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Institute of Special Education Studies

Faculty of Education – Palacký University Olomouc

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Content

Introduction

Dear readers of our magazine,
you are opening the spring issue of the Journal of Exceptional People, which contains a number of professional articles that are also written in a way that will interest the lay public dealing with the issue of exceptional, in our case, handicapped people. The first four contributions we have published concern the area of visually impaired students in the context of their social status, in connection with English language teaching and with problems that are linked to their physical maturation and manifestations of developmental learning disabilities. This issue was processed by a team of many experts, teachers and students of Palacký University in Olomouc and our editorial team believes that these contributions will fully interest you (K. Kroupová, V. Růžičková, I. Frnková, G. Špinarová, V. Vachalová, K. Coufal, L. Hovorková, J. Indráková, T. Salvadori, K. Tománková).

The following two articles will introduce us to the theatre and reveal to us, through drama therapy, educationally inspiring possibilities of having a positive impact on people through theatrical means. The first of these two articles deals with statistics (M. Valenta, M. Olšan, J. Vávra, J. Pospíšil), the second presents us with a case study based on a non-traditional drama therapeutic approach using the A.N.T.I.G.O.N.A methodology, which was implemented at the Divadlo bez domova in the Slovak Republic (P. Krebs).

The seventh contribution takes us to Nigeria in Africa and convinces us that here, too, teachers and students face similar problems associated with developmental learning disabilities as those encountered in the European or American population (O., S. Chinenyenwa; O., S. Orim).

Another very interesting contribution is the article by authors from the University of Ústí nad Labem (Czech Republic), which introduces us to experiences related

to virtual reality and its possibilities in teaching children and students with autism spectrum disorders (L. Zilcher, M. Vostrý, T. Hnyková).

Our editorial team has decided to no longer feature reviews of professional and interesting books, as was customary in previous issues of our magazine. However, at the end of each issue, potential contributors will find basic instructions regarding the formal aspects of writing contributions and ethical rules.

Dear readers, our editorial team wishes you a nice and inspiring spring.

Pavel Svoboda, executive editor, JEP

Specific learning disabilities in pupils with visual impairment

(scientific paper)

Kateřina Kroupová, Veronika Růžičková, Ilona Frnková, Gabriela Špinarová, Veronika Vachalová, Kryštof Coufal, Lenka Hovorková

Abstract: *Special education practice and theory show us that the number of pupils with specific learning disabilities has been continuously increasing for the last 5 years. Therefore, our investigation in the whole Czech Republic focused on the state of the issue among pupils with severe visual impairment. The topic is difficult to elaborate, mainly because very few authors have addressed it to date, despite the fact that special education practice sees this need. The following article summarises data collected through both quantitative and qualitative methods, thanks to the IGA project – The phenomenon of specific learning disabilities in pupils with visual impairment.*

Keywords: *pupils with visual impairment, school, specific learning disabilities*

1 Introduction

The issue of specific learning disabilities (SLD) in people with visual impairment is only a marginal issue within special education theory, while special education practice requires for an in-depth analysis of the issue, which will be a prerequisite for designing and establishing appropriate intervention procedures. As Venclová (2004, p. 53) points out about the possible simultaneous occurrence of visual impairment and SPU: "We leave this question open, however, because the current state of scientific knowledge cannot answer it". The following article could be the "first swallow" to stimulate professional discussion and empirical research interest so that the diagnosis of specific learning disabilities in individuals with visual impairment is no longer merely "suspect". In the framework of this text, partial outputs of the research carried out in the framework of the diploma qualification theses are also presented.

This issue is not satisfactorily empirically supported even abroad. However, e. g. Chokron, Kovarski, Dutton (2021) are one of the few to point out a possible

connection between specific learning disabilities and neuro-ophthalmological issues, specifically raising the question of adequate diagnosis of CVI (cortical visual impairment) with an emphasis on differential diagnostic aspects in relation to specific learning disabilities. The authors (2021) stress that visual deficits caused by CVI impair learning. Visual perception plays an essential role in the development of sensory-motor and cognitive abilities (Atkinson, Braddick; Chokron, Dutton in Chokron, Kovarski, & Dutton, 2021). Children with CVI not only have impairments in visual field, visual analysis, and attention, but also learning and social interaction (Jacobson, Dutton; Fazzi et al.; Pawletko et al. in Chokron, Kovarski & Dutton, 2021). The specific effects of CVI manifest as difficulties in reading, visuomotor coordination, and social interaction. Thus, the question remains which symptoms can be attributed to a primary disorder with a neuro-ophthalmological etiology, and which manifestations already fall under its secondary impacts. In the context of specific learning disabilities and visual impairment, the authors (2021) emphasize the role and importance of differential diagnosis with an emphasis on assessing etiological factors. Given the fact that specific learning disabilities arise from CNS dysfunction, their correlation with visual impairment, not only neuro-ophthalmological an etiology, is obvious.

Layton, Lock (2001) looked at isolated student outcomes towards a dual diagnosis of low vision and learning disability in a case study. The comorbidity of more severe degrees of visual impairment with learning disability was discussed by Veispak and Ghesquière (2010), who highlighted the possible association of reading difficulties in the acquisition and use of point writing with dyslexia. The area of Braille reading disabilities has also been addressed by Preda (2009) with an emphasis on addressing phonological deficits and the overall development of phonological awareness.

In the traditional concept of SLD diagnosis, the visual component (visual memory, attention, differentiation) was quite significantly represented, but the current diagnostic process emphasizes other aspects. This trend is also copied by the foreign professional environment, where the key item of the diagnostic process becomes the so-called phonological processing. Given the fact that one of the dominant symptoms of specific learning disabilities is phonemic impairment, the diagnostic process relies not on the visual component of perception, but on the auditory component, which opens up space for modification, application and creation of new diagnostic procedures for the target group of pupils with visual impairment. Other important areas tested in the intact population are cognitive abilities, working and mechanical memory and automation. Here, too, it is possible to search for appropriate diagnostic tools that are adequately sensitive for the diagnostic needs of people with visual impairment and that show differential diagnostic potential to identify specific SLD symptomatology unrelated to the consequences of visual impairment and the limitations resulting from it. It should be stressed that the current situation in the field of

SLD diagnosis in pupils with visual impairment is unsatisfactory, it is not addressed either in practical or empirical terms. The diagnosis of SLD is basically not determined in this target group, possibly only as a suspected problem. The interest of special education practice in a specific diagnostic tool is increasing. In the educational process of pupils with visual impairment, special educators are increasingly encountering symptomatology that cannot a priori be attributed solely to a visual deficit. In this context, the question remains which symptoms can be explicitly attributed to impairment or loss of visual perception, and which are differentially diagnostic of SLD. (Layton, Lock, 2001; Chokron, Kovarski, & Dutton, 2021)

Based on the experience from special education practice, there is a growing tendency of problems that may not be primarily related to visual deficit and symptomatologically correspond to specific learning disabilities. However, the fundamental problem remains the complete absence of diagnostics of this problem in the selected target group, which is thus faced with problems in the processes of reading and writing in the broadest sense of the word, reflected in the field of information literacy.

2 Primary research

The subject of the following part of the text is the presentation and description of the results of the research carried out within the framework of the diploma qualification theses (Bastlová, 2024; Chlachulová, 2024). The researches showed a mixed design in order to identify and describe the key aspects of the studied issue of specific learning disabilities in pupils with visual impairments, both in primary and secondary schools. The intention was to evaluate the current state of the observed phenomenon in the educational reality of primary and secondary schools. We were interested in aspects of diagnosis, intervention and other specifics across the different categories of visual impairment.

The research methods, in a mixed design, were both questionnaires and interviews in both cases. The target group or research population were professionals working with visually impaired pupils in the educational process. The final analysis included 21 questionnaires, 14 of which covered secondary schools. Qualitative interviews were conducted with various participating professionals. At the outset, it should be emphasized that specific learning disabilities can occur in all categories of visual impairment, regardless of the level and quality of visual perception retained. Specific learning difficulties in the sense of SLD have been reported across the whole spectrum of visual impairment, from binocular vision impairment to low vision, to blindness. The comorbidity of visual impairment at the level of residual vision and specific learning disabilities has interesting implications, particularly with regard to the application of the dual method (simultaneous acquisition of both black print and Braille). It can be assumed that difficulties manifest themselves at both levels, but the

potential error rate may also be due to the enormous demands and increased fatigue. The questionnaire survey showed that the separate types of disability (i. e. visual impairment and specific learning disabilities) have very similar impacts, but when they occur in combination, the resulting limits are compounded or even multiplied. In the case of a combination of specific learning disabilities and visual impairment, the specifics of the particular visual impairment must be reflected, visual hygiene must be strictly observed, especially in the context of working with textual material, which should not only comply with the principles of accessibility in terms of specific learning disabilities, but should also be optimised with regard to the nature of the visual impairment. Another prerequisite for improving learning comfort is the use of compensatory aids, and the ability to use them and the correct working methodology, especially with electronic aids, is another prerequisite for effective work with text. The most frequently used aids in working with the text are enlarged texts, bookmarks, overviews of the learning, contrasting texts, wider lines, the use of a notebook, supplementary exercises, etc. A specific approach is also necessary when working in Braille, or when using other sensory compensators and a multisensory approach in education. In the case of SLD, there is a need to focus more on training school skills, and in the case of visual impairment, on specific skills – working with magnifying glasses and other compensatory aids, keyboarding, developing visual skills, or training spatial orientation.

Pupils with visual impairments are disadvantaged in several areas when they have a combination of specific learning disabilities and visual impairments, and the limits resulting from both visual impairments and specific learning disabilities are usually multiplied. Difficulties occur in reading, writing, mathematics, and a very significant factor is the greater fatigability and slower work pace, which can be compounded in the case of specific learning disabilities.

Experts rank dyslexia, dysgraphia and dysorthography among the most common specific learning disabilities among pupils with visual impairments in primary schools, and dyscalculia in secondary schools.

Experts are aware of the considerable difficulties in diagnosis. Respondents would benefit most from courses on specific learning disabilities, specific tests for diagnosis, methodological materials, and more awareness-raising in schools. Respondents also consider their own professional experience to be a key factor.

The qualitative data obtained through interviews with the staff of the special education center and the primary school showed that it is possible to distinguish between manifestations of visual impairment and specific learning disabilities. According to one of the participants, the criterion for distinguishing between the mentioned comorbidities (visual impairment and specific learning disabilities) are other perceptual functions. These should not, in an individual with visual impairment, show the presence of another disorder, they should be undisturbed and normal.

In the field of diagnostics, adapted diagnostic materials designed for the population with visual impairments are used in practice (especially in the context of the principles of visual hygiene), while the staff of the special education centers also use their own diagnostic material specifically designed for the diagnosis of pupils with visual impairments. Here again, the need for a deeper professional interest in this area is manifested, which will be a prerequisite for the construction of sensitive diagnostic tools for specific learning disabilities in the category of individuals with visual impairment, taking into account the type and degree of visual impairment and other characteristics of visual impairment. The qualitative data shows that students with severe visual impairment are often not diagnosed with specific learning disabilities at all, especially given the absence of specific diagnostic materials. However, the research participants perceived significant difficulties with reading and writing in Braille corresponding to specific learning disabilities, including, for example, confusion of combinations or single dots, which corresponds to the typical symptomatology when working with black print (confusion of similarly shaped letters). There are also marked difficulties in pupils with acquired visual impairment who have been diagnosed with a specific learning disability prior to its onset. The interviews conducted suggest that the diagnosis of specific learning disabilities is often confused with visual impairment, so it is paradoxical that there is a lack of sufficient differential diagnostic criteria in practice. For pupils with severe visual impairment, the diagnosis of learning disabilities is usually not approached at all. Only rarely it is possible in practice to diagnose specific learning disabilities during schooling (while SLD is normally diagnosed in primary school, especially in year 3). Pupils are more often diagnosed with dyscalculia. In terms of the specific learning disabilities manifested by pupils with visual impairments in secondary school, the greatest problems were noted in the area of reading, particularly reading comprehension. Manifestations of specific learning disabilities can be found in both Braille and written expression, and less frequently in spoken expression. The application of grammatical rules or the reading of written text is also problematic.

The interviews in this context revealed the importance of interdisciplinary cooperation with experts from various institutions participating in the care/support of the pupil in the educational process and with the pupil's parents. Intervention is carried out, for pupils with visual impairment who manifest the manifestations of specific learning disabilities, in the same way as in the case of an independent specific learning disability, provided that visual hygiene, the use of senses other than vision and other compensatory mechanisms are observed. Dyslexics can use silent reading, reading windows, enlarged font. In practice, texts are also shortened, dictations are often replaced by supplementary exercises (here, the suitability/unsuitability of this type of exercise must be balanced with regard to the limitations resulting from a particular visual impairment, e. g. in the case of tubular vision or, in general, in the

case of scotomas in the field of vision, etc.), texts may have colored backgrounds, or overviews of the curriculum may be used. There is a substantial increase in time commitment. Pupils often use tablets or laptops, which allow spelling correction. The available aids from the Dys-centrum (organisation in the Czech Republic) can also be a support.

3 Limits of research

Some of the questions of the questionnaire in this research were limiting in that they did not have the desired effect and at the same time the answers were too complex for the respondents. On the other hand, this potentially limiting area was compensated by the qualitative interviews, which allowed for a better response to possible interferences and facilitated a deeper analysis of the topic. The research set, which does not cover the entire spectrum of participating professionals, also shows limitations, and the resulting picture of the issue under study may be somewhat one-sided – the respondents, or participants, were mainly the staff of the special education centre; in the case of a more equal representation of other subjects of education, the results could have been different. At the same time, we have to take into account the different length of experience of individual workers and, relatedly, their level of experience, which largely predicts the content yield of the data obtained. The uneven distribution of responses across regions could also be a limiting factor. Even the question itself, concerning the difference in intervention of specific learning disabilities in intact pupils and pupils with visual impairments, shows limits in the sense that some research participants do not have relevant experience with intact pupils and these disabilities in them. Last but not least, the low saturation of the research population for the implementation of the qualitative part of the research is also limiting; if the research population for the interviews had been represented by a larger number of participants, the results might have been different or the resulting overall picture of the phenomenon under study might have been different.

4 Summary

Specific learning disabilities in individuals with visual impairment remain a marginalised topic within the theoretical platform of special education, but special education practice calls for adequate diagnostic tools, methodological materials and further specific training. The previous text has outlined some of the neuralgic points with which special education practice is confronted and the intention is to start not only a debate but also research activities at the basic research level that would provide input data for applied research in the sense of developing a diagnostic test battery for specific learning disabilities in the target group of pupils with visual impairment.

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Contact Information:

PhDr. Kateřina Kroupová, Ph.D., Mgr. et Bc. Veronika Růžičková, Ph.D., Bc. Ilona Frnková, Mgr. Gabriela Špinarová, Ph.D., Mgr. Veronika Vachalová, Mgr. Kryštof Coufal, Mgr. Lenka Hovorková

Institute of Special Education Studies

Faculty of Education

Palacký University Olomouc

Žižkovo nám. 5

771 40 Olomouc

Czech Republic

email: katerina.kroupova@upol.cz, veronika.ruzickova@upol.cz., ilona.frnkova01@upol.cz, gabriela.spinarova@upol.cz, veronika.vachalova01@upol.cz, krystof.coufal01@upol.cz, lenka.hovorkova01@upol.cz

Experiences of English language teachers with teaching pupils with visual impairment

(overview essay)

Tereza Salvadori, Kateřina Kroupová

Abstract: *The article examines the experiences of Czech English language teachers, who teach at least one pupil with visual impairment. The article is structured in two parts. The first part outlines the general considerations and strategies for teaching foreign language pupils with visual impairment. In the second part, an analysis of the interviews with selected teachers is presented. These interviews focus on the preparation of the teachers to teach those pupils and the support a school or other subjects provide them. The interview analysis also explores the challenges and obstacles teachers encounter both during lessons and outside the classroom. The primary objective of this study is to assess whether Czech English language teachers are adequately prepared to teach students with visual impairments and whether they receive appropriate support for doing so. A secondary aim is to identify potential obstacles faced by both teachers and students with visual impairments.*

Keywords: *visual impairment, pupil with visual impairment, ELT, experiences of the teachers*

1 Introduction

Vision is one of the distant analysers, which enables a person to obtain a maximum amount of information in a minimal period. This eminent informational acquisition is a privilege only of visual perception. Vision enables distinguishing light, darkness, colours, shapes, size, position, and movement of the object and its dimensionality or depth of space. It has a prominent impact on the creation of correct notions and the development of attention, memory, thinking, and speaking—these factors are essential for the educational process.

Vision accounts for 75–90% of the information individuals receive from their environment, highlighting its crucial role and, to some extent, its irreplaceability as an analytical tool. It is well established that any impairment or loss of vision has a profound impact on daily living activities, often limiting them in fundamental ways (Vondráková et al., 2020). Consequently, visual impairment results in a significant informational deficit across various aspects of an individual's life, with its effects being particularly pronounced in education, including language learning.

In the educational process for individuals with visual impairments, the same didactic principles and guidelines that apply to the general population should, in principle, be upheld and implemented. However, certain teaching methods, approaches, and overall educational conditions must be adapted to accommodate the specific nature of the visual impairment and the associated limitations.

The regulation of the learning process, as a means of optimizing the achievement of learning objectives, is ensured through didactic principles, including permanence, visibility, consistency, individualized approach, adequacy, scientific rigor, the integration of education with practical application, and the principle of collaboration among all professionals involved in the educational process. The principle of permanence is based on reinforcing and consolidating acquired knowledge. For students with visual impairments, this process is more demanding, requiring support through all available means, such as multisensory teaching and the use of compensatory strategies. In this context, the principle of visibility also becomes critical, as it is necessary to provide access to information through non-visual methods. The most effective visibility is achieved through a multisensory approach that continuously incorporates all compensatory mechanisms. The principle of consistency emphasizes systematic and logical interconnections, comparison, and continuous repetition. For individuals with visual impairments, a systematic organisation of knowledge and a focus on clarifying the relationships between parts and wholes are essential, and these aspects should be deliberately highlighted. The principle of adequacy is grounded in the hierarchical organization of the difficulty involved in acquiring knowledge. In relation to developmental specifications, the characteristics of the presented knowledge should be appropriately adjusted, which includes the adaptation of methods and forms of delivery. Additionally, the principle of adequacy encompasses considerations of the type and extent of visual impairment, as well as the limitations imposed by such impairments. The principle of scientific rigor should underpin all intentional education, as it links knowledge to the tangible outcomes of scientific research. Simultaneously, there is a fundamental requirement to connect acquired knowledge with real-life applications and practice. For individuals with visual impairments, however, this connection can be more challenging due to informational deficits. The requirement for collaboration among all relevant experts is a critical factor in the education of individuals with visual impairments. A multidisciplinary or, more broadly, a transdisciplinary

approach is an essential component of contemporary special educational practices, as it contributes to the optimization of the intervention process. Lastly, the principle of individualized approach is fundamental in the education and support of individuals with visual impairments, particularly within the context of special education and education in its broadest sense. It is crucial to consider not only the individual personality traits but also the specific characteristics related to the type, degree, and onset of visual impairment, associated complications, and, importantly, the functional use of vision (Finková in Finková, Růžičková, Stejskalová, 2011).

