

**Influence of perceptions on engagement levels among teachers  
using Assistive Technology in Toledo City**

**April Michell M. Java**

Cebu Technological University - Main Campus

Cebu City, Philippines

Email: Javabells17@gmail.com

**ABSTRACT**

This study assessed the influence of perceptions on the engagement levels of teachers using Assistive Technology (AT) at Poog Elementary School, Toledo City, during the 2025-2026 school year. Utilizing a descriptive-correlational design, it surveyed all 30 teachers to profile their demographics, measure their perception and engagement levels, and determine the relationship between these variables. Findings revealed a predominantly female teaching force with varied experience, critically highlighting that 76.67% had no or only limited formal AT training. Despite this, teachers exhibited a positive overall perception (Weighted Mean=4.10), strongly acknowledging AT's value for diverse learners and identifying training as a key barrier. Their engagement was high (Weighted Mean=3.76), particularly in modifying lesson plans. A significant, moderate positive correlation ( $r=0.649$ ,  $p=0.000$ ) was found between perception and engagement, leading to the rejection of the null hypothesis. This confirms that more favorable perceptions predict higher engagement in AT use. The study concludes that while teachers are willing and active users of AT, a profound training deficit remains a critical impediment. It is recommended that the proposed Action Plan focusing on capacity-building, resource provision, and fostering a collaborative community of practice be implemented to enhance teacher competence and optimize AT integration for learners with disabilities.

**Keywords:** Special Education, Assistive Technology, teacher perception, teacher engagement, inclusive education, descriptive-correlation, action plan, Toledo City

Date Submitted: December 14, 2025

Date Accepted: December 30, 2025

Date Published: January 16, 2026

---

DOI: <http://doi.org/10.69651/PIJHSS0501718>

Recommended citation:

Java, A. M. M. (2026). Influence of perceptions on engagement levels among teachers using Assistive Technology in Toledo City. *Pantao (The International Journal of the Humanities and Social Sciences)* 5 (1), 7943-7952.  
<http://doi.org/10.69651/PIJHSS0501718>

## INTRODUCTION

Education is a fundamental right of every individual, regardless of their background or life circumstances, ensuring that all people have access to quality learning opportunities. However, certain sectors, such as learners with special educational needs (LSEN), often face significant barriers to receiving equitable and quality education. To address these challenges, various strategies have been implemented globally to provide effective and inclusive learning environments for these learners. Among these strategies, the use of Assistive Technology (AT) has emerged as a promising approach, enhancing accessibility and learning outcomes for students with diverse disabilities.

Assistive technology comprises specialized tools and devices that support learners in overcoming barriers to participation and achievement in educational settings. These tools offer advantages such as improved communication, independence, and engagement, contributing to inclusive education practices worldwide. Reflecting this global trend, the Philippines has adopted the deployment of assistive technology within self-contained special education classrooms, aligning with national mandates to support learners with disabilities.

Despite these advances, challenges persist in the adoption and effective use of assistive technology in Philippine special education centers. Issues such as limited resources, insufficient training, and varying institutional support frequently impede the full realization of AT's potential benefits. Observations within Toledo City reveal that teachers' perceptions about AT including their confidence, knowledge, and attitudes play a crucial role in shaping their engagement and active utilization of these technologies. Yet, comprehensive assessments of these perceptions and engagement levels remain limited, especially within local public-school contexts.

There is a pressing need to quantitatively assess the perceptions and engagement of teachers regarding the use of assistive technology to identify gaps and inform targeted interventions. Understanding these factors will provide empirical evidence to guide policy development, teacher training programs, and resource allocation to optimize AT integration. This study aims to examine the influence of teachers' perceptions on their engagement with assistive technology in Poog Elementary School, Toledo City, thereby contributing valuable insights to improve inclusive education practices.

The output of this study will offer data-driven recommendations for school administrators, policymakers, and teacher educators, promoting enhanced support systems and professional development opportunities. Ultimately, this research seeks to strengthen the capacity of educators to employ assistive technology effectively, ensuring that all learners receive equitable access to quality education tailored to their unique needs.

