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Content

Introduction

Dear readers,
you're opening the autumn issue of the Journal of Exceptional People, which has seen some major changes in recent weeks. These particularly concerned the change of Editor in Chief, whom became the head of the Institute of Special Pedagogical Studies PdF UP doc. Jiří Langer, the representation of expert advisors in our Scientific Board has also changed. Our journal also uses the services of the Actavia system, which enables a better linking of citations by individual authors and a better and more systematic management and overview of the contributions we have received over the last eleven years of our existence.

In this issue, we bring you articles on the following topics:

The Czech collective of authors from the Jan Evangelista Purkyně University in Ústí nad Labem, led by M. Vostrý, will introduce us to a case-control study regarding the selection of optimal methods for stimulating and developing memory and attention in children with specific learning disabilities. This will be followed by a contribution by the Chinese author Xianmei Lei focused on the screening of social support for families of children with autism. The next article, which deals with the rehabilitation and inclusion of children with visual deficits, will take us to Nigeria, Africa. Its author is O.S. Orim. We received a valuable contribution from Ukrainian authors A. Kurchatova and K. Shapochka, who introduce us to their experiences gained during their internships abroad. The aim of the article is to consider the issue of the importance and current content of pedagogical practice as a means of adapting future teachers to work in an inclusive educational environment. The article entitled "Aesthetics of creating an inclusive theater of actors with ASD as an intervention too" was sent to the editorial office by M.D. Polínek, who uses his directorial and special pedagogical experience gained while working with autistic actors. We conclude the series of professional articles with an interesting contribution by another Czech

author, K. Tománková, who focused on the importance of creating a correct gait for visually handicapped people in the context of a functional anatomical structure of the legs. And the next part of our magazine includes the contribution of Czech authors M. Tumova and J. Langer, which is named Preparation of elicitation material for word association task in Czech sign language.

As usual, we dedicate the end of our magazine to three reviews of interesting books recommended by T. Hrudová, M. Svozilová and S. Tang.

We wish you a pleasant reading, we believe that you will appreciate the quality of the mentioned contributions.

Pavel Svoboda and Jan Chrastina, executive editors, JEP

Selected intervention methods for the memory and attention development in students with specific learning disabilities: a case-control study

(scientific paper)

Michal Vostrý, Barbora Lanková, Ilona Pešatová, Petra Hrbáčková, Jaroslava Jelínková

Abstract: *The presented results focus on selected intervention methods aimed at memory and attention development in students with specific learning disabilities. The research sample consisted of 30 pupils aged 9.1–10.0 years. This age range corresponds to the 3rd and 4th years of elementary school. The respondents were selected based on stratified sampling. The group was intentionally divided into experimental and control groups of 15 students each. The common denominator was the general diagnosis of moderately severe learning disability (according to ICD-10; specific developmental disorders of scholastic skills) for all pupils. We applied diagnostic tools focused on memory and attention to evaluate the effect of the intervention. These were mainly the Learning Memory Test, the Path Test and the Attention Concentration Test. The intervention in the form of individual therapy lasted from September 2021 to January 2022 and it took place 2 times per week for the duration of 30 minutes. The presented results point to a positive impact of the intervention in the experimental group.*

Keywords: *specific developmental disabilities, memory and attention development, special education intervention, education and development of pupils, learning disabilities*

1 Introduction

From a general perspective, neurodevelopmental disorders are considered to be complex conditions. Albeit the conceptualization of these conditions is not easy. The term itself has been used for a broad group of disabilities that includes a form of brain development disruption, thus, constituting a wide range of neurological and psychiatric diseases. From a clinical point of view, these conditions are quite different in terms of their causes e.g., rare genetic syndromes, cerebral palsy in children,

congenital cerebral palsy, congenital anomalies, autism, attention and movement disorders, mental disorders, hyperactivity (ADHD) or others (Rutter et al., 2006; Thapar & Rutter, 2017). A key characteristic of neurodevelopmental disorders is that they quite often start typically in childhood before puberty. It is also necessary to distinguish them (based on the clinical picture) from many neuropsychiatric disorders. Even though the course of these disorders is subject to maturational changes, there are disorders such as ADHD, autism, learning disabilities or mental disabilities that show a constant course. Thus, remittent or relapsing patterns cannot be observed. Such patterns are then typical, for example, in schizophrenia or mood disorders (Rutter et al., 2003; Lichtenstein et al., 2010; Thapar et al., 2017).