In the context of education, emphasis should be placed on verbal methods (both monologic and dialogic), demonstrative methods (including auditory or haptic modes of exploration), excursions (which integrate theory with practice), observation (with a focus on a synthetic approach to information acquisition through other senses and higher compensatory mechanisms), and practical methods (which are typically less utilized with students with visual impairments). The application of the aforementioned methods in education is influenced by multiple factors, including the content of the curriculum, the objectives of the educational program, as well as the type and degree of visual impairment, among other considerations. Once again, the principle of individualized instruction can be emphasized, alongside the principles of visibility and multisensory cognition (such as through demonstrative methods, excursions, observation, and tactile or auditory approaches).

The entire educational process should be intertwined with the development of specific skills for individuals with visual impairments. Similar to cross-cutting themes, the focus should be on the continuous development of competencies in areas such as spatial orientation and independent mobility, self-care activities, the application of visual hygiene, the use of compensatory mechanisms, and the effective utilization of assistive devices. These competencies should be integrated across all areas of education.

The content of the educational area "Language and Language Communication" is realized within the educational fields of Czech Language and Literature, Foreign Language, and Another Foreign Language. The educational field "Language and Language Communication" plays a crucial role in the educational process. A strong command of language is an essential indicator of general maturity for graduates of elementary education. The primary objective of language education is to develop communicative competencies, equipping students with the knowledge and skills necessary to perceive and understand various language communication situations, communicate appropriately, and effectively apply the results of their own cognitive processes (RVP pro ZV, online, available at: www.msmt.cz).

Foreign Language and Another Foreign Language contribute to the understanding and exploration of concepts that complement the experiences provided by the

mother tongue. These subjects offer a dynamic linguistic foundation and establish the basis for student communication within an integrated European and global context.

Learning a foreign language helps reduce language barriers and contributes to increased mobility for individuals, both in their personal lives, further education, and future employment opportunities. The requirements for foreign language instruction are outlined in the RVP ZV, which is based on the Common European Framework of Reference for Languages. This framework defines various levels of proficiency in foreign languages. Foreign language education aims to achieve proficiency at the A2 level (RVP ZV, online, available at: www.msmt.cz).

Specific aspects in language teaching of pupils with severe visual impairment

The key principle in teaching pupils with severe visual impairments is the application and adherence to principles of visual hygiene, with the aim of maximizing the use of visual perception while minimizing negative impacts and potential degradation of preserved visual functions. These precautions involve modifications to the educational environment, such as high-contrast workspaces, options for localized lighting, the level of central illumination, and shading possibilities. Additionally, adjustments may be made to the time allocated for tasks involving visual input, the use of individual optical devices and other compensatory aids, and the adaptation of text and visual materials. Further adjustments may be made based on specific individual characteristics, depending on the type, degree, and nature of the visual impairment (e. g., visual field deficits, tunnel vision, etc.).

In foreign language instruction for students with visual impairments, the same methods and forms are used as those applied to sighted students. However, limitations and challenges arising from reduced visual perception can manifest, such as difficulties in reading (e. g., letter or syllable substitution), a higher error rate, slower reading speed compared to sighted peers, and increased difficulty in text navigation. A higher error rate is also evident in writing, as the reduction in visual functions can lead to illegible handwriting, difficulties with proper alignment on the line, and challenges in maintaining consistent font size. In general, students with visual impairments tend to experience faster fatigue and slower work pace. Insufficient application of visual hygiene can exacerbate asthenopic symptoms, such as headaches, eye strain, and excessive tearing. A relatively problematic area is working with textbooks, which are typically designed with a strong reliance on visual principles. Simply enlarging the text or converting it to Braille may not be sufficiently effective or appropriate for the needs of students, who often experience heightened cognitive demands and are constrained by informational deficits. Difficulties are also encountered by students with low vision. Textbooks are typically printed on glossy paper, which is unsuitable

for reading by students with low vision due to issues with contrast and potential glare. Additionally, the choice of fonts, their wide variety, and the indentation of text (e. g., comic bubbles, tables, diagrams, or fragmented text) are often inappropriate for these students. In the case of students with blindness, the transcription of textbooks into Braille can be potentially problematic. The transcription process requires a significant amount of time and must be done in the alphabet of the chosen language. Visual materials, which are typically central to textbook use, are only accessible to students with visual impairments in a limited form (primarily for students with low vision or residual sight). It is important to recognize the limited informational value of activities that rely on visual content. These images often do not meet the criteria for optimal contrast, defined contours, appropriate size, or adequate detailing. This approach can be utilized with students with low vision or residual sight; however, it is important to consider the possibility that the student may not be able to recognize key details. In this context, emphasis should be placed on alternative forms of engagement, particularly on developing listening and speaking skills.

When working with a dictionary, the use of additional optical aids is necessary (e. g., correct handling of a magnifying glass and navigating columns in the dictionary), or alternatively, a computer with appropriate software (such as a screen reader or magnification tool) in combination with online dictionaries. The primary focus should be placed on developing the pupil's speaking skills. Limitations may arise in pronunciation due to the lack of visual support for articulating foreign sounds. In such cases, the teacher can provide support by describing the location and method of articulation.

All writing on the board must be accompanied by appropriate verbal commentary. A useful support tool can include the projection of PowerPoint presentations, optimised for background, contrast, font choice, and size, among other factors.

The key prerequisite is that pupils with visual impairments have the same expectations and outcomes as their sighted peers.

2 Methodology

This study employed a semi-structured interview method with English language teachers who teach at least one student with a visual impairment. The semi-structured interview was chosen as the method because it enables the researcher to utilize predefined topics and questions while allowing for flexibility to deviate from them based on the flow of the conversation. This approach facilitates the participant's ability to provide novel and unforeseen insights. The primary focus of the interviews was to explore the specific strategies and considerations involved in teaching English to pupils with visual impairments. The interviews were analysed, and the resulting data were categorized into thematic segments reflecting similar areas of focus. A diverse

group of English teachers, including those working in mainstream schools as well as in institutions specifically designed for students with visual impairments, were considered for participation. Ultimately, two participants agreed with the interview and created our sample. These participants represent a crucial source of information, as they are practitioners with expertise in the field who can assist in comparing theoretical outcomes with real-world experiences. However, a limitation of this approach is the potential lack of sufficient practitioners to enable precise generalization of the findings, as well as the potential subjectivity of their perspectives.

The following research questions were formulated:

- What obstacles do educators face in the process of teaching pupils with visual impairments?
- What positive outcomes are associated with teaching pupils with visual impairments?

3 Results

The two selected teachers both teach English in mainstream high schools and have no prior experience teaching pupils with visual impairments, nor they have a background in special education. Both teachers hold degrees in English language education. The first has 30 years of teaching experience, while the second has 10 years. At the onset of their careers, both teachers were introduced to the fundamentals of teaching students with visual impairments by an educational advisor or by an advisor from a special education centre. This initial introduction primarily focused on the assistive tools that would be used by pupils, with no additional preparation or specialized training provided for teaching students with visual impairments. When adaptations to the lesson are necessary, the first participant consults her students to determine how best to modify the lesson. In contrast, the second participant received recommendations from the advisor at the special education centre but has not yet implemented them.

During the interviews, both participants emphasized that their students with visual impairments demonstrate a high level of independence in managing the challenges posed by their condition in the classroom. The students utilize tools such as magnifying glasses or take photographs of the materials they are working on, subsequently zooming in on specific exercises. Both participants also highlighted that working with textbooks, workbooks, or worksheets can sometimes be problematic for students, and enlarging the materials does not always provide a solution. For instance, the first participant noted that certain exercises can cause confusion, leading to a higher error rate that is not attributed to a lack of knowledge or low skill levels of the pupil. The second participant pointed out the inadequate contrast in the

workbooks, which are predominantly in shades of gray, prompting her decision to exclude the workbook from her lessons.

In terms of active participation in lessons, pupils with visual impairments were reported to engage at the same level as their sighted peers. These students were described as responsible and diligent. They encounter similar challenges to those faced by their sighted classmates, such as difficulty recalling certain vocabulary. Issues related to lower motivation were attributed more to the developmental stage of the individual pupils and their personality rather than their visual impairment.

The semi-structured interviews were conducted exclusively with teachers who teach pupils with low vision, meaning the study did not include data from teachers with experience teaching students with residual sight or blindness. Another limitation of the study is that all participants were drawn from mainstream schools, which often lack specialized classrooms for students with visual impairments, appropriate compensatory aids, or teachers with specialized training in teaching students with visual impairments. These factors may influence the teachers' perspectives on their teaching practices. Additionally, valuable insights could have been gained if the pupils had participated in the study to provide their perspectives on their teachers' instructional methods.

4 Conclusion

The study provided valuable insights into the inclusive reality of teaching English language pupils with visual impairments, highlighting both its strengths and challenges. On a positive note, the study found that pupils with visual impairments are perceived as independent, reliable, and diligent individuals who can be taught using the same methods, forms, and curriculum as their sighted peers. However, the study also identified several areas of concern in inclusive teaching, including the use of unsuitable teaching materials, a lack of preparation among teachers for teaching students with visual impairments, and insufficient support provided to teachers.

The issue of unsuitable teaching materials was highlighted not only by the participants but also in theoretical sources, although without offering potential solutions. Several possible solutions could be considered. One option is the use of electronic versions of textbooks or workbooks. Another approach could involve creating adapted versions of textbooks or workbooks that are more suitable to the needs of pupils with visual impairments. These adaptations would not be limited to simply enlarging individual exercises; they would also require careful selection of visual materials, appropriate fonts, and adjustments to the layout of exercises, ensuring that the overall level and principles of the exercise are maintained.

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Mgr. Tereza Salvadori, PhDr. Kateřina Kroupová, Ph.D.
Institute of Special Education Studies
Faculty of Education
Žižkovo nám. 5
779 00 Olomouc
Czech Republic
e-mail: tereza.salvadori01@upol.cz, katerina.kroupova@upol.cz

University students with visual impairments and their social status among other students and lecturers

(overview essay)

Jana Indráková

Abstract: *This paper is devoted to the social perception of university students with visual impairment by their non-disabled classmates and lecturers. Initially, we will briefly introduce a few definitions of visual impairment, the legislative framework access to higher education for people with disabilities, and the services provided by university support centres. Then, we will continue with a qualitative study conducted among students with VI at Czech universities. The data were collected through semi-structured interviews, in which four respondents with VI answered research questions regarding how they are perceived by their non-disabled classmates and lecturers. The study originates from the bachelor's thesis of the author of this paper.*

Keywords: *visual impairment, higher education, society, inclusion, social status*

1 Introduction

Visual impairment has numerous definitions. One of the most widely used definitions is based on international classifications established by the World Health Organisation (WHO), specifically according to the International Classification of Disease (ICD). The 11th revision of the ICD describes VI as the impact of an ocular disease on the visual system and one or more visual functions. The severity of VI is categorised as mild, moderate or severe distance VI or blindness, as well as near VI (ICD-11, 2025). Visual impairment can be defined from medical, psychological and educational perspectives (Hamadová, Květoňová, & Nováková, 2007), with the medical definition being included in ICD-11. From a psychological perspective a person with VI has a reduced ability to receive visual information, which consequently affects their overall personality (Hamadová, Květoňová, & Nováková, 2007). Individuals with VI often become aware of their impairment during adolescence and adulthood.

They have greater difficulties in forming friendships and romantic relationships due to communication barriers and prejudice from their peers (Finková, Ludíková, & Růžičková, 2007). University students with VI also encounter these challenges. From an educational perspective, a student with VI faces a negative impact on their academic performance, even with maximum possible vision correction (Hamadová, Květoňová, & Nováková, 2007).

Many people with disabilities have the option to study at universities. In accordance with European Union standards, the Czech Republic has committed to providing and guaranteeing access to higher education for students with special educational needs at Czech universities. This commitment is founded on the principle of equal treatment between non-disabled people and people with disabilities (Karunová, 2020). This principle is also based on Article 3, Paragraph 1 of the Charter of Fundamental Rights and Freedoms (2/1993 Sb., 2025), which states the fundamental rights and freedoms are guaranteed to all individuals without distinction based on gender, race (…) or other status. The term "other status" also includes disability (Husseini, Bartoň, & Kokeš, 2021). The provision of equal educational opportunities for individuals with special educational needs is also enshrined in Act No. 111/1998 Coll., on Higher Education, as amended. Every Czech university has its own support centre for students with special needs, e. g. The Support Centre for Students with Special Needs at Palacký University of Olomouc or Pyramida Centre for Students with Special Needs at University of Ostrava. These support centres generally provide guiding services, note-taking services or modification to examination procedures.

2 Research part

2.1 Materials and Method

The qualitative study was conducted among students at Czech universities who suffer from visual impairment. The academic field, degree level and the age of participants were not essential for our study. We did not include first-year students in bachelor's or five-year master's programmes because a higher level of experience within the university enviroment is necessary for a proper understanding of the research topic.

To summarise, every student as a respondent could participate in the research, provided they simultaneously fulfilled the following criteria: a person with any degree of VI, a university student of any age, academic field or level of study (bachelor's, consecutive master's or PhD) and not a first-year student in a Bachelor's or five-year Master's programme.

2.2 Method

A choice of suitable respondents is crucial for a qualitative study (Hendl, 2016) and it represents one of the most difficult phases of the study (Miovský, 2006). Due to her visual impairment, the author of this paper interacts with students with the same type of disability, thus two participants were chosen by simple purposive sampling. Another two respondents were chosen by the self-selection method (Miovský, 2006). One of the respondents obtained in this way positively responded to our post in a social media group focused on individuals with visual impairment. The second participant responded to the email which was sent by the bachelor's thesis supervisor to all potential participants, through which was the research conducted.

A total of four students were chosen – two women and two men. All of them had a VI at the level of residual vision. Among the participants were two students pursuing a consecutive master's programme and two pursuing a doctoral degree, specifically at Palacký University in Olomouc and the University of Ostrava. The youngest participants were first-year students in a consecutive master's programme.

Table 1: *Overview of the obtained respondents*

Respondent's identification	Respondent chosen by	The respondent being a student:			The lenght of study	Degree of visual impairment
		University	Program	Grade		
1	Simple purposing sampling	Palacký University, Olomouc	PhD	6.	11	Residual vision
2	Simple purposing sampling	Palacký University, Olomouc	Consecutive master's	1.	4	Residual vision
3	Self-selection method	Palacký University, Olomouc	Consecutive master's	1.	4	Residual vision
4	Self-selection method	The University of Ostrava	PhD	3.	8	Residual vision

The data were collected through semi-structured interviews, which are the most common method in qualitative research (Švaříček & Šeďová, 2014). The interviews were conducted in person or via videoconference. They were always conducted individually to minimize the risk of dishonest responses as much as possible.

We made a list of questions for participants before the actual completion of the interviews. The respondents were not informed of the questions in advance to minimize potential bias in their responses caused by an effort to alter their answers. Our goal, on the contrary, was to obtain spontaneous and honest answers as much as possible.

Before starting the actual interviews, the participants were always introduced to essential formalities – research goal, duration and process of the intervies, the

possibility to withdraw, consent to recording the interview and assurance of anonymity. These were also included in the informed consent.

All interviews were recorded on a mobile phone, to which all respondents agreed. We also promised each participant that the recordings would be stored for the necessary duration and, after that, they would be properly deleted. In consideration of the promised anonymity, we have anonymized all academic fields and changed the respondents' identification (see Table 1).

2.3 Analysis

The duration of the recordings ranged between twelve and thirty-nine minutes and they were transcribed verbatim. The transcribed texts were then analyzed through first-order reduction and ranged from four and eleven pages in length. After that, the texts were coded into individual meaning categories (see Table 2) and analyzed using three basic methods: the clustering method, the simple enumeration method and the pattern recognition method (Miovský, 2006).

Table 2: *Meaning categories*

1.	Motivation for studying at university
2.	Factors influencing the choice of a field of study
3.	The early stages of university studies
4.	Initial feelings from studies
5.	Disclosure of visual impairment
6.	Reactions of others to the disclosed visual impairment
7.	Challenges related to visual impairment
8.	Expected process of getting acquainted with classmates
9.	Actual process of getting acquainted with classmates
10.	Expectations regarding building social standing and status within the group
11.	Achieved social standing within the group and behavior of classmates
12.	Assumptions about peers' perceptions
13.	Assumptions about university lecturers' perceptions
14.	Behaviour of academic lecturers
15.	Surprising factors in mutual relationships

For the purpose of this paper we have translated the respondents' statements from Czech to English with the utmost care, ensuring that the meaning of each statement is retained as authentically as possible. We also decided to retain the respondents' excerpts that we found most interesting to illustrate key themes. The full version of respondents' statements can be found in the bachelor's thesis (Indráková, 2024).

2.4 Results

2.4.1 Motivation for studying at university

Three respondents (P1, P2 and P4) were motivated to apply for university by their previous studies. Participant 1 even noted that, he was introduced with the possibility of university studies by his teachers at a primary school, in the condition that he continued to a grammar school. He was also interested in the chosen area of academic study, in which he wished to improve himself. Participant 4 was guided by her parents towards university studies since childhood, and they enrolled her in a grammar school.

2.4.2 Factors influencing the choice of a field of study

Participant 4 made her decision based on her talents and skills with optimal employability being the key factor. It was also very important for her to consider the amount of visually based work and the availability of support centres for students with special needs at universities. She also took into account the reactions of academic lecturers and potential classmates during open days at the faculties she visited. Negative reactions at several departments discouraged her, and she ultimately chose her field of study based on the welcoming approach of the department.

P4: *"I had more options, like I was thinking about special education, psychology and just these kinds of humanities fields because it's something in which I'm usually good and I enjoy.* (…) *And with those I thought I would just have best job opportunities. And the other fact is that um… the person doesn't need the perfect vision* (…) *Actually when I was at several open days I tried to choose also according to uh… the field like… what reactions they actually had you know… Because for example when I came to psychology or special education, every reaction by the teachers was like I'm just going to giving them more work* (…) *When I was there, where I got in, I had already been to the departments and everything, I had already spoken to the teachers before, at the open days and I had known, they will have no problem with that so I also basically decided according to that* (…)."

Two participants (P3 and P4) attended open days organised by several faculties. Their visit was decisive in their choice of a field of study. Participant 3 eventually learned about his chosen field of study during a sports training camp he attended.

P3: *"Well, what led me to apply to university was a camp where I somehow found out my field. Basically students from that field were doing their practical training there and I somehow was getting interested in. I just went to it – it really caught my attention."*

2.4.3 The early stages of university studies

At the beginning of their studies, three respondents (P1, P2 and P4) took advantage of the guide services offered by each university support centre. The purpose of these

services is to help students with disabilities orient themselves within university buildings and the campus. Participants 3 took part in the orientation course on his first day of studies. During the course he was able to get acquainted with his classmates and lecturers. After this course, he participated in another one, which was voluntary. He also started studying at university during the Covid-19 pandemic and was required to begin his studies in a distance-learning format during the autumn semester.

P3: *"And otherwise… the beginnings… you just enrolled and you left for orientation course the same day. And the other beginnings of my studies continued that I finished one course and started the other one which was 'Expedice přes Bar' (a sport camp for people with disabilites – note from author). So I basically had 14 days of courses in a row.* (…) *Then basically only 14 days of classes when we barely even got to know each other and then boom, lockdown, covid and we were back home."*

2.4.4 Initial feelings from studies

Respondent 1 mentioned that he gradually adapted, and for Respondent 2, adapting to the new surroundings was challenging. Participants 3 felt unsure at first about his choice of academic field. Respondent 4 mentioned that the transition from grammar school to university was a pleasant change. At grammar school she had encountered intolerance from her classmates and underestimation by her teachers. In contrast, the beginnings of her university studies was surprisingly pleasant for her.