### Statement of the problem

This research assessed the perception and engagement of Special Education teachers in using Assistive Technology at Poog Elementary School in Toledo City for the school year 2025-2026 as basis for proposed action plan. Specifically, it sought answers to the following questions:

1. What was the profile of the respondents in terms of: age and gender; highest educational attainment; years of teaching experience; types of disabilities of the learners; and degree of formal training on the use of Assistive Technology?
2. What was the level of perception of the respondents on Assistive Technology use?
3. What was the level of the respondents' engagement in the use of Assistive Technology?

4. Was there a significant relationship between the respondents' perception and engagement in the use of Assistive Technology?
5. Based on the findings, what action plan can be proposed?

## METHODOLOGY

This chapter presents a comprehensive discussion of the methods and procedures employed in the conduct of the study, detailing the systematic process undertaken to gather, analyze, and interpret data in order to address the research questions and achieve the stated objectives. The study adopted a descriptive correlational research design to examine the perceptions of special education teachers toward the use of assistive technology and their level of engagement in utilizing such tools at Poog Elementary School in Toledo City during the academic year 2025 to 2026. This design was deemed appropriate as it allowed for the description of existing conditions and the examination of the relationship between teachers' perceptions of assistive technology and their engagement in its use without manipulating any variables. The descriptive aspect focused on documenting the demographic characteristics of the respondents, including age, gender, educational attainment, years of teaching experience, types of disabilities handled, and prior training in assistive technology, which provided essential contextual information for interpreting variations in perception and engagement.

The study was conducted in Poog Elementary School, a public basic education institution located in Barangay Poog, Toledo City, Cebu, approximately thirty-seven kilometers from Cebu City. The school serves kindergarten and elementary learners and accommodates a diverse student population within the district. With twenty-three functional classrooms and available instructional spaces where assistive technology may be integrated, the school offers a suitable environment for examining inclusive education practices. The institution is staffed by thirty teachers, several of whom are directly involved in inclusive and special education instruction, and it serves a total of eight hundred seventy-six learners, including those who may benefit from specialized instructional support. The presence of basic instructional materials and selected assistive technologies further supported the relevance of the research locale to the objectives of the study.

The respondents of the study consisted of all thirty classroom teachers of Poog Elementary School across kindergarten and Grades One to Six. These teachers were selected because of their direct involvement in classroom instruction and their daily interaction with learners who may require assistive technology, placing them in a position to provide informed and reliable insights regarding perceptions and engagement in assistive technology use. Given the relatively small and manageable size of the population, the study employed a complete enumeration technique, including all teachers as respondents. This approach ensured comprehensive data collection, eliminated sampling error, and allowed the findings to accurately represent the entire teaching population of the school.

Data were collected using a structured survey questionnaire as the primary research instrument. The questionnaire was adapted from two validated studies relevant to assistive technology use in educational settings. The first part of the instrument gathered demographic information related to the respondents' personal and professional profiles, providing a basis for analyzing differences in perceptions and engagement. The second part assessed teachers' perceptions of assistive technology use, covering areas such as awareness, compatibility, ease of use, learner responsiveness, confidence, training, administrative support, and ethical

considerations. This section utilized indicators rated on a five-point Likert scale ranging from strongly disagree to strongly agree. The third part measured the level of teachers' engagement in using assistive technology, focusing on integration into instructional goals, learner access, collaboration, troubleshooting, and exploration of new tools. This section also employed a five-point Likert scale ranging from never to always. The adaptation of previously validated instruments helped ensure the reliability and relevance of the data collected.

The data gathering process began with the securing of formal approval from the school head through a transmittal letter endorsed by the division superintendent. Upon approval, coordination with school representatives was undertaken to identify the teacher respondents. The purpose and objectives of the study were clearly explained to all participants, along with assurances regarding voluntary participation and confidentiality. Written informed consent was obtained prior to data collection. The questionnaires were personally administered by the researcher during the respondents' free periods to avoid disruption of instructional activities. This method facilitated accurate administration and allowed respondents to seek clarification when necessary. After completion, all questionnaires were retrieved, checked for completeness, and organized for analysis.

Ethical standards were strictly observed throughout the conduct of the study. Participation was entirely voluntary, and respondents were informed of their right to decline or withdraw at any stage without any adverse consequences. Confidentiality was maintained by excluding personal identifiers from the data and ensuring that all collected information was accessible only to the researcher. The data were used solely for academic purposes and were reported in aggregated form to prevent the identification of individual respondents. These measures ensured the protection of participants' rights and the integrity of the research process.