Neurodevelopmental disorders can be characterized as a kind of inability to reach cognitive, emotional, and motor developmental milestones. Such disorders are thus closely connected with the disruption of coordinated events that are necessary for the development of the brain itself. The disorders can thus become a relatively socially significant health problem that is estimated to affect >3% of children worldwide (Gilissen et al., 2014). Experts also talk about a heterogeneous etiology that leads to the impairment of cognitive, communication, adaptation, and psychomotor functions.

Therefore, the comorbidity of two or more disorders can be commonly observed (van Bokhoven, 2011; Parenti et al., 2020). Different neurodevelopmental disorders may share similar cognitive and behavioural processes, hence they often overlap (in addition to the above mentioned, for example, also with mental disorders) and thus justifying the dimensional approach to the classification of disorders. An acronym ASSENCE (early symptomatic syndromes eliciting neurodevelopmental clinical examinations) was introduced with the aim to point out the amount of overlap between the given disorders and the similarity of their symptoms regarding the patient's younger age (Carlsoon et al., 2013). In the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders), these disorders are defined as a group of conditions with a developmental onset which produces deficits causing functional impairment. In the English version of ICD-11, which is already in force, neurodevelopmental disorders do not differ significantly from the DSM-5 classification. From a professional point of view, it is also possible to say, that the validity of these disorders is supported by a high degree of comorbidity between different disorders. Several studies mention that 22–83% of children with autism spectrum disorder suffer from symptoms that meet the criteria for ADHD. The opposite can be the case when 30–65% of children with ADHD have clinically significant symptoms of autism spectrum disorder (American Psychiatry Association, 2013; Treffer, 2006; D'Souza & Karmiloff-Smith, 2017; Morris-Rosendahl et al., 2022).

It is relatively rare for a neurodevelopmental disorder to occur on its own. Dysfunction in one area quite often accompanies dysfunction in other areas. This

logically leads to multiple disorders. These disorders can be the manifestation of connectopathies, synaptopathy, dendritopathies or disorders of neurotransmission and intracellular signalling, or neurodegeneration. However, it is still not entirely clear how these biological mechanisms cause behavioural dysfunctions or whether they trigger the downstream changes that lead to these behavioural changes (Reiresen, 2017; Ismail & Shapiro, 2019).

1.1 Specific learning disability in the Czech Republic

The term specific learning disability (SLD) can be encountered for the first time when children start to attend school and they might encounter characteristic difficulties in schoolwork. Most often, the children have problems remembering the shape of letters, combining them into syllables and reading them. Their writing tends to be clumsy and with many mistakes. The children may also have difficulties with concentration, and it is very difficult for them to remember new knowledge and learn the subject matter. SLD not only affects the areas of skills that children use and need in school, but also extracurricular activities. The 1980 definition of specific learning disabilities comes from a group of experts at the National Institutes of Health in Washington: "Learning disabilities are a collective term for a diverse group of disorders that manifest as distinct difficulties in acquiring and using skills such as speaking, understanding spoken language, reading, writing, mathematical reasoning or counting. These disorders are specific to the affected individual and assume dysfunction of the central nervous system." (Zelinková, 2003). There is considerable terminological inconsistency in the field of specific learning disabilities.