P4: *"So it was actually a big change for me when I smoothly transitioned from high school where I was still kind of seen as someone who could still see but it was already really hard for me in final grade, especially considering the group dynamic. Because everyone thought I pretend that with my vision and so on… I didn't use that cane and it was still like I have extra stuff, extra time for tests and that I can type on a computer and so on. And it was actually when my homeroom teacher was saying goodbye to me during giving me high school diploma she told me that I'm gonna look back on them very fondly.* (…) *That nobody will take that care of me like this at university. These were her last words."*

2.4.5 Disclosure of visual impairment

Respondent 2 tended to hide her disability, however, she revealed it immediately after forming friendships with her classmates. The other participants did not tend to hide their disability.

P4: *"So when I went to university I was just wondering I'd do this differently this time (compared to high school – note from author). And basically from the first day I walked in with my white cane and made it clear and that I somehow need everything in electronic version, that I only use that screen reader um… and that's how I presented myself. And suddenly everything like, basically all the issues I had at high school disappeared.*

Because I've never seen anyone taking it badly, maybe just misunderstandings, but never actual malice or anything like that."

P3: *"I'm really glad because before, I'd never be able to say it. But at the orientation camp, when we were sitting around the fire in circles, and during some introductions I usually wasn't able to say that I actually have visual impairment and so on."*

2.4.6 Reactions of others to the disclosed visual impairment

Participant 1 told us that other members of the group gradually adapted to his visual impairment. The participant who tended to hide her visual impairment mentioned that her classmates, to whom she disclosed her disability, needed time to adapt to it. She also mentioned that her other classmates during her bachelor's studies did not know about her disability. During the consecutive master's studies, she disclosed it to only one classmate, while the others still did not know about her disability and thought she ignores them. However, she was not able to recognise them. Participants 2 and 3 experienced curiosity from their classmates, with one individual finding this attention uncomfortable.

P3: *"Some of them asked more questions. Like sometimes and even now it still happens like when you've already explained for the umpteenth time what you can see, what you cannot see and what causes you difficulties. And you just keep repeating it over and over and it's like… exhausting."*

2.4.7 Challenges related to visual impairment

The participant who concealed her disability encountered a lack of understanding, which led to multiple uncomfortable situations.

P2: *"I have a problem when it comes to signing something and I can't sign of course and it feels like… since I don't know my classmates too much, they don't even know about it. So I can't just blurt it out to them right away and I feel like I'd miss having an assistant for things like that. But I guess it's only a small detail…"*

Participants 1, 2 and 4 had difficulty recognising their classmates and other people at university. For Participant 1 this problem resulted in anxiety about forming new relationships.

P4: *"But at college it was a little different because I was in duel-subject program. So I had actually um… two different groups but each subject had also combined classes – both full-time and mix-mode students yeah…* (…) *I mean that the group was split based on seminars you know…* (…) *So I basically never really had the same group at university. That made it even harder for me to meet someone, especially when I don't recognize them.* (…)*"*

Participant 4 also shared with us that she often faces communication barriers and emphasised the importance of raising awareness about how to interact with people with visual impairment.

P4: *"…, that communication itself can be complicated sometimes you know… like some people are really shy. It needs to be explained better to students and teachers sometimes. Like it's not awkward approaching someone and asking something.* (…) *And if someone sees me, they might call out me or something. So a lot of barriers come from communication itself."*

2.4.8 Expected process of getting acquainted with classmates

Only occasionally was studying identified as a priority for Participant 1. As a result, no expectaions were formed, and the he merely hoped for the conversation to continue after introducing himself. The other participant (P2) believed she would be accepted into the group with empathy and without bias.

2.4.9 Actual process of getting acquainted with classmates

For one respondent, interaction with classmates was primarily collegial communication. After a few unseccessful attempts to establish communication, he decided to withdraw and focus primarily on academic matters. Despite this, someone approached him sometimes.

P1: *"They were more like just talking among themselves and sometimes asked me something. I actually don't remember how the process of adaptation went. I guess it was more like we just saw each other sitting in the same spots and we got involved in discussions or something like that.* (…) *But mostly within context the school, not really outside of it.* (…)*"*

Another Participant (P3) became acquainted with other people during the adaptation course he attanded at the start of his bachelor's degree. During the consecutive master's degree, he got acquainted in spontaneous and natural matter.

2.4.10 Expectations regarding building social standing and status within the group

Participants 3 and 4 expected to make friends. Participant 1 expected to be included in the group, but he did not expect to participate in any activities representing the faculty.

2.4.11 Achieved social standing within the group and behavior of classmates

Participant 3 made a few friends during the first year of his bachelor's studies. However, they gradually grew apart over time. Since then, he had felt more like individualist and had not felt entirely comfortable. Additionally, he experiences feelings of resentiment, as he believes that some members of the department do not find him likeable and that he likely lacks understanding from these individuals.

P3: *"I don't wanna spit the department…* (…) *I just think some people got along with me less, some more. And they treated me accordingly."*

Most participants (P1, P2 and P3) made new friends after a longer period of their studies. Participant 3 formed new friendships during his consecutive master's degree and no longer felt like an individualist. Throughout their academic journey, all participants experienced supportive and helpful treatment from their peers (e. g., sharing class notes, assisting with signing the attendance sheet). However, Participant 4 interprets this assistance as an act of goodwill rather than a demonstration of friendship.

P4: *"And the willingness of help was mostly in the sense of assisting me during the class. It was purely focused on that kind of help, you know…* (…) *I really appreciate it when someone helps me with anything yeah…* (…) *Or maybe it was also because they already knew each other from dorms or something… And I was actually still living home…* (…) *I think a lot of those student social circles come from there…"*

Half of the participants (P1 and P3) evaluated their classmates' behaviour positively. They responded to the question "How do your classmates treat you?". Participants 1 and 4 described their relationship with peers as purely collegial. However, Participant 1 reconnected with his former grammar school classmates during the first semester, but they gradually stopped attending classes. He also experienced a friendly approach from his classmates, whereas Participant 3 faced a negative attitude from peers.

P3: *"And the same happened with classmates actually. If they didn't say anything and I didn't know they were there, I could just walk past them without any realizing they were here even if they were right next to me.* (…)*"*

2.4.12 Assumptions about peers' perceptions

Half of the participants (P2 and P3) believe that their classmates perceive them positively. Participant 1 states that he is unable to assess how his classmates perceive him. He also perceives that his classmates maintain a neutral attitude toward him. Additionally, he has experienced an attitude of appreciation and respect, while at the same time encountering an attitude of underestimation.

P1: *"Um… I don't actually remember the exact example, but I just feel like there was a time a classmate automatically assumed that I couldn't handle something. But I actually thought. If it was a prejudice or just that they couldn't imagine how I would do it.* (…) *We have already known each other better I was still surprised that someone would think I wouldn't go to cinema for example. Like they'd assumed You won't see anything anyway."*

2.4.13 Assumptions about university lecturers' perceptions

Only rarely Participant 2 experienced a feeling of being understood. On the other hand, the same participant, along with Participant 4, perceived signs of misunderstanding from their lecturers.

P4: *"And there's the other part, some people actually don't understand. Like right now, I have a professor who has been teaching me since my bachelor's degree, since*

my first grade till PhD studies. And she still has no idea how for example a computer with a screen reader works. It's more like they don't understand and they don't even want to see it, even though I try to explain. It's more about misunderstandings like that somebody forgets to prepare me something in electronic format you know… even they actually should. Or when they don't send it to the center where they convert the materials to electronic format. They may just forget or they don't do that on purpose."

Participants 2 and 3 assume that their lecturers perceive them in different ways.

P3: *"I'll tell you honestly. I feel that there are two extrems. It's like people see me as a genius or as a total idiot. Maybe it's because I was more of an individualist and so on. And sometimes when I wasn't fully myself, I ended up being more closed off than I wanted to be. And there were even those who seemed I have a mental disability beside all that. And there were also those people who really got I connect all the dots, everything…"*

Two Participants (P1, P4) think that their lecturers treat them similarly to other students. They also believe that they have probably gained the respect of their lecturers through their academic approach. Participant 4 also feels that she has experienced underestimating from her lecturers.

P1: *"*(…) *At least in the beginning, some people have might seen me as… I don't want to brag… but maybe as a slightly better student, cause I don't know… For example in one of our first semester's subjects, we had an exam and if we scored a C or better, we had to go to the professor's office for an oral exam. Basically his reason was that he wanted to get to know stronger students, so that applied to me too.* (…) *So I guess they saw me in a good light, as a student who goes to lecturers regularly, I was practically there always.* (…)*"*

2.4.14 Behaviour of academic lecturers

Participant 2 faced confrontation from her lecturers and she also mentioned that one of her lecturers refused to help her with academic matters.

P2: *"…, so I was taking notes on my phone and I was actually accused of not paying attention during the entire lesson, even though I was really taking my notes… And there were kind of situations… Or once I asked a lecturer for sending me a presentation yeah… that I couldn't take notes from that and I was told the professor doesn't provide the presentation.* (…)*"*

Participants 1 and 2 encountered a supportive approach.

P1: *"Of course, sometimes things happened. I've always preferred a communication via mail because I wasn't really comfy with in-person communications. So I'd send an mail about week in advance regarding exam accommodations, requesting specific adjustments. But there were a few times, at least once that the lecturer didn't respond. And I got really nervous, because I had studied for the exam.* (…) *That particular exam was written at a lecture hall where the seats have those tiny fold-out desks. Since I use*

magnifier and laptop, there was no way I could write there properly. (…) *So I waited for the professor and he was luckily very accommodating. He arranged for me to sit at a bigger table near the lecturer's desk.* (…)*"*

Occasionally, efforts were made to provide as much help as possible.

P4: *"*(…) *There were professors who were very helpful, sometimes maybe even too much. And on the other hand those who would go overboard like they would try to accommodate me in ways, that weren't really necessary. For example yeah, if everyone was taking a written exam, I expected to take a written exam too, just with the necessary adjustments* (…) *But instead of it, they would just decide to test me orally without asking me."*

Participant 1 feels that the lecturers likely attempted to ease tasks involving visual processing. Participant 3 perceives the behaviour of some lecturers as respectful, while noticing a lack of respect from others.

2.4.15 Surprising factors in mutual relationships

Most of the participants were surprised by different things. Participant 1 found the friendliness of his classmates surprising. Participant 3 told us that he was surprised by the paradoxical behaviour of his lecturers and Participant 4 was surprised by the change in how her lecturers' treat, which developed positively.

3 Discussion

Our qualitative study focuses on the social standing of university students with visual impairments among non-disabled classmates and lecturers. We were interested in what motivated the participants to pursue university studies, their initial experiences in higher education, and how they adapted to their new surroundings. We also wanted to understand their expectations regarding building their status and what their actual status was. Overall, we aimed to explore in depth the feelings of the participants and whether they had ever faced signs of discrimination or prejudice from their peers. Besides social aspects, Amin et al. (2021) or Bishop and Rhind (2011) also examine campus accessibility, the use of assistive technologies in studying, and the financial challenges faced by students with visual impairments. Myers and Bastian (2010) mention in their research that university students with VI often face academic and social challenges, thus developing their own means, methods and skills to adjust to academic life.

Table 3: *Overview of obtained results*

Category	Participant 1	Participant 2	Participant 3	Participant 4
1. Motivation for studying at university	Previous studies at grammar school, Knowledge deepening	Previous studies at grammar school		Previous studies at grammar school, Parental influence
2. Factors influencing the choice of a field of study			Open days, Sports camp	Talent, Job employability, Amount of visually based work, Reactions of others, Open days
3. The early stages of university studies	Guide services provided by support centre	Guide services provided by support centre	Sports and adaptation camp, Covid-19 pandemic	Guide services provided by support centre
4. Initial feelings from studies	Gradual adjustment	Hard adapting to the new surroundings	Uncertainty in choosing a field of study	Pleasant transition from grammar school to university
5. Disclosure of visual impairment	No hiding	Hiding it and gradual disclosure to her friends	No hiding	No hiding
6. Reactions of others to the disclosed visual impairment	Adapting to it	Gradual adapting to it, An an according to some peers, Curiosity	Curiosity resulting in the participant's annoyance	
7. Challenges related to visual impairment	Issues to recognise others	Others' unawareness and issues related to it, Issues to recognise others		Issues to recognise others, Communication barriers
8. Expected process of getting acquainted with classmates	Studying as a priority, Hoping for the developed conversation	Belief in being accepted into group without prejudices		
9. Actual process of getting acquainted with classmates	Collegial communication, Resigning after a few unseccessful attempts to conversate		Getting acquainted during the adaptation course, Spontaneous acquaintance during consecutive master's degree	
10. Expectations regarding building social standing and status within the group	Getting involved into group, No activities representing the faculty		New friends	New friends

Category	Participant 1	Participant 2	Participant 3	Participant 4
11. Achieved social standing within the group and behavior of classmates	Friends after a longer time, Supportive and helpful treat from classmates, Only collegial relationships, Friendly approach	Friends after a longer time, Supportive and helpful treat from classmates	New friends during the 1st year of studies and gradual loosing them, No understanding from some members of department, Friends after a longer time, Supportive and helpful treat from classmates, Negative treat	Supportive and helpful treat from classmates, Only collegial relationships
12. Assumptions about peers' perceptions	Inability to evaluate, Neutral attitude, Admiring approach from others, Underestimating approach from classmates	Positive perception by classmates	Positive perception by classmates	
13. Assumptions about university lecturers' perceptions	Standard treat, Respect due to academic matters	Feeling of understanding, Signs of misunderstanding, Different approaches	Different approaches	Signs of misunderstanding, Standard treat, Respect due to academic matters, Underestimation
14. Behaviour of academic lecturers	Welcoming approach, Effort to ease visually based work	Direct confrontation, Refusing to help her with academic matters, Welcoming approach	Respectful treat	Effort to help
15. Surprising factors in mutual relationships	Classmates' friendliness	Did not remember	Lecturers' paradoxical treat	Positive change of lecturers' treat

At the beginning of the interview, most of the participants told us that they were motivated to pursue higher education by their previous studies at grammar school. Although we did not find any explicit mentions in other studies that the participants were led to university studies by their previous education. It can generally be predicted that prior studies are one of the main criteria for motivation to continue studying. In the study by Kizilaslan and Kizilaslan (2018) we read that, according to participants, education is key for achieving their dreams and goals. Although the research questions were answered by eighth-grade students, we believe that the findings can be generalised to a broader range of age groups. One of our participants provided similar answer, stating that he was motivated to pursue university studies by his desire to expend and deepen knowledge in the academic field. This, in turn, increases his chances of succeeding in the labour market. Another participant mentioned that she was guided by her parents to enrol at university. Parental support was also observed in the research of Bishop and Rhind (2011), though rather from the perspective of general support throughout the entire academic journey.

One of our participants was influenced by the degree of future employability when choosing her academic field. According to Almog (2018), people with disabilities have a lower chance of employability compared to non-disabled people, regardless of their qualification level. Education can only predict employment if students with VI complete their higher education programme (Capella-McDonnall, 2005). It is generally known that people with higher education degree find employment in the labour market more easily.

Most of our participants utilised the services of university support centres for students with special needs. In the study by Bishop and Rhind (2011) the provision of services from local support centres was rated very highly by respondents studying at British universities. The support provided by centre staff was considered indispensable by the respondents in that study. However, the same research occasionally revealed cases where support was rejected. In one instance, a first-year student rejected support, despite having been recognised in high school as a student requiring academic adjustments. He wanted to fit in with his peers at university. Another participant even rejected the provided support throughout the entire course of study, despite being officially registered with the centre.

Each of our participants had different feelings about their studies. Half of them experienced feelings of uncertainty and had greater difficulty adapting to new surroundings, while the other two participants experienced very positive feelings. It can be predicted that our participants' feelings would not be the same, as they are related to individual experience and personality. Bishop and Rhind (2011) state that as soon as a student with VI enters university, they immediately face several challenges. Atkinson et al. (1998) categorised these challenges into four categories: attitudinal, institutional, enviromental and physical.

We were also interested in whether our participants disclosed their VI to their peers and how their peers reacted. Three participants have never hidden their impairment. During the adaptation course, one participant stepped out of his comfort zone and openly revealed his disability to his classmates. Another participant decided not to hide her impairment from the first day at university – she automatically started using a white cane, began using assistive technologies while studying, and was not afraid to ask for help. She had hidden her impairment during her previous studies, which resulted in several challenges. Almog (2018) states in the research that some respondents normalise their disability. Their reason was that they wanted to be like others and feel like others. In their opinion, everyone has some difficulties. Some of them even prefer people-first language. In the research by Bishop and Rhind (2011), one participant preferred that everyone immediately knew about their visual impairment.

On the other hand, another participant of ours tended to hide her VI from the beginning of her studies, disclosing it only to her closest friends after a long time. She thus independently orientates without using a white cane and does not utilise the services provided by the support centre, making her impairment not immediately visible. According to Amin et al. (2021), peer acceptance is generally good, but only some students are able to accept their classmates with disabilities as friends. In contrast, other peers struggle to accept the challenges faced by their classmates. However, there are also those who are genuinely understanding, but are initially unable to accept classmates with disabilities into their group because they do not feel ready. Despite this, students with VIs strive to adjust to their peer group and demonstrate that they can manage everything like others. Our participant experienced these exact feelings – she disclosed her impairment to some close friends, and for some, it took a long time to adapt to her impairment. Some classmates even thought she was ignoring them, but in reality, she was simply unable to recognise them. Similar findings appear in the study by Amin et al. (2021), where some people did not believe their visually impaired classmates' diagnoses until they showed them their disability card. The participant thus appeared just like their peers because of wearing glasses and no visibly differing from others.

In our study, all participants had a certain need to establish a particular level of social status. Unfortunately, people with disabilities experience stigma from others and cannot escape a stigma and negative perceptions in society (Amin, Sarnon, Akhir, Zakaria, & Badri, 2021). According to the authors, this occurs when society or group lacks in-depth knowledge about people with disabilities. One of their study's respondents experienced acceptance from classmates. However, some classmates also tended to underestimate the respondent. One of our participants also expressed the need for awareness-raising when she said: *"It needs to be explained better to students and teachers sometimes. Like it's not awkward approaching someone and asking something.*

(…) *And if someone sees me, they might call out me or something. So a lot of barriers come from communication itself.*" Another participant of ours also experienced signs of underestimation: "*We have already known each other better. I was still surprised that someone would think I wouldn't go to cinema for example.*" According to his statements, his classmates were surprised that he would go to the cinema with them, as they assumed he would not be able to see anything there. This highlights the need for social support, which all students with VIs should receive from their classmates and lecturers. Social support can, in turn, foster independent living for people with disabilities (Celeste & Grum, 2010). Additionally, social support is positively related to social skills, as these skills enable a person to seek and maintin social support (Elliott, Malecki, & Demaray, 2001).

When we asked our participants how do their classmates treat them, all participants stated that their classmates willingly helped them whenever they needed assistance. Amin et al. (2021) mentioned in their study, that there are always those who are willing to help their classmates with disabilities when needed.

All participants have experienced various types of treatment from their lecturers, and some of them also reported negative experiences. Two participants even mentioned that their lecturers treated them like their non-disabled peers, for which they were grateful. In contrast, in the research by Almog (2018), several respondents indicated that they were confronted by their lecturers, who insisted that despite their disability, they were still the same as others. However, the respondents were not able to normalise their impairment. Experiences of confrontation with lecturers also appeared in the account of one of our participants, when her lecturer refused to send her a presentation for the lesson. However, in our opinion, the lecturer is not obligated to send study materials to students, as they have the option to utilise note-taking services provided by support centres. It is likely that the lecturer intended to treat her the same as other students and there was nothing personal about it.