The collected data were subjected to appropriate statistical treatment to address the research objectives. Frequency counts and percentages were used to describe the demographic profile of the respondents. Weighted mean and standard deviation were computed to determine the levels of teachers' perceptions of assistive technology use and their engagement in utilizing such tools. Pearson correlation analysis was employed to examine the significant relationship between teachers' perceptions and their level of engagement in assistive technology use. Responses from the five-point Likert scales were assigned corresponding numerical values, with higher scores indicating more positive perceptions and higher engagement levels. Mean scores were computed and interpreted using established descriptive ranges to provide meaningful interpretation of the results. Through this systematic methodological approach, the study ensured clarity, rigor, and coherence in examining the relationship between teachers' perceptions and their engagement in the use of assistive technology within an inclusive education context.

## RESULTS AND DISCUSSION

This section presents and interprets the findings derived from the data gathered from thirty teachers of Poog Elementary School during the school year 2025-2026. Guided by a descriptive correlational research design, the study employed complete enumeration as the sampling approach and utilized a validated survey questionnaire to collect data on teachers' demographic characteristics, perceptions of assistive technology, and level of engagement in its use. Quantitative data were analyzed using frequency counts, percentages, weighted means, standard deviations, and Pearson correlation analysis. The discussion that follows is grounded strictly on

the results obtained and is aligned with the objectives of the study, integrating relevant literature to deepen interpretation and contextual understanding.

The demographic profile of the respondents provides an essential backdrop for interpreting their perceptions and engagement with assistive technology. Of the thirty participants, twenty-six were female, representing 86.67 percent of the sample, while four were male, accounting for 13.33 percent. In terms of age distribution, the largest proportion of teachers fell within the 26-35 age group, comprising 46.67 percent of the respondents. This was followed by those aged 36-45 years at 36.67 percent. Teachers aged 46-55 years constituted 13.33 percent, while only one respondent, or 3.33 percent, belonged to the 56-65 age group. This distribution reflects a predominantly female teaching force that is largely within the young to middle adulthood range. Such a profile suggests a cohort that may be more open to adapting instructional innovations, including assistive technology, given their relative proximity to recent teacher education programs and continued exposure to digital tools. The limited representation of older teachers and male teachers implies that perspectives on assistive technology use are shaped primarily by younger female educators, which may influence both the overall receptiveness to technology and the types of professional development interventions that are most effective. These findings are consistent with previous studies indicating that younger teachers and female educators often demonstrate greater openness and adaptability toward instructional technologies in inclusive education settings.

Educational attainment further contextualizes the respondents' professional preparedness for assistive technology integration. Among the thirty teachers, sixteen, or 53.33 percent, had completed a master's degree, while fourteen, or 46.67 percent, held a bachelor's degree. The slightly higher proportion of teachers with graduate level education reflects a strong inclination toward professional advancement within the school. Advanced academic preparation is often associated with deeper exposure to inclusive education principles, research-based practices, and emerging instructional technologies. Consequently, teachers with postgraduate education may possess stronger conceptual foundations and reflective skills that support more effective and confident use of assistive technology. At the same time, the presence of nearly half of the respondents with only a bachelor's degree indicates the need for continuous in-service training to bridge gaps in specialized knowledge, particularly in rapidly evolving areas such as assistive technology. These findings align with existing literature emphasizing that higher educational qualifications and sustained professional development positively influence teachers' attitudes and competencies in inclusive and technology supported instruction.

The distribution of years of teaching experience among the respondents reveals a diverse professional landscape. Eleven teachers, equivalent to 36.67 percent, had zero to two years of teaching experience, while three teachers, or 10 percent, had three to five years of experience. Eight teachers, representing 26.67 percent, had six to ten years of experience, and another eight teachers, also 26.67 percent, reported eleven years or more in the profession. This pattern indicates a substantial presence of novice teachers alongside a comparable proportion of experienced educators. Such diversity suggests a dynamic environment where recent pedagogical training coexists with long standing classroom expertise. Novice teachers may bring current knowledge of technology integration from preservice education, while veteran teachers contribute contextual understanding of learner needs and classroom realities. The coexistence of these groups highlights opportunities for peer mentoring and collaborative learning, which are critical for sustaining effective assistive technology use. However, it also underscores the necessity of differentiated

professional development, as teachers at varying career stages may require distinct forms of support to enhance their engagement with assistive technology.