In the Czech professional literature, we can find various terms e.g., specific learning disorders, specific developmental learning disorders, learning disorders, specific developmental disorders of scholastic skills, the impairment of the graphic side of speech (Pokorná, 2001; Šturma cit. according to Říčan, Krejčířová, et al. 2006; Vitásková, 2005; Zelinková, 2003). All these terms are superior to individual types of specific learning disabilities. The adjective *specific* in professional literature signals that it is necessary to distinguish specific learning disabilities from non-specific ones (so-called pseudo or false learning disabilities), which can be caused, for example, by an insufficiently stimulating social environment or mental retardation (Matějček, 1993; Mertin & Kucharská, 2007). The adjective developmental expresses that these disorders are always manifested at a certain stage of an individual's *development* and have a continuous character i.e., their image changes during a child's development (Matějček & Vágnerová 2004).

The SLD includes dyslexia – a specific disorder affecting the area of reading, dysgraphia – a specific disorder affecting the area of writing, dysorthography – a specific disorder affecting the area of spelling, dyscalculia – a specific disorder affecting counting, dyspraxia – a specific disorder affecting motor activities, the Czech specific

is dysmusia and dyspnea. It is therefore evident that a deficit concept of SLD prevails in the traditional understanding of SLD. In line with that, the nature of care for individuals with SLD usually focuses mainly on the direct removal of the presumed cause found in the deficit perceptual-cognitive functions (Michalová & Pešatová, 2011). However, terminological inconsistency is not only the case in Czech terminology. It can be explained by the diverse symptomatology of the mentioned disorders, including various conceptual and theoretical starting points, from which individual groups of experts based their focus (Michalová & Pešatová, 2011).

In American literature, the term *learning disabilities* is used to denote specific learning disabilities, it is generally translated as learning disabilities that do not apply to individuals with mental disabilities, at the same time the term *dyslexia* also appears (Pokorná 2001, p. 53). The use of the term *specific learning difficulties* prevails in Great Britain while in France they prefer to use the typical term *dyslexia*. German professional literature uses the terms *Legasthenia* and *Calkulastenia*. We often come across the terms *spezifische Entwicklungsstörungen*, *Spezielle Lernprobleme*, *Teilleiutungsschwachen* (Bartoňová, 2006). The professional term *Lernbehinderte* must be distinguished from the previously mentioned since the 1970s in Germany it has been associated with learning problems in individuals who, based on their current mental abilities, fall into the so-called borderline zone or even into the zone of mild mental retardation (Grohnfeldt, 2004).

From a medical point of view, the term specific developmental disorders of scholastic skills (F81), embedded in the 10th revision of the International Statistical Classification of Diseases and Associated Health Problems, cannot be neglected. It is a part of the Disorders of Mental Development section under alphanumeric codes F80–F89. Experts rank there also a specific reading disorder (F81.0), which is relatively broadly defined and includes developmental dyslexia, a specific writing and pronunciation disorder (F81.1), a specific calculation disorder (F81.2) and a mixed scholastic ability disorder (F81. 3). In addition, another developmental disorder of school skills (F81.8) and developmental disorder of school skills, unspecified (F81.9) rank in ICD-10 (ICD-10, 2023).

2 Materials and Methods

2.1 The Study

Thirty selected probands who matched the relevant characteristics that fulfilled the selection criteria took part in the research investigation. We carried out a stratified selection of probands with the subsequent informed consent of their legal representatives. Based on the stratified selection, we selected an almost equal proportion of probands, namely 46.7% girls (14 girls aged 9.0–10.0 years) and 53.3% boys (16 boys

aged 9.0–10.0 years). The age range corresponds to the 3rd and 4th grades of elementary school, i.e., primary school. The given thirty probands were randomly selected into an experimental group and a control group. The experimental group participated in the intervention chosen by us. This intervention expanded the existing activities that were implemented with pupils with SEN as a part of the educational process. The division of the probands into experimental and control groups, together with the identified difficulties resulting from the recommendations of a counselling office, is illustrated in Table 1. A general diagnosis of SLD of the moderate learning disability type was established for all probands based on the pupils' records which we received.