Since our research was conducted with only four participants from two Czech universities, it may serve as an inspiration for further, more extensive studies focusing on the social standing of university students with visual impairments among their non-disabled peers and lecturers. The findings may also be of interest to students with VIs currently studying at university, as well as to their classmates and lecturers. Additionally, they can be valuable to all academic staff who may potentially work with a student or colleague with a visual or other type of disability.

4 Conclusion

In this paper, we build upon the author's bachelor's thesis (Indráková, 2024), which focuses on the experiences of university students with visual impairment who interact daily within a group on non-disabled classmates and lecturers. Our study examines

how students with VI are perceived by their classmates and lecturers at university, along with their behaviour. The research sample consisted of four participants from two universities – Palacký University of Olomouc and the University of Ostrava. The overall responses of the participants indicated that, during their university studies, they generally experience supportive and kind treatment from both classmates and lecturers, although there are some exceptions. Similar findings have been reported in other studies addressing the same issue.

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(reviewed twice)

Jana Indráková
Institute of Special Education Studies
Faculty of Education
Palacký University of Olomouc
Žižkovo nám. 5
779 00 Olomouc
Czech Republic
e-mail: jana.indrakova02@upol.cz

The importance of foot function in musculoskeletal disorders of persons with visual impairment

(overview essay)

Kristína Tománková

Abstract: *Musculoskeletal dysfunctions are often the cause of pain and, if prolonged, cause demonstrable morphological changes that trigger central changes that can be identified and effectively influenced. It is essential that dysfunction appears as both a cause and a consequence of the morphological disorders of the musculoskeletal system. The occurrence of musculoskeletal dysfunction as well as disorders is typical for people with sensory impairments. People with visual impairments suffer from specific problems with walking and standing, which are described in this paper.*

Keywords: *gait, postural stability, movement stereotypes, balance, functional disorders, structural disorders*

1 Introduction

Functional musculoskeletal disorders are disorders in the soft tissues of the musculoskeletal system (skin, subcutaneous tissue, fascia, ligaments, contractile and non-contractile components of the muscle, periosteum, etc.), which cause very clinical manifestations. The most common is pain, followed by changes in the range of motion in joints, muscle strength, pain in attachments, etc. Functional musculoskeletal disorders are the most common causes of pain in the musculoskeletal system and are fully reversible with a correct approach. Functional musculoskeletal disorders most often arise from sub-optimally diagnosed, and therefore treated, reflex changes. Reflex changes are changes in the tone (resting tension) of soft tissues, usually in the sense of increasing tone, which in a living organism function as an "early warning system", providing the first information that some part of the musculoskeletal system is inadequately overloaded and self-repair mechanisms are no longer sufficient to prevent more permanent (structural) damage. Important criteria for functional

musculoskeletal disorders are reversibility and the absence of relevant structural changes. However, the most important feature is their chaining, or generalization. The concept of chaining is clinically explained by the absence of a separate occurrence of a disorder of the motor system. Usually, disorders also occur in other parts of the body and at different levels of motor control (Poděbradská & Šarmírová, 2017).

Very few published studies, especially current ones, have systematically and detailly focused on the effect of visual impairment on the development of gait, in a sense of concrete foot and other deformities on the lower limb. Orthopedic problems are quite common in blind individuals and should be dealt with separately (Khan, Abbas, Sherwani, Khan, Asif, & Kamal, 2023). They also belong to the scientists who have done the orthopedic evaluation of the blind and partially sighted individuals. The population included 242 blind students and 250 non-blind children. All the people were assessed for the orthopedic problems like degree of ligamentous laxity, spinal alignment, foot morphology and alignment of hips, knees and ankles. 139 children (57.4 %) were found to have laxity of the ligaments. 72 children (29.7 %) had spine deformities, out of which kyphosis was present in 34 (47.2 %), scoliosis in 23 (31.9 %), lordosis in 13 (18.0 %); 119 children (49.1 %) had foot deformities, 84 (34.7 %) children had mobile flat feet, 37 (15.2 %) children had knee deformities; 31 children had evidence of genu valgum while 6 showed genu varum deformity). Observation of posture showed that only 26 children had normal posture. 216 children (89.2 %) had varying degrees of postural abnormalities (the data was statistically significant $P < 0.05$). Visually handicapped children have delayed development of milestones and developed various musculoskeletal defects and disorders like spinal and foot deformities, a faulty posture, a typically awkward gait and generalized ligamentous laxity among others. Scranton, Clark, & McClosky (1978) examined of 157 children for musculoskeletal abnormalities at a regional school for the blind, too. The incidence of scoliosis was 9.5 percent; of foot deformity 53.5 percent; and of ligament laxity, 25 per cent. Orthopedists should evaluate blind children carefully and repeatedly for evidence of progressive deformity of the foot or spine.

2 Overview of research findings in the topic related to foot function in context of musculoskeletal disorders

It was observed a relationship between an individual's typical level of binocular visual function and the degree to which gaze is shifted toward the body. Thus, the gaze–gait relationship is sensitive to the level of sensory uncertainty, and deficits in binocular visual function (whether transient or long-standing) have systematic effects on gaze strategy in complex terrains. We conclude that binocular vision provides useful information for locating footholds during locomotion. Furthermore, we have demonstrated that combined eye/body tracking in natural environments can

be used to provide a more detailed understanding of the impact of a type of vision loss on the visuomotor control process of walking, a vital everyday task (Bonnen, Matthis, Gibaldi, Banks, Levi, & Hayhoe, 2021). The gait analysis results documented that blind child presented reduced walking velocity and step length, increased step width and external rotation of the foot progression angle, reduced ground reaction force and ankle maximum angle, moment and power in late stance, increased head flexion, decreased thorax flexion and pelvis anteversion, compared with the control group. The posturographic analysis showed equal skill level between blind children and normally sighted children when they close their eyes. The results are consistent with only one of the three hypotheses: namely, they prove that blind children's gait is influenced only by the absence of visually driven anticipatory control mechanisms (Gazzellini et al, 2016). Hallemans, Ortibus, Meire, & Aerts (2010) demonstrate specific differences in gait patterns between those with and without visual impairment. Differences are found in gait between both groups and both situations. Adults with a visual impairment walked with a shorter stride length, less trunk flexion and an earlier plantar foot contact at heel strike than sighted individuals. When sighted individuals were blindfolded (no vision condition) they showed similar gait adaptations as well as a slower walking speed, a lower cadence and limited movements of the hip and the ankle in the sagittal plane compared to a full vision condition. Results showed that even in an uncluttered environment vision is important for locomotion control. The differences between those with and without visual impairment, and between the full vision and no vision conditions, may reflect a more cautious walking strategy and adaptive changes employed to use the foot to probe the ground for haptic exploration. Schmid, Nardone, De Nunzio, Schmid, & Schieppati, (2007) solved, if visual information can be replaced by other sensory information in the control of static and dynamic equilibrium. They investigated the balancing behavior of acquired and congenitally blind subjects under static and dynamic conditions. During quiet stance, the center of foot pressure displacement was recorded and body swayed analyzed. Under dynamic conditions, subjects rode a platform continuously moving in the antero-posterior direction, with eyes opened and closed. Balance was inferred by the movement of markers fixed on malleolus, hip and head. Amplitude of oscillation and cross-correlation between body segment movements were computed. During stance, in normal subject's body sway was larger with eyes closed than opened. In blind subjects, sway was similar under both visual conditions, in turn like normal subjects with eyes closed. Under dynamic conditions, in normal subject's head and hip were partially stabilized in space with eyes opened but translated as much as the platform with eyes closed. In blind subject's head and hip displacements were similar eyes opened and eyes closed condition; with respect to normal subjects with eyes closed, body displacement was significantly larger with a stronger coupling between segments. Under both static and dynamic conditions, acquired and congenitally

blind subjects had similar behavior. They conclude that long-term absence of visual information cannot be substituted by other sensory inputs. These results are at variance with the notion of compensatory cross-modal plasticity in blind subjects and strengthen the hypothesis that vision plays an obligatory role in the processing and integration of other sensory inputs for the selection of the balancing strategy in the control of equilibrium.

Locomotion of children and adults with a visual impairment was compared to that of age-related individuals with normal vision in study of Hallemans, Ortibus, Truijen, & Meire (2011). Differences between groups, relationships with age and possible interaction effects were investigated. With increasing age overall improvements in gait parameters are observed. Differences between groups were a slower walking speed, a shorter stride length, a prolonged duration of stance and of double support in the individuals with visual impairment. These may be considered either as adaptations to balance problems or as strategies to allow foot to probe the ground. The study of Easton, Greene, DiZio, & Lackner (1998) assessed whether stationary auditory information could affect body and head sway (as does visual and haptic information) in sighted and congenitally blind people. The results rule out a deficit model of spatial hearing in blind people and are consistent with one version of a compensation model. Analysis of maximum cross-correlations between center-of-pressure and head sway, and associated time lags suggest that blind and sighted people may use different sensorimotor strategies to achieve stability.

Vision is of paramount importance in regulating adaptive gait. Using three-dimensional motion analysis, the current study investigated how central visual field loss affects step ascent. Movement kinematics assessed the period immediately prior to and during step ascent. Compared to visual normal participants, patients with central visual field exhibited a lower lead foot horizontal crossing velocity, increased lead limb swing time and increased head flexion (looking down at more immediate areas of the ground/step). They also took longer to initiate the step up, transfer weight to the lead foot upon landing on the upper level and increased trail limb swing time when negotiating the medium and high step height. Increased variability was also shown in several dependent measures. Data indicates that during a step ascent, patients with central visual fields exhibit a cautious stepping strategy when compared to visual normal participants. This cautious strategy becomes increasingly evident when negotiating higher step heights, as shown by an increased planning time prior to entering the relatively unstable period of single support during the step up. The increased variability among central visual field patients increases their likelihood of experiencing dynamic instability and falling during step ascent (Timmis, Scarfe, Tabrett, & Pardhan, 2014. A series of experiments were designed by Velazquez & Bazan (2010) to determine the performances of healthy sighted and blind voluntary subjects. Tests evaluated the perception of simple shapes, patterns, and directional

instructions. Results show that some information is discriminable, and that tactile-foot stimulation could be used for a wide number of applications in human-machine interaction. Results suggest that the blind perform better in some key tasks and that it is feasible to exploit podotactile feedback for mobility and navigation assistance of the blind. In study of Buchanan, & Horak (2001) flexibility in postural coordination was examined by inducing transitions between postural patterns. To study the adaptation of the postural control system, we had subjects standing on a support surface undergoing increases and decreases in translation frequency with the eyes open and closed. Kinematic measures of sagittal plane body motion revealed a gradual transition between these two postural patterns as a function of frequency scaling. In both the increasing and decreasing frequency conditions with visual input, center of mass displacements gradually decreased and increased, respectively, whereas upper-trunk (and head) displacement decreased gradually within the ride pattern until a head fixed pattern was observed without any significant changes in displacement for translation frequencies at and above 0.6 Hz. Without visual input, the scaling of the ride pattern was similar except the transition to the head fixed pattern never emerged with increasing frequency; instead, a less stable pattern exhibiting slow drift in head-trunk anterior-posterior motion (drift pattern) was observed at and above 0.5 Hz oscillations. The stability of the head fixed pattern at fast frequencies was clearly dependent on visual input suggesting that vision was more critical for trunk and head control in space at high than low translation frequencies. Head velocity was kept constant, and lower with vision, as translation frequency (and velocity) changed suggesting a head velocity threshold constraint across postural patterns. The gradual transition from the ride to the head fixed pattern was made possible by the recruitment of available degrees of freedom in the form of ankle, then knee, and then hip joint motion. In turn, the transition from the head fixed or drift pattern was made possible by the gradual suppression of available degrees of freedom in the form of reducing hips, then knee, and then ankle motion. The gradual change in postural kinematics without instabilities and hysteresis suggests that the ability to recruit and suppress biomechanical degrees of freedom allows the postural control system to gradually change postural strategies without suffering a loss of stability. The results are discussed considering possible self-organizing mechanisms in the multisensory control of posture. Khan, Abbas, Sherwani, Khan, Asif, & Kamal, 2023 described that an average blind child had a typical "Blind Posture", A protective standing posture; keeping the feet apart, knees and hips partially flexed, trunk also bent often with an increased dorsal kyphosis and drooping shoulders and trying to bring one or both arms forwards. Most of these children kept their muscles tense until they were sure of what was going to happen. Most of the totally blind children felt uneasy when asked to stand with their feet together and some of them tended to lose their balance. They also lose balance easily while standing on one foot or tip toed. Erect posture

was more confident in children with partial vision. An average blind child who was neurologically normal walked with a typical gait (Blind gait). During the process of walking, they kept their feet apart and abducted, knees and hips flexed, and the body thrown forwards; one or both arms stretched in front and often trying to hold objects with one or both hands. On observing the feet more closely, the pattern was such that with one foot on the ground, the other was taken tentatively straight forwards a short distance, then while still in the air, moved outwards a little and then placed on the ground. Most of these children had a rather slow and apprehensive gait, more so, when asked to walk in a relatively strange place. The degree of blindness had a direct effect on posture and gait. Children who were partially sighted and even the children who became blind at a later stage had a more confident gait and better posture as compared to completely blind children. Children who had partial left-over vision in one eye and were completely blind in the other, tended to deviate to the side of vision, on walking. Blind people walk with a wide based gait to increase their effective supporting surface. They also keep their knees and hips flexed to lower their center of gravity to maintain the balance. This is again in keeping with the biomechanics of gait i. e. the lower the center of gravity lies, the greater must be the arc which an unbalancing force must describe. The blind throws his body forwards to gain propulsion. They keep the arms stretched forwards to transfer their momentum from one side to the other to prevent undue twisting of the body. A good example of this is a tight rope walker in the circus who uses extension of his arms to transfer momentum. So, he does not need to tilt at all. Only a little shift may become dangerous for him. When blind children walk, they move in a definite pattern i. e. fixing one foot on the ground and the other is taken tentatively straight forwards for a short distance, then while still in the air it is moved outwards a little and then placed on the ground. It was interesting to observe these blind people working in the workshops for the blind. They are highly skilled persons, making good use of their finger-tip sensations and their intelligence, producing the masterly results which one can only imagine, showing the hidden potential each one of them have.

3 Conclusion

Functional disorders of the musculoskeletal system in people with visual impairments are a complex of reflex changes due to the action of various causes. The main causes include stress, muscle overload, incorrect movement habits when walking and standing, balance disorders, and therefore the overall uneconomical loading of individual parts of the body; these cause reflex changes, which over time naturally lead to functional disorders. In general, the most common functional disorders of the musculoskeletal system in people with visual impairments include shortened and weakened muscles, muscle imbalance, movement and postural stereotypes, muscle

coordination disorders, and hypomobility, possibly. Functional disorders are so-called chained in the body, and a whole cascade of reflex changes is created. In practice, this means that a disorder in one part of the musculoskeletal system will cause a disorder in other parts of the body. In addition to its generalization or chaining, a functional disorder is typical for its reversibility. However, if the functional disorder is not resolved, there is a risk of a structural disorder, including foot disorders. Foot has a key role in this complex. Foot represents the base of the body, onto which the result of the combination of various forces that arise when the subject is moving or standing is projected. Functional disorders develop gradually, so it is very important to detect them in time and prevent structural changes that cannot be removed at a later age with specific exercises. It has been proven that functional disorders of the muscular system that are detected in time can be effectively compensated for using targeted exercise equipment. These are balancing (compensatory) exercises that can affect individual components of the musculoskeletal system. For people with visual impairments, it is especially important not to neglect practicing proper walking and standing. Psychotherapy also has its place, which is intended to prevent or eliminate the impact of stress in the somatic area.

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(reviewed twice)

Assist. Prof. Kristína Tománková, Ph.D.
Palacký University
Žižkovo nám. 5
771 40 Olomouc
Czech Republic
e-mail: kristina.tomankova@upol.cz

Empowering marginalized communities through transformative theatre: A case study of Divadlo bez domova and the A.N.T.Y.G.O.N.E. methodology

(overview essay)

Patrik Krebs

Abstract: *The transformative power of theatre has long been recognized as a tool for social change and personal empowerment. This article examines the work of Divadlo bez domova (Theatre With No Home), a unique Slovak theatre, with a focus on the A.N.T.Y.G.O.N.E. methodology. Theatre creators have adapted the classic Greek tragedy, drawing from its central plot, and through various theatrical techniques, have given a voice to marginalized groups often unheard in society—homeless individuals, people with psychiatric diagnoses or physical disabilities, former prisoners and other disadvantaged people. The article analyzes the theoretical foundations of dramatherapy, emphasizing themes of identity, power, catharsis, and other phenomena from Greek culture (e.g., kalokagathia), while exploring how the A.N.T.Y.G.O.N.E. methodology integrates storytelling, mask-making, and diverse theatrical and artistic approaches (e.g., glossolalia and rhythm) to foster creative expression. Additionally, it presents a case study of Antigone according to Sophocles and Others the production developed by Divadlo bez domova, highlighting their role in reflecting contemporary social realities. The discussion underscores the impact of this work on participants and audiences, offering recommendations for professionals in theatre, dramatherapy, and education.*

Keywords: *inclusive theatre, dramatherapy, homeless individuals, people with psychiatric diagnoses, physically disabled individuals, Antigone, A.N.T.Y.G.O.N.E. methodology*

1 Introduction

Theatre as a medium possesses the ability to challenge societal norms, foster dialogue, and, in the case of *Divadlo bez domova*, provides a platform for voices often silenced or unheard. This role is particularly crucial in inclusive theatre, which integrates marginalized communities into the creative process. Since 2006, *Divadlo bez domova*,

a Slovak theatre group, has epitomized this approach by merging artistic innovation with social activism. Their adaptation of *Antigone*, a classic tragedy, transcends its ancient origins to address contemporary issues of injustice and resilience. The play, *Antigone according to Sophocles and others*, premiered on October 25, 2023, in Bratislava may show us more than just the another adaptation of a classic piece of art.

Divadlo bez domova is a unique artistic initiative blending theatre group with a social mission. It serves as an inclusive space where professional theatre creators cooperate with individuals from vulnerable groups to produce authentic, emotional, and inspiring performances. The theatre emphasizes that every individual, regardless of their circumstances, has value and the right to their own voice. It remains the only theatre in Slovakia consistently working with homeless men and women alongside other marginalized people to create performances for both professional and public audiences. Regularly performing at Pistoriho Palace in Bratislava, the group also stages plays at festivals and unconventional venues such as prisons, nursing homes, psychiatric hospitals, schools or public spaces. In addition to regular theatre productions, they organize workshops for students, teachers, professionals in helping professions, youth workers, as well as artists and cultural activists. They coordinate or are partner in numerous international projects and have hosted the International Festival of Homeless Theatres, ERROR, since 2006—the only festival of its kind in Europe and likely the world. All actors are financially compensated for their artistic contributions.