The types of disabilities handled by the respondents further illuminate the instructional demands placed on teachers and the complexity of assistive technology use. The data allowed multiple responses, reflecting the reality that teachers often work with learners who present diverse or multiple disabilities. The category labeled Others received the highest frequency with eighteen responses, indicating that many learners fall outside the explicitly listed disability types or present combined conditions. Intellectual disability followed with nine responses, while visual impairment accounted for eight responses. Physical disability and autism spectrum disorder were each reported seven times, and hearing impairment was the least indicated with six responses. This distribution underscores the heterogeneity of learner needs within the school and reinforces the necessity for flexible and adaptable assistive technology solutions. The prominence of the others category suggests that teachers encounter complex learning profiles that require individualized approaches beyond standardized classifications. Consequently, teachers' perceptions and engagement with assistive technology are likely influenced by the need to address a wide range of functional challenges, reinforcing the importance of broad-based training and access to versatile technological resources.

The degree of formal training in assistive technology reported by the respondents reveals a critical gap in professional preparation. Fourteen teachers, or 46.67 percent, indicated that they had received no formal training in assistive technology, while nine teachers, representing 30 percent, reported limited training. Only four teachers, or 13.33 percent, described their training as moderate, and three teachers, or 10 percent, considered their training adequate. These results indicate that more than three quarters of the respondents lacked sufficient formal preparation in assistive technology use. This deficiency has significant implications for both confidence and effectiveness in integrating technology into instruction. Teachers without adequate training may rely on informal strategies or avoid using available tools altogether, limiting the potential benefits for learners with disabilities. The findings reinforce the widely documented assertion that training is a central determinant of successful assistive technology implementation and highlight the urgent need for structured, sustained, and practice oriented professional development initiatives.

Despite limitations in formal training, the respondents demonstrated generally positive perceptions toward assistive technology use. Weighted mean scores across the nine perception indicators ranged from 3.70 to 4.63, corresponding to positive and very positive interpretations. Teachers reported positive perceptions regarding their knowledge of assistive technology integration with a weighted mean of 3.70 and their confidence in selecting appropriate tools with a weighted mean of 3.73. The belief that assistive technology is user friendly and practical yielded a weighted mean of 4.10, while the perception that assistive technology supports learners with diverse needs received a very positive weighted mean of 4.30. Notably, the statement identifying lack of training as a major barrier obtained the highest weighted mean of 4.63, indicating strong agreement among respondents. Ethical considerations, including privacy, equity, and respect for learners' rights, were also viewed very positively with a weighted mean of 4.40. The aggregate mean perception score of 4.10, with a standard deviation of 0.84, reflects an overall positive stance toward assistive technology. These findings suggest that teachers recognize both the value and ethical soundness of assistive technology, even as they acknowledge structural barriers such as insufficient training and cost constraints. Such a perception profile provides a favorable foundation for further capacity building, as positive attitudes are a critical precursor to sustained technology adoption.

Teachers' engagement in the use of assistive technology was likewise found to be high across all measured indicators. Weighted mean scores ranged from 3.67 to 3.97, all interpreted as high engagement. Modifying lesson plans to incorporate assistive technology recorded the highest weighted mean at 3.97, indicating proactive instructional adaptation. Integration of assistive technology into Individualized Education Programs yielded a weighted mean of 3.77, while regular exploration of new tools and troubleshooting of devices both reflected weighted means of 3.77 and 3.80, respectively. Using assistive technology during instruction, providing student access, encouraging independent use, and collaborating with colleagues all demonstrated consistently high engagement levels. The aggregate mean engagement score of 3.76, with a standard deviation of 0.96, confirms that teachers were actively incorporating assistive technology into multiple dimensions of their professional practice. This level of engagement, despite limited formal training, suggests that teachers rely on experiential learning, peer support, and intrinsic motivation to meet the needs of learners with disabilities. It also indicates a school environment that, while constrained in resources, supports the practical use of assistive technology in daily instruction.