The nature of cognitive stimulation was often carried out by filling in worksheets i.e., using paper and a pencil (exceptionally markers or crayons). The nature of cognitive stimulation was often carried out by filling in worksheets i.e., using paper and a pencil (exceptionally markers or crayons) even though, digital technologies are already used more often in schools and are becoming an integral part not only of everyday life, but also of the educational process. However, the worksheets we used targeted all areas of cognition. The worksheets we used targeted all areas of cognition. That is, with regard to the development of orientation, and imagination, including mathematical, as well as memory, attention and optical differentiation, which is no less important in the educational process. Furthermore, reading comprehension, which is also very important for the learning process itself. The selected worksheets were created for the subject of special pedagogical care (in the intervention we used, for example, *Practice memory*, Rezková, 2014; *The concentration of attention*, Rezková, 2013; *Spatial orientation*, Bednářová, 2004). The worksheets are used when working with pupils with attention deficit disorder or pupils with SLD. However, they can also be used as a motivational activity in regular teaching.

The chosen worksheets were selected from complete sets in such a way as to fulfil the justification of the ongoing intervention. The nature of the chosen selection was the time-limited reserved period of the ongoing intervention. Therefore, it was not possible to work with the probands on each of these sets as a whole. Pupils of the experimental and control groups underwent the testing itself using a standardized test (Learning Memory Test). Concerning the focus of the research investigation, we formulated the following causal research problem: How does a special educational intervention affect changes in the level of memory and attention in the monitored probands? Concerning the research problem, we also set a research goal: To find out how the chosen special educational intervention influences the memory and attention of the probands of the experimental group in comparison with the control group.

Table 1: *The diagnosis of SLD and the level of supportive measures (SM) in the experimental and control groups (source: authors)*

PROBAND	SM	PROBANDS' DIFFICULTIES IMPLIED BY RECOMMENDATIONS
E1	2.	dyslexia, dysgraphia
E2	2.	dyslexia, dysortography
E3	2.	dysgraphia, dysortography, mild behavioural disorder
E4	2.	dyslexia, slow work pace
E5	3.	Moderately binding SLD (dyslexia, dysgraphia, dysortography), mild behavioural disorder
E6	2.	dyslexia, dysgraphia, dysortography, attention disorder
E7	2.	dyslexia, dysgraphia, dysortography
E8	2.	attention disorder (ADHD), higher emotional irritability, slightly increased impulsivity, mild dyslexia, dysortography
E9	2.	dysgraphia, dysortography, dyspraxia
E10	2.	dyslexia, slower working pace, lower short-term memory
E11	2.	dyslexia, dysortography
E12	2.	dyslexia, dysortography, attention deficit disorder (ADHD)
E13	3.	behavioural disorder, dyslexia, dysgraphia, dysortography
E14	2.	dyslexia, dysortography, dysgraphia
E15	2.	dyslexia, dysortography
K1	2.	attention deficit disorder (ADHD), dyslexia
K2	2.	dyslexia, dysortography, mild behavioural disorder
K3	2.	dyslexia, dysgraphia, dysortography, moderate behavioural disorder
K4	2.	dyslexia
K5	2.	dysgraphia, dysortography, dyspraxia
K6	2.	dyslexia, dysortography, slow working pace
K7	2.	dyslexia, dysortography
K8	2.	activity and attention disorder, dyslexia, mild dysgraphia, dysortography
K9	2.	dyslexia, dysgraphia, dysortography,
K10	3.	dysgraphia, dysortography, emotional instability, low level of self-control, attention disorder (ADHD)
K11	3.	dyslexia, dysortography, dyspraxia, mild behavioural disorder
K12	2.	dyslexia, dysortography, mild behavioural disorder
K13	2.	dyslexia, attention and activity disorder
K14	2.	dyslexia, dyscalculia
K15	2.	dyslexia, dysortography, higher emotional irritability, higher fatigue

2.2 Intervention

The testing itself was carried out in two phases, for both groups always with the same time interval of 12 weeks. The proband always worked individually with the worksheet according to his/her pace. A personal computer or a tablet computer was used for motivational games or exercises individually as well. If the nature of the game or exercise (in a tablet computer) required group work, the probands worked sometimes in groups. The same was applied to working with a smartboard. We used group work as a motivational supplement. The use of digital technologies is becoming more a part of everyday school life and a matter of course. Therefore, we considered it important to include this activity in the intervention. We found working with modern technologies suitable for the probands especially when they could scan a QR code that redirected them to a self-study activity e.g., in the form of a motivational game – for attention.