2 Theater

2.1 Creators and directors

Divadlo bez domova is led by a team of professional theatre artists and social workers who bring creative perspectives and distinctive artistic styles to their productions. Artistic directors Uršuľa Kovalyk and Patrik Krebs, who have led the theatre since its beginning, form its creative and life partnership. Over the past decade, the team has been joined by social worker Tomáš Kubiš, who also performs in some productions, and Jozef Bujna, responsible for project finances and technical support. The leading creators focus on work rooted in the real experiences of participants. While some plays are authored by Kovalyk (e. g., *Čisté zviera* and *Krasojazdkyňa*), others are adaptations (e. g., *Cirkus Madraš* by Daniil Kharms and *Antigone*), and some are collectively devised works (e. g., *Kuca Paca*, *Sny*, *Flashback…*). Their direction extends beyond artistic leadership to supporting participants in overcoming personal challenges, adding profound authenticity to the performances. Their work often includes long-term drama-therapeutic processes, involving activities such as playing musi-

cal instruments, movement, rhythm, art techniques, regular reflections, counseling circles, work with symbols, and more.

2.2 The acting ensemble

A significant portion of the ensemble consists of individuals from socially vulnerable groups, including:

- **Homeless individuals**, who draw from their personal experiences to highlight issues of social exclusion and the challenges they face.
- **People with physical disabilities**, demonstrating that theatre has no physical limitations and showcasing new perspectives in artistic creation.
- **People with psychiatric diagnoses**, finding paths to self-expression and personal healing through theatre.
- **Former prisoners**, discovering ways to reintegrate into society and regain confidence in their abilities through theatre.

Some actors (e. g., homeless individuals) also serve as personal assistants to physically disabled colleagues, both onstage and during their journeys to and from rehearsals and performances. This is one of great side effects of the drama-therapeutic approach.

2.3 Themes and messages

The productions of *Divadlo bez domova* address pressing social issues such as prejudice, discrimination, poverty, and mental health. Often based on the authentic life stories of the actors, these plays provide unique insights into realities that others may only know secondhand. It is helping wide society to understand several topics, including taboos thanks to the arts and at this point their work is reaching another level of awareness.

2.4 Significance and impact

This theatre dismantles barriers between mainstream society and marginalized groups. Its work inspires dialogue, raises awareness of critical issues, and demonstrates that theatre can be a powerful tool for positive change. Beyond its artistic contributions, *Divadlo bez domova* is a deeply humanistic institution, enabling participants to help themselves according to their abilities, support one another, and inspire audiences to reflect on life and the world around them in unexpected and fresh ways. The article further explores the unique approach of *Divadlo bez domova* through the A.N.T.Y.G.O.N.E. methodology, examining its potential to empower participants and engage audiences in meaningful dialogue. The analysis of this work and its broader implications aims to inspire other practitioners in dramatherapy and education.

3 Methodology

The A.N.T.Y.G.O.N.E. method is a specific artistic-therapeutic-pedagogical tool aimed at systematically supporting people with disadvantages or others who, for some reason, are faced with dilemmas about what is legal/illegal, right/wrong, possible/impossible, appropriate/inappropriate, and similar issues. It fosters the development of critical thinking and the integration of experiences that might initially seem unacceptable in society (such as breaking the law or challenging a taboo). The name is an acronym representing the steps of the process, designed to ensure active learning through reflection, interaction, and application of new knowledge. This approach is applied to creating a performance rooted in ancient traditions but highly relevant today, exploring the timeless dilemma of what it means to break secular law in the name of moral/transcendental or deeply personal principles. The method was developed during a European project involving four organizations: Teatro alla Guilla from Sicily (the project coordinator), Kulturanova from Serbia, Alter Ego (X) from France, and Slovakia's Divadlo bez domova.

This method focuses on developing skills such as problem identification, information analysis, solution design, and self-reflection. Its implementation is divided into several phases, each with clear educational goals:

1. **Adjust prior knowledge:** A space to refresh previous knowledge and create a foundation for new learning. In the context of Greek drama, this includes the broader context of Greek theater, tragedy, mythology, history, architecture, and related fields to unify the creative group's knowledge for subsequent collaborative work.
2. **Navigating objectives:** Establishing clear objectives explicitly linked to the creative process, such as whether the aim is a workshop (short-, medium-, or long-term) or producing a public performance.
3. **Taking and developing a critical approach:** Participants are encouraged to analyze and evaluate situations, ideally from their own lives or those close to them, fostering independent thinking and analysis. Themes include laws and their violation, the adequacy of punishment, and the moral dilemmas or ambiguities surrounding legal transgressions, allowing for multiple perspectives on a single act.
4. **Y – questions and searching for answers:** Engaging in discussions and posing open-ended questions to deepen understanding of the topic.
5. **Generating personal solutions:** Participants create their own proposals and practical applications of what they've learned. Sharing personal experiences can facilitate connections and inspire unexpected solutions.
6. **Organizing results:** Systematically arranging findings for a meaningful theatrical presentation.

7. **New knowledge and its application:** Extending and solidifying what's been learned through theatrical depictions of various scenarios, which may or may not be part of the final performance.
8. **Evaluation and reflection:** Receiving feedback on the entire process, analyzing successes and shortcomings. Constantly reflecting on the artistic work and personal life experiences strengthens the therapeutic aspect, supporting participants in understanding the world and their place in it.

The method is practical and adaptable to a wide range of educational disciplines, offering possibilities for customization to meet individual participant needs. Directors and theater practitioners act as facilitators, motivating and supporting the creative process. The method draws inspiration both from Sophocles' works and the personal experiences of participants or their communities, as well as broader societal narratives. It is particularly suitable for disadvantaged groups but can also be applied to any creative team, including professional theater ensembles.

For a detailed breakdown of this method, refer to the following materials:

- In Slovak: Príručka A.N.T.Y.G.O.N.E.
- In English: A.N.T.Y.G.O.N.E. Handbook
  More about the project: ANTYGONE Project

Specific tools included in the A.N.T.Y.G.O.N.E. method:

- **Glossolalia:** Using nonsensical vocalizations to overcome language barriers and access deeper emotional states.
- **Rhythmic exercises:** Encouraging physical synchronization to foster group cohesion.
- **Mask creation:** Symbolizing alternative identities and exploring personal stories.
- **Storytelling:** Connecting mythological and personal narratives to enhance engagement.

Divadlo bez domova emphasizes the adaptability of this method and recommends modifications to suit various demographic groups and workshop formats.

More on glossolalia: Glossolalia (incomprehensible or "invented" speech often associated with spiritual or improvisational expressions) in theater is an innovative way to emphasize emotional, aesthetic, and experimental dimensions of a performance. Here are some creative uses:

1. **Emotional expression through sound:** Conveying intense emotions without specific words using rhythm, intonation, and intensity to transcend language barriers. *Example*: In dramatic moments where a character cannot express feelings with words (e. g., in shock or ecstasy), glossolalia can replace language to heighten the scene's impact.

2. **Symbolism and mystification**: Creating an intuitive, symbolic language that attributes mystery or transcendence to characters (e. g., shamans, prophets, or supernatural beings). *Example*: In mythological or spiritual themes, glossolalia can symbolize contact with other dimensions or divine forces.
3. **Rhythmic and musical element**: Acting as a rhythmic or vocal component in musical-theater productions, emphasizing sound quality over language. *Example*: In avant-garde theater, such as productions inspired by Jerzy Grotowski, glossolalia can enhance actors' physical and vocal expression.

4 Effect and inspiration

4.1 Comedic effect

In theater, glossolalia can also function as a humorous element. The use of an unintelligible language in an unexpected or absurd context can entertain the audience.

Example: In parodies or absurd theatrical plays, a character might speak in a «pseudo-language,» creating a comedic contrast between the form and content.

4.2 Creating alternative worlds

Glossolalia can be employed to simulate a language spoken by characters in an imaginary world. This approach is common in science fiction or fantasy works.

Example: In plays set in alternate realities, glossolalia can help create an authentic cultural identity for the characters.

4.3 Supporting improvisation

Using glossolalia can encourage actors' improvisation and deepen their connection with the character. The unintelligible speech allows actors to experiment with tone, gestures, and expressions without the constraints of rational language. If actors understand their characters' essence (e. g., a king, a chorus, Antigone), they can communicate or react without needing specific text or lines, which can be limiting, especially at the beginning of rehearsals.

Example: In training exercises or as part of a theatrical workshop, glossolalia can help actors overcome linguistic stereotypes and develop authentic physical expression. They can focus on actions rather than the words or lines of the characters, which might initially feel restrictive.

4.4 Inspirations and examples

- **Jerzy Grotowski:** Glossolalia was one of the experimental tools in his «Poor Theatre.»
- **Antonin Artaud:** In his «Theatre of Cruelty,» Artaud used sound as raw expression, often incorporating elements of unintelligible language.
- **Theatre of the Absurd:** Plays by Samuel Beckett or Eugène Ionesco frequently contain elements of linguistic chaos, reminiscent of glossolalia.

4.5 Conclusion on glossolalia

Glossolalia in theater is a powerful tool that transcends the boundaries of traditional language, engaging the audience on intuitive, emotional, and aesthetic levels. It is a technique that opens new possibilities for experimental creation, enabling actors and audiences to experience language in its pure, sound-based form.

4.6 Rhythmic exercises

Rhythmic exercises and group cohesion inspired by the Feldenkrais Method and work with the body and speech.

Rhythmic exercises are an effective tool for building physical and emotional harmony within a group. They focus on synchronizing movement and voice, creating a sense of unity and flow. The approach, based on the Feldenkrais Method—emphasizing awareness of one's body—can enrich these exercises by fostering a deep connection with individuality and the shared rhythm of the group.

4.7 Inspirations from the Feldenkrais Method

The Feldenkrais Method emphasizes conscious awareness of movement and its quality. The author of the method is also highlighting: What I am after is more flexible minds, not just more flexible bodies (Feldenkrais, 1985).

In the context of rhythmic exercises, it can inspire the following:

- **Rhythmic exploration:** The group begins with simple movements (e. g., tapping hands on thighs or walking in rhythm) while participants focus on the fluidity of motion and its relationship to breathing. This approach highlights that rhythm arises not only from external structures but also from the body's internal settings.
- **Conscious engagement of joints and muscles:** By applying Feldenkrais principles, participants can sense the differences between tension and relaxation, leading to more precise and natural synchronization of movement.

Example exercise: In small groups, participants imitate the rhythm set by the facilitator, who varies the tempo or dynamics. Emphasis is placed on perceiving how the body adapts to different rhythmic impulses. For individuals with severe physical dis-

abilities, responding to rhythm might be easier with one part of the body and nearly impossible with another. The aim of these exercises is to discover and possibly expand the boundaries of the body's perception and reaction to music or sound.

4.8 Rhythmic exercises with body and words

Working with rhythm involves not just movement but also sound. The combination of verbal rhythms and movements creates a holistic form of expression:

1. **Body rhythms:** Clapping, tapping, stomping, or other sounds produced by the body serve as fundamental elements. Each group member can contribute their own "rhythmic signature," fostering a dynamic dialogue among participants.
2. **Verbal phrases:** Verbal rhythms, which can include simple words or phrases, help synchronize voice and body. For example:
   - Pronouncing syllables like "ta-ta-ta" or "pa-ta-pa," where each movement aligns with a syllable.
   - Working with text (e. g., a word, name, or line of dialogue), focusing on the rhythm of speech and its connection to movement.

Example: Participants form a circle where each person adds one rhythmic element (a word, movement, or sound). The pattern is repeated and gradually unified, achieving group synchronization. Such exercises also enhance memory, articulation, breath control, and more.

The importance of synchronization and group dynamics

Synchronization in rhythmic exercises fosters a sense of belonging, requiring participants to tune into tempo, intonation, and intensity. Everyone must connect with the group. Research shows that shared rhythmic activities activate mirror neurons, improving empathy and building trust among group members. Many ancient rituals featured synchronized movement, singing, or recitation, connecting participants not only to each other but also to the themes, messages, or universal materials conveyed by ancient Greek tragedies and myths.

This prompted a deep discussion at Divadlo bez domova (Theatre With No Home) about the meaning of the Greek word *kalokagathia*. Below, we reflect on this concept.

Kalokagathia in the context of physical disabilities

Kalokagathia, the Greek ideal of harmony between body and soul, represents a philosophical concept of the perfect union of physical beauty (*kalos*) and moral virtue (*agathos*). While universally inspiring, this ideal poses challenges when applied to contemporary views on the body, especially regarding physical disabilities. How can

this principle endure in a society that acknowledges the diversity of physical forms and experiences?

4.9 Redefining "beauty"

The Greeks emphasized harmony, proportion, and functionality of the body as reflections of inner virtue. However, modern notions of beauty expand this view to include acceptance and celebration of diverse bodies, which can be equally harmonious and beautiful. For example, in the context of a person with a physical disability, beauty might manifest in the radiance of their character, courage, and ability to overcome challenges.

Picture 1: *Theater actors*

Some thought-provoking questions include:

- What does physical harmony mean for individuals with limited mobility?
- Can mental strength and creativity be equivalent components of "physical" beauty?

Actors with physical disabilities have expressed that "harmonizing the external and internal aspects of a person" is not strictly dependent on classical definitions of the body. It may instead manifest in how one embraces their body as a tool for communication, art, or introspection.

4.10 The value of experience and individuality

For individuals with physical disabilities, *kalokagathia* may be realized through unique ways of developing personality and demonstrating inner strength. For instance, an actress in a wheelchair may bring a new dimension to dramatic art through her movement limitations, leading to innovative uses of space and gestures.

Such cases illustrate that *kalokagathia* does not need to be confined to achieving a physical ideal. It can become synonymous with authenticity and inner harmony.

4.11 Universal principles and personal transformation

In the spirit of *kalokagathia*, physical disability can be seen not merely as a limitation but as a challenge for transformation:

1. **Work with the body:** Movement therapies, such as dance or physiotherapeutic methods, can support the development of bodily harmony.
2. **Perception of beauty through empathy:** Artistic projects uniting different physical realities can break stereotypes about what is considered "beautiful."

For Divadlo bez domova, this theme brought "unexpected moments of realization about the complexity of generalizations or the pursuit of universal truths." *Kalokagathia* challenges us to seek beauty and value in every individual, regardless of physical parameters. This ideal can be applied in the modern world as a path toward inclusion and the celebration of diversity.

More on mask creation

The creation of masks in the artistic work of Divadlo bez domova was not only a technical challenge but also a space for exploring identity, emotions, and the relationship to one's own body. In Greek theater, masks represented more than just physical protection or tools to amplify the voice – they served to create universal characters capable of expressing archetypal stories and emotions. This universality also posed a challenge in our process, as each mask had to authentically represent its creator or wearer while maintaining a unified artistic language.

Picture 2: *Antigona I*

Working with masks revealed hidden potential for personal expression. Many faced questions during the mask-making process: Who am I when I'm behind the mask? What new identity can I adopt? This introspection allowed us to perceive the mask not only as an artistic object but as a mirror reflecting our internal experiences.

Beyond the technical process of crafting masks from cut plaster bandages, wearing them brought physical and emotional experiences. We discovered that a mask could enhance movements and gestures, amplify or soften the perception of one's voice, breath, and space. Some colleagues felt "more relaxed" and "braver" when wearing a mask, while others initially experienced a sense of claustrophobia or withdrawal. These reactions became a key moment for group reflection – how can we overcome inner blocks through the creative process?

Another dimension was creating collective scenes where masks served as a synchronization tool. Grouping actors in masks required increased coordination and trust in non-verbal communication. Through this work, we discovered that masks not only transform individuals but also create new dynamics within the group.

In conclusion, mask-making was not only a creative process but also a means of rediscovering the potential of theater: connecting tradition with personal expression, stepping beyond comfort zones, and strengthening collective bonds. This experience taught us that a mask, although seemingly physical, carries deep symbolic significance and can be a tool for personal transformation and expanding artistic boundaries.

5 Case study: *Antigone according to Sophocles and others*

The production *Antigone according to Sophocles and others* merges ancient themes with modern realities. It emerged from the A.N.T.Y.G.O.N.E. methodology, which Divadlo bez domova worked on between 2021–2023. Like all their other theatrical performances, this one includes actors with experiences of homelessness, disabilities, and social exclusion.

Key elements:

- **Universal themes:** Issues of power, justice, and morality resonate across time and cultures.
- **Minimalist staging:** Symbolic props and the chorus' interaction create a sparse yet impactful aesthetic.
- **Personal stories:** Ensemble members contribute their narratives, enriching the plot with authenticity.

A poignant quote from the play: *"I came into this world to love, not to hate,"* (Sofokles, 2016) emphasizes a positive outlook on life and a choice in how to view the world.

Antigone as a mirror of contemporary society

The production *Antigone according to Sophocles and others* is not merely a reinterpretation of an ancient tragedy but a reflection of today's society. It stands out by blending Sophocles' timeless text with authentic accounts from actors living on the fringes of society.

Hearing the story of someone whose reality led them to break the law – for instance, breaking into an abandoned cabin to survive a freezing night – presents themes that provoke thought. What or who is the true cause of such law-breaking?

Picture 3: *Antigona II*

Another example in the play concerns the laws governing railways in Slovakia, which require individuals with disabilities to notify the railway company 48 hours in advance if they need a lifting platform for their wheelchair. How does one follow such a law when needing to attend a friend's unexpected funeral the next day? Such contemporary connections enrich *Antigone* with a new resonance.

Sophocles' classics in the context of today

At the heart of the production is the immortal story of Antigone defying King Creon by burying her brother Polyneices, despite it being against the law. The conflict between divine and human laws reverberates in every era, but here, it gains greater significance through its connection to the social realities of the actors. Their voices and life experiences – struggles with homelessness, addiction, or social exclusion – bring unparalleled authenticity to the performance.

Critics praise this fusion as particularly strong, underlining that the connection of ancient tragedy with the personal confessions of the actors, whose lives and everyday struggles often resemble tragedy itself (Jánošová, 2023). It is these parallels that give the production its universality, making issues of justice, power and human dignity more relevant than ever.

Minimalist aesthetics and symbolism

The scenography and costumes rely on minimalist yet powerful elements. Plaster masks and white robes evoke classical Greek theater while symbolizing anonymity and the facelessness of the actors. The scene is dominated by a golden throne made of a wheelchair, which symbolises power built on shaky foundations and dependence on the system (Ryhtarčíková, 2023).

Slow movements and monotonous music create a hypnotic effect, which Janosova describes as a contemplative space for contemplating the nature of the conflict between Antigone and Creon, between compassion and cold rationality (Jánošová, 2023).

Giving voice to the marginalized

The most potent aspect of the production lies in the personal testimonies of the actors. Their stories, embedded in the text of the play, create a stark contrast between the everyday "transgressions" of the poor and defenseless and the abuse of power by the rich and powerful. Each actor has a story to tell, and the audience is left with the question – did they even have a choice? Could they have acted differently? (Rychtarčíková, 2023)

For example, one actor tells of stealing food, another of losing his home due to debt. These personal accounts are interspersed with lines from the play, creating a synergy between text and reality. Antigone's statement "I came into this world to love, not to hate" (Sofokles, 2016) takes on a new dimension here – it is not just the attitude of a defiant heroine, but also a call to humanity in our own world.

Creon's character is portrayed in the production as an archetype of power that manipulates and exploits the vulnerable. Jánošová mentions the scene where Creon buys votes with alcohol (Jánošová, 2023) as an actual image of political manipulation. This moment is a reminder that issues of abuse of power and exploitation of the most vulnerable are timeless

Divadlo bez domova does not try to offer ready-made answers, but asks questions: What is the value of human life in a system that privileges laws over compassion? Where is the line between justice and tyranny? How can society change the fate of those on its margins?

As the critics writes, the production reveals the deep layers not only of Antigone's defiance, but also of human rights, dignity and the need to be heard (Rychtarčíková, 2023). It is this combination of classical tragedy and personal confessions that makes the show a unique piece of theatre that resonates deeply with today's audiences.