The relationship between teachers' perceptions and their engagement in assistive technology use was examined using Pearson correlation analysis. The results revealed a moderate positive correlation with an  $r$  value of 0.649, which was statistically significant at  $p = 0.000$ . This finding led to the rejection of the null hypothesis and confirms that teachers who hold more positive perceptions of assistive technology tend to demonstrate higher levels of engagement in its use. The strength and direction of this relationship indicate that attitudes, beliefs, and perceived value of assistive technology play a substantial role in shaping actual instructional behavior. Teachers who recognize the usefulness, ethical soundness, and learner benefits of assistive technology are more inclined to integrate it into lesson planning, instructional delivery, and collaborative practices. This result supports theoretical perspectives that emphasize the role of perception and self-efficacy in technology adoption and aligns with empirical studies showing that positive attitudes significantly predict consistent and meaningful use of assistive technology in inclusive classrooms.

In synthesis, the findings of the study reveal a teaching force that is generally young, predominantly female, academically advancing, and professionally diverse in experience, working with learners who present a wide range of disabilities. Despite substantial gaps in formal training, teachers exhibited positive perceptions and high engagement in assistive technology use. The significant moderate positive relationship between perception and engagement underscores the importance of cultivating favorable attitudes as a pathway to enhancing instructional practice. Collectively, these results address the study's objectives by demonstrating that while structural and training related challenges persist, teachers' positive orientations toward assistive technology provide a strong basis for targeted interventions. The findings contribute to the growing body of evidence emphasizing the need for systematic professional development, institutional support, and policy initiatives that strengthen both perception and practice, thereby advancing inclusive education outcomes and preparing the ground for the subsequent discussion of conclusions and recommendations.

## CONCLUSION

The analysis of the data yielded the following findings corresponding to the specific problems of the study:

The teacher-respondents were predominantly female, with the largest age group being 26-35 years old. In terms of qualifications, over half held a Master's degree. Teaching experience was varied, with the majority having 0-2 years or 6-10 years and above. The teachers served learners with a diverse range of disabilities, with the "Others" category being the most frequent. Critically, a significant majority (76.67%) reported having either no formal training (46.67%) or only limited training (30%) in the use of Assistive Technology.

The overall perception of the respondents towards AT was positive. They held very positive perceptions regarding AT's adherence to ethical standards, its support for diverse learning needs, and identified the lack of training as a major barrier.

The respondents demonstrated a high level of engagement in using AT. The highest engagement was shown in modifying lesson plans to incorporate AT, while using AT during instruction and encouraging independent student use were also frequently reported activities.

A moderate positive correlation was found between the respondents' perception and their engagement in using AT. This relationship was statistically significant leading to the rejection of the null hypothesis.

Based on the findings of the study, it is concluded that the perceptions of teachers at Poog Elementary School significantly influence their engagement levels in using Assistive Technology. Teachers who possess more positive perceptions regarding the usefulness, ethicality, and support for AT are more likely to be actively engaged in its integration into their teaching practices, lesson planning, and collaboration efforts. Therefore, fostering positive perceptions is crucial for enhancing active and consistent use of assistive technology in the inclusive classroom.

In light of the conclusions derived from the study's findings, it is recommended that the proposed Action Plan designed to enhance the perception and engagement of teachers in using Assistive Technology at Poog Elementary School be adopted and implemented.

## REFERENCES

Abu-Alghayth, K., et al. (2020). Teachers' use of assistive technology in Saudi special education: Barriers and enablers. *PLoS ONE*, 15(11), e0242252. <https://doi.org/10.1371/journal.pone.0242252>

Adams, R., Smith, J., & Taylor, L. (2023). Special education teachers' post-pandemic use of assistive technology: Knowledge, training, and barriers. *Journal of Disability and Education*, 29(4), 215–230.

Alassaf, M. A., Alshammari, F. S., & Almutairi, H. S. (2025). Teachers' knowledge and attitudes toward inclusive education: A study of special education teachers in Riyadh. *Frontiers in Education*, 10, Article 1630710. <https://doi.org/10.3389/educ.2025.1630710>

Aldunate, N., & Nussbaum, M. (2021). Teacher perceptions and adoption of assistive technology: A systematic review. *Computers & Education*, 156, 103945. <https://doi.org/10.1016/j.compedu.2020.103945>

Alsolami, A. S. (2022). Teachers of special education and assistive technology: A quantitative investigation. *SAGE Open*, 12(1), 1–15. <https://doi.org/10.1177/21582440221079900>

Alvarado, M., Santos, P., & Flores, R. (2024). Disability categorization and its impact on special education service delivery in the Philippines. *Philippine Journal of Rehabilitation Sciences*, 12(1), 45–60.