Work in the form of ordinary pencil filling is no longer attractive for today's generation of schoolchildren. Despite the purpose of the research i.e., the development of memory and attention, it is appropriate to assess the intervention – stimulation with a comprehensive (multisensory) approach. It is therefore important to include the development of communication skills as well. The development of communication skills is one of the basic competencies of a person. Competence is necessary for communication with the environment, a person needs it almost constantly. Understanding and communication skills are developed through experiences, and on that account, we chose not only so-called feedback on the intervention but also interaction on a social level. Thus, we chose the following methods: direct questioning before starting the work, the mutual interaction of the probands with each other regarding the understanding of the assignment, and a discussion to find appropriate procedures as well as the discussion of the final elaboration of a given task.

Individual needs of all probands in both the experimental and the control group were respected. Some of the pupils (in terms of their diagnosis) suffered from lower understanding and uncertainty and needed more reassurance that they were progressing in the right direction in their individual work. They needed to sort out their insecurities and so they were given the support they needed. The subsequent discussion after the intervention took always place according to the needs of the participants and without a time limit. Most often, the discussion related to the difficulty of a task and chosen strategies for completing tasks. The pupils were for example willing to share the chosen procedure with each other and advise others on how to make the work easier. Within the framework of the principles of special pedagogy, we acted concerning the personal needs of individuals i.e., they could choose from a certain range of sheets (from the easiest to a more complex one) which sheet they wished to work on. If the nature of the exercise did not require a time limit, the individual always completed it according to his/her own work pace.

2.3 Assessment

To monitor the impact of our intervention, we used the **Learning Memory Test**, which was a follow-up to the original Auditory-Verbal Learning Test (AVLT, according to the author Rey RAVLT). A translated version published in 1998 has been used in the Czech Republic (Preiss, 1998). The test was last updated in 2013 and it is suitable for the age category 9–14 years, including adults.

The given test classifies short-term and long-term memory. In an individual, it reveals deficiencies in the capacity and quality of receiving, retaining and subsequently processing information through auditory-verbal means (Hrbáčková, 2020). Individuals are evaluated individually according to the methodology of the given test. Moreover, it can be modified into a verbal-graphic form for a group of probands at once. Nonetheless, it is necessary to consider the distortion of the resulting values because of the visually graphic form of the word thanks to which the tested proband can remember the dictated word the next time it is repeated. However, it depends on the individual dispositions of each person. The given test is described as culture-free.

Each country uses its own set of words, which are 2×5, the test contains two sets (basic and substitute = retest).

Set A is the main one and is dictated to the test subject 5 times in a row (A1–5). The proband is to name as many words as possible, regardless of the order. Subsequently, set B is dictated to the test subject once. Then we ask the proband to immediately recall set A again (A6). We test the last equipment of the set of words with a time interval of 25–30 minutes (A7). The spare set serves in case a retest is necessary. Unlike the previous test, this one is more demanding in terms of time and administration. If we do not want to expose the proband to a stressful situation, it is necessary to reserve enough time. If the individual does not remember a certain word, it is necessary to assure him/her that it is not a problem and encourage him/her to cooperate further. A recording sheet is used for evaluation. The total is calculated as the number of words covered during the 5 times dictated set. It is also possible to roughly assess the recall of the given information after a certain time in the evaluation. We can also evaluate the average recall.