This performance is proof that theatre can be more than art – it can be a voice for those who are silenced and a call for change.

6 Discussion

After each performance by Divadlo bez domova, a discussion with the audience follows. The impact of *Antigone according to Sophocles and others* is twofold:

- **Social empowerment:** Participants gain self-confidence, self-awareness, and a sense of belonging. They have a platform to express their thoughts and perspectives.
- **Audience reflection:** The audience is encouraged to respond, comment, and confront societal injustices, pondering their role in this dynamic. Sharing personal experiences with law-breaking can open up further topics and raise awareness of broader issues like homelessness, poverty, social exclusion, and the rights of disabled individuals.

The A.N.T.Y.G.O.N.E. methodology's focus on personal and collective transformation positions it as a valuable tool for art therapy and education, both within the theater group and externally with audiences.

6.1 Recommendations from Divadlo bez domova

To maximize the potential of the A.N.T.Y.G.O.N.E. methodology, experts should consider the following key approaches:

1. **Integrate historical context**
   Deepen engagement by exploring the myths and historical narratives behind the material.
2. **Balance creativity and structure**
   Establish clear objectives while encouraging improvisation to foster a dynamic creative process.
3. **Adapt to participants' needs**
   Adjust activities to the abilities and experiences of the group members, whether working with marginalized communities, individuals with disabilities, or those facing difficult life circumstances.

6.2 Additional insights

The team emphasizes that the methodology's value lies in its adaptability to individual participants, creating a space for self-expression, confidence building, and skill development. Suggestions for enhancing the methodology include:

1. **Flexible approach**
   Tailor activities to the unique strengths of each participant, whether in movement, voice work, or textual interpretation.

2. **Bridge historical and contemporary themes**
   Use themes from Sophocles' *Antigone* as a lens to examine current social realities, including conflicts between personal values and societal laws.
3. **Multilayered process**
   Incorporate activities like mask-making and costume design to enrich the participants' engagement with the material.
4. **Embrace participant contributions**
   Be open to themes introduced by participants, fostering a sense of ownership and creating opportunities for fresh perspectives.
5. **Highlight the creation process**
   While final performances are optional, showcasing the creative journey can be a powerful motivator and celebration of diverse expressions.

Ultimately, patience and a willingness to explore new avenues are vital. Divadlo bez domova illustrates how even simple techniques can lead to profound transformations for individuals and groups alike.

7 Conclusion

The work of Divadlo bez domova and the A.N.T.Y.G.O.N.E. methodology highlight the enduring relevance of Greek tragedy as a framework for addressing contemporary social issues. Through participatory techniques and innovative staging, they offer transformative experiences for participants and audiences, reaffirming the role of theater as a medium for empowerment and change.

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Appendix

Supplementary materials include detailed descriptions of the A.N.T.Y.G.O.N.E. methodology techniques and testimonials from participants reflecting on their transformative experiences.

(reviewed twice)

Mgr. art. Patrik Krebs
Ústav divadelnej a filmovej vedy CVU SAV
Dúbravská cesta 9
841 04 Bratislava 4
Slovakia
e-mail: patrikk@mac.com

Emerging didacticial strategies and delievery of quality education service to students with learning disabilities

(overview essay)

Okeiyi, Sandra Chinenyenwa; Orim, Samuel Orim

Abstract: *This study focused on the relationship between emerging didactical strategies and delivery of quality education service to students with learning disabilities in Cross River State, Nigeria. It adopted quantitative methodology and descriptive survey as the design. The population consist of all stakeholders with bias in learning disabilities in the state with 61 participants purposively sampled for the study, two null hypotheses were formulated to guide the study. A 20 item self-developed and validated questionnaire of 4 points Likert scale titled; Delivery of quality Education Service (QDES) was used for data collection. Data were statistically analyzed using Pearson Product Moment Correlation Analysis at 0.05 level of significance with assistance of SPSS software. Findings indicate strong positive relationship between the variables, this means that, ICT-tools and instructional accommodations are essential to the provision of quality education service to students with learning disabilities. It was recommended among others that, ICT-tools and instructional accommodations should compulsorily be an integral part of educational plan for these learners, the capacity of teachers and learners should be upgraded to meet the emerging realities of the 21st century education system and finally, policy and legislative frame work should support practical use of these strategies to improve and sustain quality service delivery in schools.*

Keywords: *ICT-tools, Instructional Accommodations, Disability, Quality Education*

1 Introduction

One of the major roles and concerns of governments is to ensure quality educational services and practices in education of all children including those with learning disabilities. This is because education is the basic tool to prepare learners for future participation in national development and networked information society in which

knowledge is the most critical resource for social and economic development. Quality education service for learners with learning disabilities as broadly conceived in this discourse means pre, actual and post instructional activities that aims at collection of valid base-line data on learners' disability profile, comprehensive needs that will determine the instruction/intervention for the child. The three-phase process here refers to pre activities (identification/assessment), actual (real instruction/intervention in accepted settings) and post instruction activities (various assessment / evaluation activities that determine the success or failure of intervention / remediation).

These activities are best offered in cyclical manner, procedurally in well-coordinated and professional practices in line with global standard (Perk, 2009). Quality education service delivery will be incomplete or mirage without meeting the 2Qs condition (providing professionals in right quality and quantity). This implies that professionals and paraprofessionals relevant to education of learners with the disability should be in right proportion to provide professional services that equips children with right skills, attitudes, knowledge etc to compete with their peers globally. Services so provided must reduce or remove limitations imposed by impaired conditions. Quality service delivery also involves the use of emerging didactical strategies with global research-based evidence such as ICT tools and instructional accommodations.

Emerging didactical strategies as used here may be relative because what is emerging in Nigeria may be stale in developed countries. Information and communication technological tools and instructional accommodations (ICT & IA) are termed emerging didactical strategies in discourse because their relevance have suddenly become known and stakeholders are beginning to develop interest in using them for instructional purposes. Nores, et at (2022), Castaneda-Pena et at (2019) report that although the use of ICT and instructional accommodations as learning tool is an age-long practice in developed countries, these pedagogical practices are emerging in the typical Nigerian classroom now especially their application in education of children with learning disabilities. The use of these strategies in school communities is seen as emerging innovation not only because it reduces effect of disability on the child and learning process but also as a mark of departure from analog to digital school generation.

Globally, ICT tools have become imperative and its role in facilitating teaching-learning process remain sacrosanct. Consequently, it is needless to say that the capacity of those who teach this group of learners should be built with comprehensive tech-tool literacy programme. More so, as commitment to provision of quality education services (QES), stakeholders should be deliberate in their efforts to provide these devices in 2Qs. Aboubakr, Hala, and Bayoumy, (2022) argued that increasing the quality of education through strategies mentioned above have been a contemporary concern for many schools, teachers and international development agencies such as UNESCO, World Bank, UNICEF, etc. Education of learners with learning

disabilities in Nigeria has faced a variety of social, cultural, economic, and technical challenges, as well as inappropriate assessment and placement. This has contributed to poor-quality education and related service (Lajira, 2012, Yolanda, 2010).

As complement to ICT tools, instructional accommodations have become trending in education of persons with disabilities inclusive of those with learning disabilities. Instructional accommodations are professional and legally approved adjustment in instructional process by teachers and response by learners without undermining the curriculum and the validity of assessment. According to Ajuwan (2012), instructional accommodations are support or modification that gives persons with disabilities equal opportunity to participate and benefit from all instructional activities in the school and assessment process in preferred settings. National Center for Learning Disabilities (2006) defined it as positive alterations in the way tasks are presented to allow children with learning disabilities complete the same task(s) as other students. Instructional accommodation as strategy if professionally used will bypass the disability that limit children participation in all pedagogical activities. It makes curriculum activities accessible to children with learning disabilities in order to oust the ineffective one-size-fits-all approach to instruction that has plagued and produced poor learning outcome among learners with learning disabilities. Lewd (2012) and Tom (2004) have recently identified instructional accommodation as one of the strategies of helping more learners especially those with learning disabilities in diverse classrooms succeed by benefitting maximally from instruction in the classroom.

Despite the numerous definitions of LD, researchers agree that children with these conditions have average or above average intelligence yet perform below their actual potentials due to disorders in input and output mechanism that enhance learning. Consequently, they have problems ranging from dyslexia, dyscalculia, dysorthographia, dysgraphia, attention deficit hyperactivity disorder to perceptual disorders. These disorders negatively affect the child's ability to learn. Considering the nature and effect of LD on the child's education, professionals have brought to the fore their training and experience in agitating and making provision for these strategies that will facilitate their education as well as enhance life fortune of children with learning disabilities (Orim & Ezekiel 2017, Orim & Ikwen, 2016).

Emerging didactical strategies for education of students with learning disabilities are internationally proven, and research-based strategies for teachers, school administrators, school community to promote quality service delivery in the school system. The word emerging as used here to imply that, these strategies are just gaining ground, acceptance, and being used in pedagogical processes in Nigeria. It is important to clarify as mentioned earlier that what is emerging in one environment may not be in another environment, these strategies have long been used in developed school system. They are in a vouge to developing school system like Nigeria. Berlin

(2008), reports that these strategies grew out of recognition that ordinary school practices no longer produce the knowledge, skills, and habits of mind that students need for success. The 21st century special education needs assistance in reviewing learning standards, organizational structures, leadership models, teaching strategies, professional development, and student outcomes in relation to research on high-performing educational systems and practices.

Tech-tools have become common in the 21st century classroom globally, Nigeria cannot afford to be left behind. The use of tech-tools is particularly relevant to persons with disabilities as the devices can reduce or remove effect of disability on individuals and learning process. Tsay, Kofinas and Luo (2018) evaluate the use of gamification websites and apps to facilitates learning among students and conclude that there is no classroom environment that ICT-tools has not come to stay in educational-space. Saini, Rashid and Al-Mamri, (2019) report that, in the last four and half decades technology has revolutionized and improves every aspect of education in Omani and government adopted it as national framework for its educational system.

Fisher (2010), Wiska, and Sala, (2014). findings have shown that the use of ICT devices as pedagogical strategies with global results is the first step towards defining in detail the characteristics of effective 21st century special needs education. Applying them means creation of new models of teaching, learning, and removal of limitations imposed on learners by impairments. The author argued that these devices are seen as global practices and comprehensive tools designed to equip schools with thoughtful processes for in-depth professional practice with the aim of ensuring quality education of children with learning disabilities. Fisher (2010) asserted that ICT promotes quality educational service delivery for children with learning disabilities and should holistically be welcomed and accommodated in the school system. In recognition of the prominent role of ICT in advancing knowledge and skills necessary for effective functioning in the 21st century in digital and knowledge-based economy as a strategy to ensure quality education, ICT has become the expected practice of every Nigerian classroom (Federal Republic of Nigeria, 2004).

Besides the above strategy, research has equally proven that instructional accommodations are becoming increasingly relevant in education of children with learning disabilities. Kern et at, (2019), inspected special education plan of 222 students using instructional accommodations in the USA and found that most of them had been diagnosed of learning disability. Also, Burns et at (2020), reviewed school psychologists evaluation report for 130 students and saw that professionals mostly recommend accommodation services for students with learning disabilities. Hustus et al (2020), studied special education plans for 183 students and found that accommodations services are mostly used for learning. In Lovett (2021), it was revealed that accommodations are so prevalent and school professional seem to naturally respond to disability by proposing and using accommodations for didactical interactions in

classroom. Like others, Harrison et at (2020), found that students with ADHD, ages 11–15 when given organizational support as accommodation in their assignments and class note consequently, the rate of completing these tasks improves.

National Center for Learning Disabilities (2006) defined it as alterations in the way tasks are presented to allow children with LD complete the same task(s) as other students.

Accommodations are opportunities for learners with LD to participate in all instructional activities and assessment without disability-based limitations. The idea of accommodation is championed by the USA, however, few other countries are beginning to realize the essence of accommodation and have begun to advocate for its inclusion in the education of students with LD, perhaps as inclusionary principle in schools. NCLD (2006) and Ajuwon (2012) noted that Educational Testing Services (ETS) and Scholastic Achievement Test (SAT) etc. in America have embraced the concept of accommodation. The State Education Department Office of Vocational and Educational Services for Individuals with Disabilities, (VESID) (2006) recommended that accommodations should be received or administered in the following ways, instruction presentation, response to instructional presentations, timing/scheduling and setting. In this vein, accommodations are tools and procedures that provide equal access to instruction and assessment for students with disabilities (Etier, 2001). Lerner and Kline (2006) opined that IDEA 2004 permits accommodation in state wide test for students with LD. However, these accommodations must be written in the students' IEP and have the support of the teacher and guidance counselor in planning for and administration. It allows students with LD a level opportunity and does not give them due advantage in terms of grading as well as the content of curriculum. It is primarily aimed at giving the learners opportunity to express what they know without being impeded by their disabilities. What is interesting about ICT tools and instructional accommodations as emerging didactical strategies is that they can be concurrently used. For instance, while learners without learning disabilities use the traditional pen and exercise book to write in class those with dysgraphia, a sub-type of learning disabilities can be allowed to use tablet to write during classroom and assessment activities like test, examinations just like those with dyscalculia can use math Daisy for learning.

2 Statement of the Problem

Globally, education is a fundamental human right of all citizens irrespective of ability, disability and other considerations. Although there are many traditional instructional strategies for delivery quality education, providing this service for students with learning disabilities remains a major challenge in Nigeria due to insufficient knowledge of appropriate pedagogical strategies and nature of the disabilities among

stakeholders especially teachers. This is source of concern as students experienced frustration, poor learning outcomes, poor self-esteem and other forms of psychosocial issues in the process of learning. negates both international and national policies aimed at increasing access to quality education for self and national development.

There are few emerging didactical strategies that has proved to be result driven given the right application and environment that teachers seem not to understand their potentials of changing narrative in instructional space for these students. The ground of this study is conceived to establish if ICT and instructional accommodations can improve the quality education for students with learning disabilities in Cross River State, Nigeria.

3 Research Hypotheses

Two null research following hypotheses were formulated to guide the study.

1. There is no significant relationship between instructional accommodations and delivery of quality education service for students with learning disabilities.
2. There is no significant relationship between ICT tools and delivery of quality education service for students with learning disabilities

4 Methodology

This study adopted descriptive survey design with focus on correlation. The population of this study consists of all stakeholders in special needs' education in Cross River State such as, special education teachers, desk officers in Ministry of Education, Local Education Authority, postgraduate students in the department of special education University of Calabar, support staff and parents. Purposive sampling technique was used to get participants, who specifically consisted of 61 (sixty-one) respondents, 3 administrators from special schools, 2 desk officers, 40 Special Education Teachers (SET) across the levels of education (primary, secondary and tertiary), 8 postgraduate students specialized in learning disabilities, 2 support staff and 6 parents who have children with the disability. This sampling strategy require the use of experts who are knowledgeable on the subject matter of the research to get information that will improve the situation under focus. A 20 item self-developed questionnaire of 4 points Likert scale titled; *Delivery of Quality Education Service (QDES)* was used for data collection. The instrument was validated and a pilot study of 25 respondents provided initial support for the reliability (reliability coefficient of 0.79 and 0.87). The instrument was administered to the respondents personally and retrieved accordingly, this led to the 100% return rate recorded. Two null research hypotheses were formulated to guide the study. The data collected were statistically analyzed using

Pearson Product Moment Correlation Analysis at 0.05 level of significance with assistance of SPSS software.

5 Presentation of Results

Hypothesis 1: There is no relationship between instructional accommodation and delivery of quality education service for students with learning disabilities.

Table 1: *Pearson Product Moment Correlation Analysis of the Relationship between instructional accommodation and delivery of quality education service for students with learning disabilities (N = 61)*

Variables	Mean	Stand. Deviation	ΣX^2 ΣY^2	ΣXY	Sig	r
Instructional accommodations	10.53	3.33	792.67			
Delivery of Quality edu. services	11.81	4.56	1539.39	631.47	0.001	0.40

P < 0.05 Degree of Freedom (df) = 59

In Table 1 instructional accommodation with a mean of 10.53 and SD of 3.33 and delivery of quality education service for students with learning disabilities with mean of 11.81 and SD of 4.56 is significant at $p < .05$. The correlation coefficient between instructional accommodation and delivery of quality education service for students with learning disabilities is $r = 0.40$ at df of 59 showing that instructional accommodation and delivery of quality education service for children with learning disabilities are significantly related. Therefore, the null hypothesis was rejected. This shows that instructional accommodation promotes quality education service for students with learning disabilities.

Hypothesis 2: There is no significant relationship between ICT-strategy and delivery of quality education service for students with learning disabilities.

Table 2: *Pearson Product Moment Correlation Analysis of the Relationship between ICT strategy and delivery of quality education service for students with learning disabilities (N = 61)*

Variables	Mean	Stand. Deviation	ΣX^2 ΣY^2	ΣXY	Sig	r
ICT-enhanced strategy	12.21	4.61	1570.59			
Delivery of quality edu. services	11.81	4.56	1539.39	1243.99	0.0002	0.800

P < 0.05 Degree of Freedom (df) = 59

The Table 2 above shows that ICT as didactical strategy with a mean of 12.21 and SD of 4.61 and delivery of quality education service for students with learning disabilities with a mean of 11.81 and SD of 4.56 is significant at $p > .05$ from a correlation coefficient of $r = 0.800$ at df of 59. This shows that ICT-tools have a significant statistical linkage with delivery of quality education service for children with learning disabilities. Therefore, the null hypothesis was rejected. This result indicates that ICT strategy is emerging way of improving delivery of quality education service and by implication performance and autonomy of learning by students with learning disabilities.

6 Discussion of Findings

The result of hypothesis 1 shows that there is a significant relationship between instructional accommodation and delivery of quality education service for students with learning disabilities. The findings of this study are in agreement with the study of National Center for Learning Disabilities (2006) which supported that one of the best practices in special education that improve performance and ensure quality service delivery to students with learning disabilities is instructional accommodation. This strategy, if properly planned and applied, reduces the frustration of students with learning disabilities experience in schools. The idea of instructional accommodation is to adjust the way instructional activities are presented and how students respond to instructional evaluation/assessment without altering or watering down the content, quality and standard of the instruction and assessment (Ajuwon, 2012). For proper use of instructional accommodation in line with global best practices teachers and IEP team must be equipped with basic knowledge and understanding of how it works. Lovett (2020) opined that it could be viewed and applied from two perspectives or models. the general instructional presentation and specific disability model. Ajuwan (2012*)* in line with the findings of this research stated that instructional accommodations support and give equal opportunity to persons with disabilities to participate and benefit from all instructional activities in the school. Obani (2004) affirmed that this strategy when used in professional standard benefits learners with disabilities.