Baldonado, C. (2025). Challenges and coping mechanisms of special education teachers: A study in Iligan City. *Mindanao Journal of Research in Education*, 12(1), 45–59.

Campado, R. J., Toquero, C. M. D., & Ulanday, D. M. (2023). Integration of assistive technology in teaching learners with special educational needs and disabilities in the Philippines. *International Journal of Professional Development, Learners and Learning*, 5(1), ep2308.

De Vera, J. P., & Santos, M. R. (2022). Behavioral intentions and institutional support for assistive technology use among Filipino SPED teachers. *Philippine Journal of Special Education*, 30(1), 12–25.

Fernandez, J., & Lopez, A. (2025). Diverse disability profiles and assistive technology customization in inclusive education. *Journal of Special Education Technology*, 40(1), 22–35.

Gomes, F., Machado, L., & Ferreira, M. (2024). The role of training in enhancing assistive technology use for students with disabilities. *Journal of Special Education Technology*, 39(2), 98–112.

Gomez, E., Rosak-Szyrocka, J., & Yilmaz, M. (2021). Enhancing technological acceptance through educational support in special education. *Journal of Special Education Technology*, 36(1), 50–64.

Johnson, M. E., & Lee, S. G. (2024). Ethical considerations and usability in assistive technology adoption among special education teachers. *International Journal of Inclusive Education*, 28(3), 400–415.

Khan, A., Qasim, M., & Mahmood, S. (2023). Social influence, self-efficacy, and engagement with AI-based assistive technology among special educators. *Journal of Educational Technology & Society*, 26(4), 55–69.

Kumar, R., Patel, S., & Martinez, A. (2025). The impact of professional development on assistive technology implementation in special education. *Educational Technology Research and Development*, 73(2), 243–260.

Lamond, E., & Cunningham, C. (2020). Examining factors influencing teachers' adoption of assistive technology in special education. *International Journal of Special Education*, 35(2), 250–267.

Lim, J., Lee, J., & Yoon, J. (2024). Teacher attitudes and student engagement: The role of assistive technology in inclusive education. *Journal of Educational Technology & Society*, 27(1), 14–28.

- Mangubat, R., Sibley, L., & Lachner, A. (2025). Technological self-efficacy in teacher education: Preparing pre-service teachers for digital classrooms. *Journal of Teacher Education*, 76(2), 150–167.
- Mukhtarkyzy, K. (2025). A systematic review of the utility of assistive technologies for learners with disabilities. *Frontiers in Education*, 10, Article 1523797. <https://doi.org/10.3389/educ.2025.1523797>
- Oyedokun, T. (2024). Building capacity for assistive technology integration in special education through professional development and policy support. *International Journal of Inclusive Education*, 28(1), 45–60.
- Paetsch, J. (2023). Teacher self-efficacy in technology integration as a critical component in digital education. *Journal of Digital Learning*, 15(1), 45–60.
- Quiño-Justol, J. B. (2024). Perspectives of teachers on the integration of assistive technology: Influence of demographic factors. *Philippine Journal of Education*, 25(2), 123–135.
- Ramos, M. T., Delgado, A. R., & Santos, F. L. (2024). Policy impact on inclusive education: A Philippine perspective on assistive technology use. *Asia-Pacific Journal of Education*, 44(1), 85–99.
- Rüger, L., Smith, K., & Johnson, T. (2025). General and special education teachers' attitudes towards evidence-based practices: A comparative study. *Journal of Special Education*, 59(2), 101–114. <https://doi.org/10.1111/1471-3802.12727>
- Smith, L. A., Brown, K. M., & Nguyen, T. (2023). Teacher perceptions and assistive technology integration in special education classrooms. *Journal of Special Education Technology*, 38(1), 15–29.
- Starks, A. C., et al. (2023). What about special ed? Barriers and enablers for special education teacher use of technology before and during remote learning. *Computers & Education*, 182, 104547. <https://doi.org/10.1016/j.compedu.2022.104547>
- Surajudeen, T. B., et al. (2023). Special education teachers' readiness and self-efficacy in using assistive technology for instruction. *Indonesian Journal of Community and Special Needs Education*, 3(1), 33–42. <https://doi.org/10.17509/ijcsne.v3i1.44643>