDA's attributes make it a viable choice, addressing key considerations for effective instructional delivery.

In addition, respondents outlined their methods for implementing NVDA in English listening sessions, emphasizing structured lesson formats and NVDA's role in delivering text materials audibly. Adjustments to NVDA settings, particularly speech rate and voice selection, were tailored to individual student abilities. Their experiences underscore the importance of accommodating students' needs when implementing NVDA. Slow speech rates and clear voices were preferred to enhance comprehension. Despite challenges, such as students' initial difficulty in adapting to new voices, NVDA's use significantly improved students' English proficiency and computer literacy.

Finally, respondents favored NVDA over traditional methods for teaching English, particularly in listening sessions. NVDA's ability to offer diverse accents for pronunciation practice was noted as a significant advantage. Additionally, NVDA's accessibility features, such as digital book access, were highlighted as beneficial for students in special schools. Their observations highlight NVDA's superiority in providing inclusive and effective English instruction, especially for teachers without English-major backgrounds. The ease of use and accessibility of NVDA further contribute to its preference over traditional methods. The findings suggest that NVDA effectively enhances English listening skills among visually impaired students, offering numerous advantages over traditional teaching methods. Educators can leverage NVDA's features and flexibility to create inclusive learning environments that cater to diverse student needs.

4. CONCLUSION

In The contemporary digital era has ushered in a transformative shift in education, particularly in English language learning, with educators increasingly embracing diverse media tools to enhance teaching methodologies and elevate students' language proficiency levels. Guided by the Technological Pedagogical Content Knowledge (TPACK) framework, teachers navigate the integration of technology, pedagogy, and content knowledge to foster effective teaching and learning experiences. Despite significant advancements in digital learning media, a notable gap persists in catering to visually impaired students within special schools. Traditional lecture methods remain prevalent, characterized by limited student engagement and inadequate alignment with principles of active learning. Moreover, the scarcity of accessible resources exacerbates challenges faced by blind students, hindering their academic performance, particularly in listening skills.

However, there is promise in leveraging assistive technologies such as screen readers to address these challenges. Screen readers like Non-Visual Desktop Access (NVDA) offer alternative means for visually impaired individuals to interact with computers, facilitating English language learning through text-to-speech conversion. Recent efforts have sought to introduce NVDA as a digital learning medium in special schools, particularly for enhancing listening skills among visually impaired students.

The qualitative study conducted at SLB Negeri Banda Aceh shed light on teachers' perceptions regarding the implementation of NVDA for English language instruction. Findings revealed a positive reception toward NVDA, with teachers citing its efficacy in enhancing listening skills through structured lesson formats and tailored adjustments to accommodate individual student needs. NVDA's advantages over traditional methods were evident, particularly in its ability to offer diverse accents for pronunciation practice and provide accessibility features such as digital book access.

In conclusion, NVDA emerges as a valuable tool for improving English listening skills among visually impaired students, offering numerous advantages over traditional teaching methods. Educators are encouraged to further explore the potential of NVDA and other assistive technologies to create inclusive learning environments that cater to the diverse needs of all students.

REFERENCES

- Astriani, R. (2018). Pengembangan Media Pembelajaran Interaktif Berbasis Mobile Learning. *Jurnal Pendidikan Teknologi dan Kejuruan*, 24(1), 1-13.



- Gregorius, R. M. (2017). Performance of Underprepared Students in Traditional versus Animation-Based Flipped-Classroom Settings. *Chemistry Education Research and Practice*, 18(4), 841-848.
- Hikmah, N. (2019). Pembelajaran Kontekstual dengan Teknologi Informasi Dan Komunikasi. *Jurnal Teknologi Pendidikan*, 21(3), 259-270.
- McCarthy, T., Pal, J., & Cutrell, E. (2013). The “voice” Has it: Screen Rader Adoption and Switching Behavior among Vision Impaired Persons in India. *Assistive Technology: The Official Journal of RESNA*, 25(4), 222–229.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative Data Analysis: A Methods Sourcebook (4th ed.)*. SAGE Publications, Inc.
- Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record*, 108(6), 1017–1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Pappas, C. (2023). TPACK: Using the Technological Pedagogical Content Knowledge Framework in Classrooms. eLearning Industry. Retrieved from <https://elearningindustry.com/tpack-using-technological-pedagogical-content-knowledge-framework-classrooms>
- Richards, J. C., & Rodgers, T. S. (2014). *Approaches and Methods in Language Teaching*. Cambridge University Press.
- Susanto, S., & Nanda, D. (2018). Teaching and Learning English for Visually Impaired Students: *An Ethnographic Case Study*. *English Review: Journal of English Education*. 7(1), 83-92. DOI.10.25134/erjee.v7i1.1530.
- Wiyannah, S. (2016). Developing English Electronic Module Using Job Access with Speech (Jaws) as Screen Reader to Empower Learning Autonomy of Students with Special Need. *Ahmad Dahlan Journal of English Studies*. 3(1), 28-37. 10.26555/adjes.v3i1.3623.