The result of Hypothesis two revealed that there is a significant relationship between ICT as didactical strategy and quality educational services delivery for children with learning disabilities. In agreement, Roseti (2009) supported that Information and Communication Technology (ICT) has become an essential tool in today's information age, makes a dramatic impact on the lives of people through education, research and development in the global perspective. Roseti states that it has proven to be catalyst for improving access to quality instructional delivery in the classroom. Studies revealed that, over the past decades in the field of Special Education, there has been a concerted ongoing push and crusade for integration of ICT into teaching pedagogy to improve the learning outcome of children with learning disabilities

(Jedeskog, 2005). Just like these findings, Tella (2007), confirms that ICT can be used in kindling these students' interest, enhancing recall of previous learning, providing new stimuli, activating learner's response, and providing systematic and steady feedback. Consequently, it promotes quality teaching and participation of students with learning disabilities in the classroom and other related activities. It provides opportunities to stimulate learning and increase motivation that enables teachers and these students to interact productively within the classroom, neighboring communities and global economy in a wider and higher scope. In a similar view, there is substantial evidence from Yasser and Gayle (2007) that Information and Communication Technology promote a quality special education service delivery and effective teaching-learning atmosphere for both children with learning disabilities and teachers. In line with this study, Aaron (2009 & 2013), UNESCO (2009, & 2010) accept that ICT tools have the ability of inspiring and engaging the students in learning to link the school experiences to the work practices, enriching and perpetuating skill as well as creating economic viability for future generations. Rolaza, Munto, (2010) and Roseti (2009) also accepts use of ICT devices in education of children with disabilities because it provides equal educational opportunities and readjust classroom environment for quality instruction and learning, greater flexibility, interactivity and accessibility for individual, group, and society. Anderson (2002) further supported that the integration of ICTs into the school curriculum to enable students with learning disabilities work independently and constructively thereby reducing the effect of the disability.

7 Conclusion

In contemporary society and education system technology has become indispensable survival, however, this study has shown that instructional accommodation too is a must use strategy especially in the provision of quality education services for students with learning disabilities. Thus, the need for paradigm shift from normative instructional strategies to emerging ones with global research-evidence remain sacrosanct. The use of these strategies in education of learners with learning disabilities has the capacity to reduce limitations disability has placed on learners. These emerging strategies are inseparable as the quality of education and related services provided are proportional to use of teach-tools and instructional accommodations in teaching-learning processes globally. Base on the findings of this study, it was recommended among others that:

- Instructional accommodations and ICT-tools should be an integral part of education of students with learning disabilities for improved and quality service delivery.
- Teachers, learners and stakeholders in school system should upgrade their skills to meet tech-needs for 21st century classroom.

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Orcid number: 0000-0002-7519-9435

(reviewed twice)

Okeiyi, Sandra Chinenyenwa; Orim, Samuel Orim
College of Post Graduate Studies, University of Calabar
Department of Special Education
Faculty of Educational Foundation Studies,
University of Calabar
Nigeria
e-mail: samuelorim1@gmail.com

Evaluating the significance of drama therapy in comparison to selected therapeutic interventions in individuals with substance addiction

(statistical analysis)

Milan Valenta, Jakub Vávra, Martin Olšan, Jiří Pospíšil

Abstract: *The article focuses on the evaluation of therapeutic and therapeutic-formative approaches from the perspective of patients in the psychiatric departments (of the Military Hospital Olomouc and the Psychiatric Hospital Kroměříž). The research examines the effectiveness and emotional dimension of these approaches in the treatment process, specifically among patients with substance addiction (drug, alcohol, or combined).*

The study aims to understand how patients subjectively evaluate selected therapeutic interventions, including drama therapy, medication, psychotherapy group, self-directed therapeutic community, and daily regimen. The primary objective of the research is to assess the significance and effectiveness of drama therapy intervention in comparison to selected therapeutic interventions and modalities.

To achieve this, the semantic differential method was employed as the key data collection tool. Data analysis and evaluation of results were conducted using statistical analysis (ANOVA).

Keywords: *drama therapy, dramatherapy, substance abuse, substance dependence, substance addiction, substance use disorder, intervention, therapy, ANOVA, differential, statistical analysis*

1 Introduction

Clients hospitalized in psychiatric wards focused on addiction treatment (drugs, alcohol) are cared for by a professional team consisting of psychiatrists, clinical psychologists, addiction specialists, special educators and social workers. In addition to pharmaceutical treatment (medication), intervention techniques include psychotherapeutic and personal-social approaches, including expressive therapies (in the case

of our investigation, the para-theatrical system of drama therapy). Clients are also treated for some symptoms of CAN syndrome, which can lead to substance abuse [1].

Drama therapy is a therapeutic and formative discipline in which group activities using theatrical and dramatic means in group dynamics predominate to achieve symptomatic relief, to alleviate the consequences of psychological disorders and social problems, and to achieve personal and social growth and integration [2]. If we consider drama therapy as a distinct therapeutic-formative (it is necessary to emphasize the formative, i. e. educational influence) discipline, then drama therapy organically fits into the system of expressive (not verbal, based on the client's activity) therapies that use the beneficial influence of creativity in individual muses, i. e. into the system of art therapy, music therapy in a broader sense, music therapy, art therapy. Significant for drama therapy is the use of roles to discover the relationship between real life and life lived in dramatic reality [3]. The exploration of the role is also associated with the relief of emotions, which in theater is associated with cathartic relief [4]. The exploration of roles and playfulness is related to the mutual agreement that the therapist and the client enter the play space [5]. Playfulness has a high correlation with building and meeting. As Johnson [6] states, the encounter between the therapist and the client(s) is a therapeutic goal that helps the client feel less existential discomfort and relief when playing in drama therapy. One important means of drama therapy is the assessment and self-evaluation of the clients.

Goals and Hypothesis

The aim of the study was to analyze how hospitalized patients with drug, alcohol, or combined addiction subjectively perceive and evaluate selected therapeutic and therapeutic-formative approaches in the process of their treatment. While the study assessed various therapeutic approaches—including drama therapy, medication, psychotherapy groups, self-directed therapeutic community, and daily regimen—the primary focus was on examining the effects of drama therapy.

The following hypotheses were formulated and verified using statistical analysis (ANOVA):

- **Hypothesis 1:** There is a statistically significant difference in Differential 1 (pleasant vs. unpleasant) of the evaluation factor in the semantic differential method when comparing drama therapy intervention with other therapeutic interventions (medication, psychotherapy groups, self-directed therapeutic community, and daily regimen).
- **Hypothesis 2:** There is a statistically significant difference in Differential 4 (beautiful vs. ugly) of the evaluation factor in the semantic differential method when comparing drama therapy intervention with other therapeutic interventions (medication, psychotherapy groups, self-directed therapeutic community, and daily regimen).

- **Hypothesis 3:** There is a statistically significant difference in Differential 7 (good vs. bad) of the evaluation factor in the semantic differential method when comparing drama therapy intervention with other therapeutic interventions (medication, psychotherapy groups, self-directed therapeutic community, and daily regimen).
- **Hypothesis 4:** There is a statistically significant difference in Differential 12 (dark vs. light) of the evaluation factor in the semantic differential method when comparing drama therapy intervention with other therapeutic interventions (medication, psychotherapy groups, self-directed therapeutic community, and daily regimen).

2 Material and Methods

Data collection methods

Quantitative strategies with subjective evaluation elements were used to collect and analyze data. The primary method applied was the semantic differential developed by C. Osgood, followed by statistical analysis using ANOVA (analysis of variance) method. A masking strategy was implemented also to ensure more objective evaluation by structuring the scales thoughtfully. The tool assessed each of the chosen interventions and compared their output data using a seven-point scale with opposing adjectives (e. g., pleasant/unpleasant), and data were collected for each chosen therapeutic approach individually.

To illustrate, the study included an example evaluation table for drama therapy (see Picture I: Evaluation table for clients with assessed adjectives in bold), with adjectives linked to the assessment factor highlighted in bold. Differentials 1, 4 and 7 were structured from left to right (positive to negative values), whereas differential 12 was arranged in the opposite direction. This reverse ordering of the extreme scale points was deliberately used to reduce the risk of stereotypical assessments by patients. Participants recorded their subjective evaluations of each therapeutic approach by selecting values on the scale, with each point corresponding to a specific numerical value from 1 to 7.

The selected instrument assesses three factors—evaluation, potency, and activity. The research primarily focused on the factor of subjective evaluation, which reflects the emotional dimension of how patients perceive interventions. This factor can be interpreted as representing the "good" or "bad" nature of the evaluated concept.

The evaluation factor is associated with specific adjective pairs (differentials): pleasant vs. unpleasant, beautiful vs. ugly, good vs. bad, dark vs. light. The potency factor, which can be understood as the "strength" or "intensity" of the evaluated concept, is linked to the adjectives: rough vs. gentle, weak vs. strong, deep vs. shallow, heavy vs. light. The remaining adjectives correspond to the activity factor, which, in relation to the assessed concept, can be interpreted as a connection to "movement"

or "change." While patients rated the potency and activity factors, these were not included in the analysis or the primary focus of the study.

Although the researchers acknowledge the critical reservations regarding the semantic differential method, the obtained results provide valuable insights into patients' subjective perceptions of the effectiveness and significance of various therapeutic interventions—particularly in terms of their emotional impact.

Name of the concrete assessed intervention

1. pleasant							**1. unpleasant**
2. round							2. square
3. active							3. passive
4. beautiful							**4. ugly**
5. coarse							5. fine
6. slow							6. fast
7. good							**7. bad**
8. weak							8. strong
9. blunt							9. sharp
10. deep							10. shallow
11. easy							11. heavy
12. dark							**12. light**

Picture 1: *Evaluation table for clients with assessed adjectives in bold*

Participants and inclusion criteria

The study focused on hospitalized patients with drug, alcohol, or combined substance dependence. These patients were undergoing treatment at Military Hospital in Olomouc (Department of Secondary Prevention and Addiction Treatment, Detoxification Department) and Psychiatric Hospital in Kroměříž (Toxic-rehabilitation Department 17b – Mandala Therapeutic Community), where drama therapy is an established part of the therapeutic program. Data were collected from patients enrolled in treatment programs in 2022 and 2024. Study included individuals who participated in various therapeutic interventions, mainly including drama therapy, medication, psychotherapy groups, self-directed therapeutic communities, daily regimen, and other therapeutic interventions. Drama therapy sessions were conducted weekly, lasting between 1.5 and 2 hours per session. Patients included in the study

were those actively engaged in the mentioned therapeutic approaches within their treatment plans. The main inclusion criteria required patients to be hospitalized for substance dependence and willing to participate in the study. The research sample was selected through institutional sampling from the primary population of clients. The final research sample comprised a total of 80 clients aged between 19 and 67 years, including both men and women.

Preliminary study

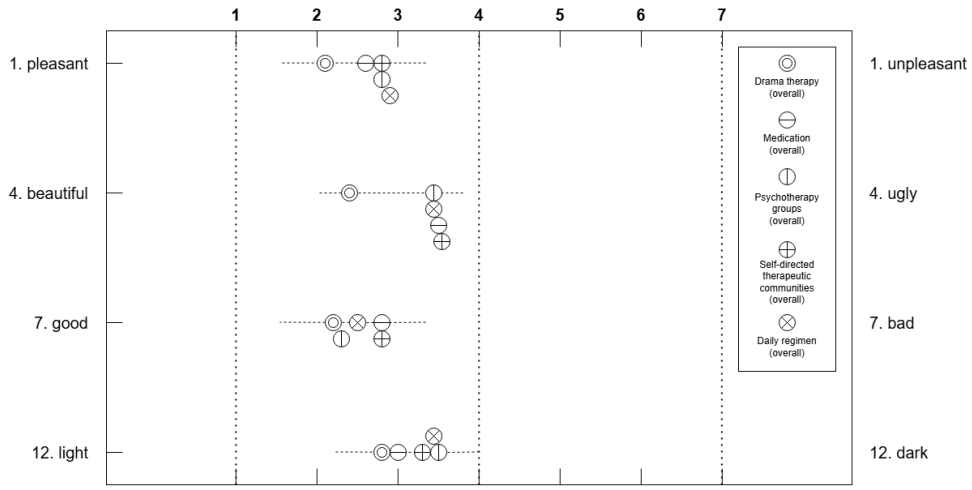
A preliminary study conducted in 2021 included additional interventions such as the point system, treatment phases, autogenic training, and activity therapy. However, the results did not show statistically significant differences between observed methods. This preliminary research served primarily as a methodological preparation, but its representativeness was limited due to COVID-19 pandemic, which restricted normal facility operations and, consequently, patients experiences with drama therapy and other evaluated interventions.

3 Results

Apart from the differences that will be interpreted, an interesting finding is that across all three measurements (2022 – Military Hospital in Olomouc and Psychiatric Hospital in Kroměříž, 2024 – Military Hospital in Olomouc), no statistically significant difference was found in any of the observed differentials. This indicates that all three measurements—despite being conducted at different locations and at different times—demonstrate a high degree of consistency, which in itself strengthens the validity of the findings [7].

Statistical analysis (analysis of variance, ANOVA) revealed statistically significant differences at the 0.05 significance level and even at the 0.01 significance level in the evaluation factor (differentials 1, 4, 7, 12) for drama therapy (d) in comparison to other therapeutic interventions (medication – m, psychotherapy group – ps, self-directed therapeutic community – s, daily regimen – dr).

The mean evaluation scores across the scales for all differentials (1, 4, 7, 12) favor drama therapy over the other intervention approaches—medication, psychotherapy group, self-directed therapeutic community, and daily regimen. Specifically, the mean score for drama therapy (d) in differentials 1, 4, and 7 was consistently lower than for other interventions, indicating more positive evaluation. The only exception was differential 12, where the mean score for drama therapy was higher due to the reversed scale endpoints (for reversibility purposes). However, the data visualization tools used account for this fact and display the value of the last-mentioned scale as if it were not reversed.

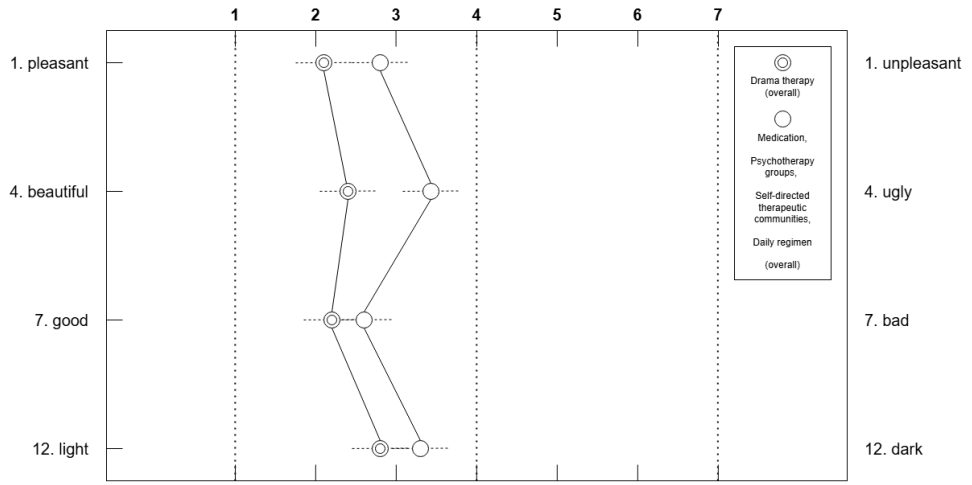


Picture 2: *Drama therapy vs. other therapeutic interventions (overall assessment)*

Evaluation Scores of Drama Therapy vs. Other Interventions

Patients evaluated all differentials (1, 4, 7, 12) on a 1–7 scale, consistently favoring drama therapy over other intervention approaches:

- **Differential 1** (pleasant – unpleasant): The mean score for drama therapy was 2.06, which is lower (i. e., closer to "pleasant") than the mean score for the other interventions (2.81), which is closer to "unpleasant."
- **Differential 4** (beautiful – ugly): The mean score for drama therapy was 2.44, which is lower (i. e., closer to "beautiful") than the mean score for the other interventions (3.42), which is closer to "ugly."
- **Differential 7** (good – bad): The mean score for drama therapy was 2.2, which is lower (i. e., closer to "good") than the mean score for the other interventions (2.6), which is closer to "bad."
- **Differential 12** (dark – light, with reversed scale endpoints): The mean score for drama therapy was 5.24, which is higher (i. e., closer to "light") than the mean score for the other interventions (4.69), which is closer to "dark."



Picture 3: *Drama therapy vs. other therapeutic interventions (combined overall assessment)*

4 Discussion

Interpretation of Findings

The results from the study show that drama therapy was evaluated more positively than the other therapeutic interventions. This is consistent across all four differentials (pleasant/unpleasant, beautiful/ugly, good/bad, dark/light). The findings indicate that drama therapy is perceived as a more pleasant, beautiful, good, and light approach by patients compared to other therapeutic interventions, such as medication, psychotherapy groups, self-directed therapeutic communities, and daily regimen.

One possible explanation for this positive evaluation of drama therapy is its inherent characteristics that provide a unique therapeutic experience. Drama therapy, by its very nature, is often engaging, creative, and interactive, offering patients an opportunity for emotional expression and catharsis. The use of drama therapy methods and principles such as role-playing, creative activities, storytelling, and playfulness etc., may allow patients to process their feelings in a non-threatening and less rigid environment compared to more traditional therapeutic methods. This may lead to greater patient satisfaction, as they experience less emotional resistance to engaging in the treatment process. Furthermore, the elements of play and relaxation embedded in drama therapy might serve as a significant source of comfort, contributing to a more positive emotional experience during therapy.

In contrast, other therapeutic approaches like medication, while essential for managing addiction and withdrawal symptoms, might not provide the same level

of emotional engagement or personal connection, which could contribute to their relatively lower evaluations. Psychotherapy groups and self-directed therapeutic communities, while beneficial for fostering social support and community engagement, might not offer the same level of emotional catharsis or personal expression as drama therapy. Daily regimens, while essential for maintaining structure, might not offer patients the opportunity to engage in more flexible, creative, and emotionally expressive practices, which might explain why they were evaluated less favorably.

However, this does not mean that the other therapeutic interventions are not desirable or important for the clients. Drama therapy is unique in this regard, as previously mentioned, and may serve different functions for the clients during treatment compared to the more commonly included therapeutic interventions in the study.

Consistency Across Measurements

Another interesting aspect of the results is the lack of statistically significant differences between the data collected in 2022 and 2024, despite the different settings (Military Hospital in Olomouc and Psychiatric Hospital in Kroměříž). This consistency suggests that patients' subjective evaluations of the therapeutic interventions, particularly drama therapy, are stable over time and across different contexts. This is a positive indication of the robustness of the findings, suggesting that drama therapy's perceived benefits are not tied to a specific location or time period. This consistency also reinforces the validity of the data, as it shows that the findings are not the result of random variations or extraneous factors.

Limitations and Considerations

Despite the strengths of the study, some limitations should be acknowledged. First, the sample size of 80 patients, while adequate, may not fully capture the diversity of experiences within the broader population of individuals undergoing treatment for substance dependence. Future research might consider expanding the sample size or including a more varied patient demographic to enhance the generalizability of the findings. Additionally, while the study focused on patients' subjective evaluations of the therapeutic interventions, objective measures of therapeutic outcomes, such as improvements in addiction recovery or mental health status, were not included in the analysis. These objective measures could complement the subjective data, providing a more comprehensive understanding of the effectiveness of drama therapy compared to other interventions.

Another limitation is the reliance on self-reported data from patients, which could be influenced by factors such as social desirability bias or the patients' emotional state at the time of evaluation. Although the semantic differential method and the use of a masking strategy helped to reduce bias, further measures to control for these factors could be considered in future research.

Implications for Practice

The findings of this study suggest that drama therapy holds significant potential as a therapeutic approach for individuals with substance dependence, particularly in terms of emotional engagement and subjective satisfaction. These results could have important implications for the integration of drama therapy into treatment programs for substance addiction. Given that patients appear to respond positively to drama therapy, healthcare providers may consider incorporating more creative and expressive therapeutic modalities into their treatment plans, alongside traditional medical and psychological interventions. Additionally, training for therapists and clinicians in drama therapy principles could enhance the effectiveness of such programs, offering patients an alternative in their treatment.

5 Conclusion

In conclusion, the study highlights the effectiveness and emotional impact of drama therapy in the treatment of patients with substance dependence. The findings suggest that patients perceive drama therapy as a highly beneficial therapeutic intervention, offering them an emotionally fulfilling and engaging experience. Given its positive evaluation, drama therapy could be an important component in the broader spectrum of addiction treatment, with potential for further integration and development in clinical settings. However, further research is needed to explore its long-term effects on addiction recovery and to compare its efficacy with other therapeutic approaches in a more comprehensive manner.

This discussion builds on the interpretation of this study findings, considers the strengths and weaknesses of the study, and suggests implications for future research and clinical practice.

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prof. Dr. Milan Valenta, Ph.D.
Palacky University Olomouc,
Faculty of Education, Žižkovo nám. 5, Institute of Special Eduaction Studies
779 00 Czech Republic
e-mail: milan.valenta@upol.cz

Mgr. Jakub Vávra, Ph.D.
Palacky University Olomouc,
Faculty of Education, Žižkovo nám. 5, Institute of Special Eduaction Studies
779 00 Czech Republic
e-mail: jakub.vavra01@upol.cz,

Mgr. Martin Olšan
Palacký University Olomouc,
Faculty of Education, Žižkovo nám. 5, Institute of Special Eduaction Studies
779 00 Czech Republic
e-mail: martin.olsan01@upol.cz,

PhDr. Jiří Pospíšil, Ph.D.
Palacky University Olomouc,
Faculty of Education, Žižkovo nám. 5, Institute of Education
779 00 Czech Republic
e-mail: jiri.pospisil@upol.cz

Virtual reality as an educational tool: new horizons in the development of individuals with autism

(overview essay)

Ladislav Zilcher, Michal Vostrý, Tereza Hnyková

Abstract: *This article examines the potential of virtual reality (VR) as an educational tool for enhancing social skills in children with autism spectrum disorder (ASD). By synthesizing findings from a comprehensive review of recent studies, it highlights the effectiveness of immersive VR environments in reducing anxiety, improving communication, and fostering meaningful social interactions. The analysis includes a comparison of various approaches, such as the use of collaborative virtual environments, social stories, and avatar-based simulations, to identify best practices in leveraging VR for social skills development. Despite its promising benefits, the article addresses key limitations, including the need for repeated training, high implementation costs, and the lack of longitudinal studies. Recommendations are provided for future research and practical applications, emphasizing the role of VR as a bridge between theoretical insights and real-world practice in supporting individuals with ASD.*

Keywords: *Autism Spectrum Disorder (ASD), Collaborative Virtual Environments, Educational Technology, Virtual reality, Social Stories, Social Skills Development.*

1 Introduction

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition affecting social communication, behavior, and cognitive abilities (Zapparrata et al., 2023). Supporting individuals with ASD in overcoming these challenges has become a priority in both educational and therapeutic contexts. Traditional approaches to developing social skills often rely on methods such as structured teaching or role-playing; however, these may not always address the unique needs of individuals with ASD (Ulu Aydin et al., 2023). As a result, researchers and practitioners have

increasingly turned to innovative technologies, such as Virtual Reality (VR), to create tailored and immersive learning experiences (Parsons & Cobb, 2011).

VR provides a controlled and engaging environment where individuals with ASD can practice social interactions without the stress and unpredictability of real-world scenarios (Bauer, Bouchara, & Bourdot, 2023). Studies show that virtual environments offer structured opportunities to learn behaviors such as turn-taking, maintaining eye contact, or responding to social cues (Chen et al., 2018). For example, the use of avatar-based simulations has been linked to measurable improvements in communication skills and reduced anxiety during interpersonal interactions.

In the Czech Republic, interest in the educational potential of VR is gradually increasing, driven by legislative efforts to digitalize schools by 2026. Emerging projects, such as *Inclusive Education and Support for Schools Step by Step* (*Společné vzdělávání a podpora škol krok za krokem*) and the *Action Plan for Inclusive Education* (*Akční plán inkluzivního vzdělávání*, APIV), aim to equip educators with tools to better understand and address the specific needs of students with ASD.These initiatives aim to bridge the gap between theory and practice, ensuring that advanced digital tools like VR become integral to inclusive education.

Despite these promising developments, challenges remain. Current research often relies on small sample sizes and lacks longitudinal studies to evaluate the sustainability of skills acquired through VR (Monteiro, 2020). Furthermore, while many studies highlight significant short-term benefits, the question of whether these improvements can be generalized to real-world settings remains open (Moon & Ke, 2024).

To address these gaps, this study systematically reviews existing research on the use of VR for developing social skills in children with ASD. By synthesizing findings from Czech and international contexts, the study aims to highlight the potential of VR as an innovative educational tool while addressing its limitations and future directions.

1.1 Innovative Application of Virtual Reality

Virtual Reality (VR) is increasingly recognized as an innovative technology capable of immersing users in simulated environments. Initially associated with the gaming industry, VR has expanded into various fields, including education, medicine, and psychology, where it serves a range of purposes. According to Thompson et al. (2019), VR relies on motivation and visual perception, making it particularly engaging and interactive for users. Devices such as 3D glasses and VR headsets enable exploration of virtual worlds, which can be tailored to create unique learning experiences that not only capture attention but also enhance individual development.

In the field of education, VR provides opportunities to increase student motivation while offering authentic learning experiences. This immersive approach enables

the simulation of historical events, geographic explorations, and cultural exchanges, providing students with experiences that would otherwise be inaccessible. For instance, Cabral (2021) and Chen, Wang, and Wang (2022) highlight the potential of VR in foreign language education, where students are placed in virtual environments that mimic real-life situations. This approach allows learners to engage in conversations, develop cultural understanding, and practice language skills in an interactive setting.

VR's ability to create structured and predictable environments makes it particularly suitable for students with autism spectrum disorder (ASD). As Zikl (2011) notes, VR can be customized to meet the individual needs of each child, ensuring a stress-free and supportive learning environment. Such tailored interventions are developed in collaboration with specialists to address specific challenges while minimizing potential discomfort. This capability aligns with the unique needs of children with ASD, who often benefit from structured, consistent, and visually oriented settings.

Studies consistently demonstrate the effectiveness of VR in education for children with ASD, particularly in areas such as social skills, emotional growth, empathy, and self-care abilities (Sait et al., 2019; Thomas et al., 2018). Yuan and Ip (2018) further argue that VR can support efforts to prepare these children for independent living, enabling them to achieve greater self-sufficiency and improved quality of life. Abdelouahab et al. (2021) add that VR fosters the development of essential skills while offering a safe space for experimentation and learning without fear of failure.

2 Research Objectives and Methodology

The objective of this study is to investigate the impact of virtual reality (VR) as both an educational and therapeutic tool on the development of social skills in children with autism spectrum disorder (ASD). Specifically, the study aims to identify the mechanisms through which VR influences social interactions, evaluate the sustainability of the acquired skills, and compare VR-based approaches with traditional educational and therapeutic methods.

Primary Research Problem:

- *What is the causal relationship between the use of virtual reality (VR) and the improvement of social skills in children with autism spectrum disorder (ASD)?*

Research Questions:

1 Through which mechanisms does virtual reality (VR) enhance specific aspects of social interactions, such as turn-taking, eye contact, and empathy, in children with ASD?
2 To what extent does VR-based training lead to sustainable improvements in real-world social interactions for children with ASD?
3 What are the differences between VR-based approaches and traditional methods in improving social skills for children with ASD?

The choice to frame the research problem causally reflects the need for a deeper understanding of the relationship between virtual reality (VR) and the development of social skills in children with autism spectrum disorder (ASD). While descriptive research provides valuable insights into what VR can achieve, a causal approach allows us to explore *how* and *why* VR influences specific outcomes. By examining mechanisms and pathways, we aim to uncover the processes that make VR effective and distinguish its potential from traditional methods.

Complementary research questions further break down this causal relationship into manageable components. They help address critical aspects, such as the specific mechanisms driving improvements (e. g., reduced anxiety or enhanced engagement), the sustainability of these gains in real-world contexts, and how VR compares to other approaches. Together, these questions provide a comprehensive framework for analyzing the complex dynamics between VR technology and social development, ensuring that the study contributes meaningful and actionable insights to both theory and practice.

3 Methodology

This study employs a systematic review approach to synthesize existing research on the application of virtual reality (VR) as an educational and therapeutic tool for children with autism spectrum disorder (ASD), focusing on the development of social skills. The methodology follows the updated PRISMA Protocol Guidance (Page et al., 2021; Cooke et al., 2012; Moher et al., 2009) to ensure transparency and reproducibility. Articles were systematically retrieved using established methodological criteria from the databases Academic Search Complete (EBSCO), Scopus, and Web of Science.

The first step involved searching for relevant articles using the primary keywords "virtual reality" and "autism." The search was refined to include studies published between 2014 and 2024. Additional keywords were added to focus the search on specific aspects of social skills development and related educational and therapeutic contexts. These keywords included "children," "emotions," "social skills," "social

interaction," "communication," "education," "learning," "rehabilitation," "social skills education," "social cognition," "autistic disorder," "autistic children," "video games," "visual perception," and "virtual reality therapy."

The results were as follows:

- EBSCO:
  - ▹ Initial search: ~23,000 articles
  - ▹ Refined search using additional keywords: ~320 articles
- Web of Science (WoS):
  - ▹ Initial search: 806 articles
  - ▹ After refining keywords: ~500 articles
- Scopus:
  - ▹ Initial search: 440 articles
  - ▹ After refining keywords: ~300 articles

Screening Process

After removing duplicates (10 articles), the remaining articles were screened based on their titles and abstracts to assess relevance to VR interventions targeting social skills in children with ASD. The screening process yielded the following results:

- EBSCO:
  - ▹ Articles after title screening: 58
  - ▹ Articles after abstract screening: 15
- Web of Science:
  - ▹ Articles after title screening: 39
  - ▹ Articles after abstract screening: 21
- Scopus:
  - ▹ Articles after title screening: 85
  - ▹ Articles after abstract screening: 28

Refining the Focus on Social Skills

From the refined pool of articles, only studies directly addressing the development of social skills (e. g., turn-taking, empathy, communication) were included. This resulted in a final selection of **12 articles** that met all inclusion criteria.

The selection of studies was based on predefined inclusion and exclusion criteria to ensure relevance and quality. The inclusion criteria comprised peer-reviewed articles published between 2014 and 2024, focusing on the use of virtual reality (VR) for the development of social skills in children with autism spectrum disorder (ASD). Studies were required to report measurable outcomes related to social interaction, empathy, communication, or related skills, and to involve children aged 3–18 years diagnosed with ASD. Articles written in English were included to ensure accessibility and consistency.

Conversely, exclusion criteria were applied to filter out studies that focused on populations other than children with ASD (e.g., neurotypical children or adults with ASD), lacked empirical data or measurable outcomes, or addressed general VR applications without a specific focus on social skills. Additionally, articles written in languages other than English were excluded from the analysis.

4 Results

The results of this systematic review provide a comprehensive overview of the impact of virtual reality (VR) on the development of social skills in children with autism spectrum disorder (ASD). A total of 14 studies were included in the analysis, each focusing on specific VR interventions and their outcomes in fostering key social abilities such as turn-taking, empathy, communication, and emotional regulation (see Table 1).

The studies employed a variety of VR methods, including avatar-based simulations (Zhang et al., 2023), collaborative virtual environments (Parsons, 2015) and head-mounted displays (Frolli et al., 2022; Yuan & Ip, 2018), to create immersive and interactive learning experiences. These interventions were designed to address the unique challenges faced by children with ASD in social interactions, offering structured environments that promote engagement and skill acquisition.

Key findings demonstrate the versatility of VR in targeting different social skills and its potential for translating learned behaviors into real-world settings. For example, improved turn-taking and empathy were noted in studies by Zhang et al. (2023) and Thomas et al. (2018), while Boyd et al. (2018) highlighted enhanced communication and eye contact in virtual settings. Emotional understanding and self-regulation were also significant outcomes, as evidenced by studies like Frolli et al. (2022).

The results also shed light on the mechanisms underlying these improvements, such as the reduction of anxiety through controlled environments (Cheng et al., 2015) and the use of real-time feedback to enhance self-regulation (Yuan & Ip, 2018). Additionally, comparisons between different VR approaches reveal valuable insights into best practices for designing interventions tailored to the needs of children with ASD (Cabral, 2021).

Table 1 summarizes these key findings, providing a detailed overview of each study, its VR intervention, targeted social skills, and reported outcomes. This table serves as a concise reference for understanding the breadth of research and its contributions to the field.

Table 1: *Virtual Reality and Social Skills Development: Study Results*

Study	VR Method	Target Social Skill	Outcome
Cheng et al. (2015)	3D Immersive Environment	Social understanding	Significant improvement in recognizing and using social cues; reduced anxiety in social interactions.
Boyd et al. (2018)	Unity3D + Photon Networking	Communication & interaction	Enhanced communication skills and motivation to engage with peers in real-life settings.
Zhang et al. (2023)	Social Story VR Intervention	Turn-taking & empathy	Improved turn-taking and empathy; findings transferred to real-world interactions.
Parsons (2015)	Collaborative Virtual Environment (CVE)	Perspective-taking	Better collaboration and social perspective-taking skills in group activities.
Frolli et al. (2022)	Head-Mounted Display (HMD)	Emotion recognition	Increased emotional awareness and ability to interpret social situations.
Sait et al. (2019)	Virtual Role-Playing	Decision-making in social contexts	Improved ability to navigate and respond to complex social scenarios.
Monteiro et al. (2020)	Gamified VR	Emotional regulation	Better control over emotional responses in high-stress simulated environments.
Thomas et al. (2018)	VR Training for Empathy	Empathy development	Increased understanding of others' emotions and motivations through role-playing scenarios.
Yuan & Ip (2018)	HMD + Real-Time Feedback	Self-regulation	Improved ability to manage impulsive behavior in structured tasks.
Khoirunnisa et al. (2023)	Collaborative Problem Solving VR	Conflict resolution	Enhanced ability to resolve disputes and negotiate solutions in collaborative environments.
Cabral (2021)	Language-Learning VR	Social communication	Improved ability to communicate in complex verbal scenarios and increased cultural awareness.
Chrisilla et al. (2021)	VR Role-Based Simulation	Leadership and group dynamics	Improved confidence and leadership skills in managing group tasks and interactions.

4 Discussion

The findings of this systematic review highlight the transformative potential of virtual reality (VR) in addressing the unique social challenges faced by children with autism spectrum disorder (ASD). By providing immersive and controlled environments, VR offers innovative approaches to developing social skills such as turn-taking, empathy, and communication. The included studies underscore VR's ability to bridge the gap between theoretical interventions and practical applications, demonstrating its versatility as both an educational and therapeutic tool.

This discussion aims to critically evaluate the results, contextualizing them within the broader literature and addressing the research questions posed at the outset. By examining the mechanisms underlying VR's impact, the sustainability of its benefits, and its comparative advantages over traditional methods, the discussion provides insights into the practical implications of the findings. Furthermore, the limitations of this review and directions for future research are explored to offer a balanced perspective on the role of VR in supporting children with ASD.

RQ1: Through which mechanisms does VR enhance specific aspects of social interactions (e. g., turn-taking, empathy, eye contact)?
The findings demonstrate that VR enhances social interactions in children with ASD by providing a safe, structured environment that supports repeated practice and gradual skill acquisition. Studies such as Zhang et al. (2023) highlight the effectiveness of avatar-based simulations in fostering turn-taking and empathy. These environments reduce the unpredictability of real-world social interactions, allowing children to focus on specific skills. Mechanisms such as stress reduction (Cheng et al., 2015) and real-time feedback (Yuan & Ip, 2018) further contribute to improved performance, particularly in developing eye contact and emotional understanding.

RQ2: To what extent does VR-based training lead to sustainable improvements in real-world social interactions?
While the results indicate significant short-term improvements, the long-term sustainability of these skills remains less explored. Studies such as Thomas et al. (2018) and Zhang et al. (2023) provide evidence of successful skill transfer from VR to real-world scenarios, such as improved turn-taking and communication in social settings. However, the lack of longitudinal studies limits the ability to determine whether these improvements persist over time. This gap emphasizes the need for future research to examine the durability of VR-acquired social skills and their broader impact on real-world functioning.

RQ3: What are the differences between VR-based approaches and traditional methods in improving social skills?
VR-based approaches exhibit clear advantages over traditional methods by offering interactive, customizable experiences that can simulate real-world scenarios. For instance, Parsons (2015) and Frolli et al. (2022) highlight how collaborative virtual environments and immersive head-mounted displays engage children more effectively than conventional teaching methods. Traditional methods often lack the dynamic feedback and immersive qualities that VR provides, making them less adaptable to the unique needs of children with ASD. VR also enables children to practice in a controlled setting, reducing the stress commonly associated with social learning.

Limitations of the Study

This systematic review has several limitations. First, the reliance on existing studies with varying methodologies and sample sizes introduces heterogeneity, which may affect the comparability of results. Second, the majority of studies focus on short-term outcomes, leaving the long-term sustainability of VR-acquired skills underexplored. Third, potential publication bias may have influenced the inclusion of predominantly positive results, overlooking studies with null or negative findings. Finally, the generalizability of findings is limited by the variability in VR applications and the lack of research in diverse cultural contexts.

Future Directions

To address these limitations, future research should prioritize:
- Conducting longitudinal studies to evaluate the sustainability of VR-acquired social skills over time.
- Exploring the impact of VR interventions on larger and more diverse populations to improve generalizability.
- Investigating novel VR technologies and their potential to enhance current approaches.
- Examining cultural differences in the effectiveness of VR-based interventions, as cultural norms may influence social skill development.

5 Conclusion

This systematic review demonstrates the significant potential of virtual reality (VR) as an innovative tool for developing social skills in children with autism spectrum disorder (ASD). By providing immersive, interactive, and customizable environments, VR enables targeted interventions that address critical social abilities such as turn-taking, empathy, communication, and emotional regulation. The reviewed

studies highlight VR's capacity to foster engagement, reduce anxiety, and facilitate skill acquisition in ways that traditional methods often cannot.

Key findings reveal that VR-based interventions offer unique advantages through mechanisms like real-time feedback and structured practice, which are essential for children with ASD. However, the review also identifies critical gaps in the current research, particularly regarding the long-term sustainability of VR-acquired skills and the need for larger, more diverse samples to enhance generalizability.

Despite these limitations, this review underscores VR's transformative potential in both educational and therapeutic contexts. By integrating VR into broader pedagogical and clinical practices, stakeholders can unlock new pathways for improving the quality of life for children with ASD. Future research should focus on addressing the identified limitations, including longitudinal studies and the exploration of emerging VR technologies, to fully realize the benefits of VR in supporting children's social development.

This study contributes to the growing body of evidence supporting the integration of VR into interventions for ASD, paving the way for further innovations in the field.

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(reviewed twice)

doc. PhDr. Ladislav Zilcher, Ph.D.
PF UJEP
České mládeže 8,
400 96 Ústí nad Labem
Czech Republic
e-mail: Ladislav.zilcher@ujep.cz

doc. PhDr. Michal Vostrý, Ph.D.
FZS UJEP
Sociální péče 13,
400 96 Ústí nad Labem
Czech Republic
e-mail: Michal.Vostrý@ujep.cz

Mgr. Tereza Hnyková
PF UJEP
České mládeže 8,
400 96 Ústí nad Labem
Czech Republic
e-mail: TerezkaHnykova@seznam.cz

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