2.4 Sample Size and Statistical Analysis

Considering the smaller number of probands in both research groups, a non-parametric statistical method was applied to compare the results, which does not require a Gaussian distribution of the data. The argument for choosing a non-parametric statistical method is that the Gaussian curve cannot be fully determined with a low number of individuals. For our statistical analysis, a difference score was always calculated between the test result at the entry and exit testing, which we performed with the probands. The difference values for the two groups that we studied were then

compared with each other using statistical tests with regard to the fact that they are dependent or independent sets (always at the 0.05 significance level). The results of the data analysis itself were then shown in individual tables and graphs, including illustrations according to the specifically used tests. The distribution of data density depending on the determined values is presented in the tables of individual research files in the descriptive analysis chapter. These results were also then displayed in graphs with respect to the observed significance level (P) value. If the P value is less than the significance level value of 0.05, then the result cannot be considered statistically significant. The comparison was made permanently between the experimental and control groups. The results are presented by performing a pre-test (input – first testing) and a post-test (output – second testing). The resulting comparison graphs point to the difference between the initial and final examinations of the given test both for individual groups and between research groups. When evaluating inductive analysis, we work with null and alternative hypotheses in mind. We used the IBM SPSS Statistics program for statistical data processing.

3 Results

From the total values of the experimental and control groups, shown in the summary Table 2, it is possible to draw attention to the similar input values. From the given table, it is clear that the shift of the experimental group reached an average of almost 9 score points, for the control group it was less than 1 score point. While the average values of the experimental (intervention) group had an increasing tendency at the entrance (pre-test) and exit (post-test), the results of the control group show rather stagnation. The results of the individual probands show that in the experimental group, there was a positive increase in all cases (except one). In some probands (E3, E7) even to a significant increase.

Table 2: *Descriptive statistics of entry and exit testing of both observed groups (source: authors)*

	Experimental group Entry testing	Experimental group Exit testing	Controlled group Entry testing	Controlled group Exit testing
Mean	8.27	9.95	8.61	8.84
Median	8.20	9.60	8.40	8.50
Standard deviation	2.33	1.87	0.875	0.958
Minimum	2.80	6.80	7.20	7.40
Maximum	12.6	13.6	10.0	10.4

Shifts in the control group did not differ significantly among the individual probands. The statistical processing of the obtained results is presented in Tables 3–4. Here,

a larger shift in the point evaluation for the experimental group is evident. When comparing the results of the entrance and exit testing of both groups, it is evident that there was no statistically significant difference in the entrance testing. Student's test points to p = 0.631 and Mann-Whitney test to p = 0.618. Thus, no statistically significant difference was demonstrated between the entrance tests of both groups. On the other hand, we can demonstrate a statistically significant difference between the experimental and control groups during exit testing. In the case of the Student's test, p = 0.018 and in the case of the Mann-Whitney test, p = 0.040.

Table 3: *Paired Samples T-Test experimental group (source: authors)*

		statistic	df	p
Experimental group – enter × exit	Student's t	–3.82	14.0	0.002
Controlled group – enter × exit	Student's t	–1.28	13.0	0.224

Note: $H_a\ \mu_{Measure\ 1–Measure\ 2} \neq 0$

Table 4: *The comparison of entry and exit testing of both observed groups: Independent Samples T-Test (source: authors)*

		statistic	df	p
Entry testing	Student's t	–0.486	28.0	0.631
	Mann-Whitney U	100.0		0.618
Exit testing	Student's t	2.504	28.0	0.018
	Mann-Whitney U	62.5		0.040

Note: $H_a\ \mu 1 \neq \mu 2$

4 Discussion

Research in recent years agrees that the number of children with clinically established diagnosis of neurodevelopmental disorders has been increasing. With this increase, an increase in the comorbidity of the given disorder and physical disorders has been also observed. Until recently, studies focused more on the connection between autism and physical disorders e.g., the relationship between autism and epilepsy. In addition to the frequent occurrence of epilepsy, an increased incidence of gastrointestinal problems, problems with food intake or excretion disorders were also observed in children. Some authors also report an increased incidence of asthma or headaches (Jokiranta et al., 2014; Chaidez et al., 2014; Zerbo et al., 2015; Kohane et al., 2012).

When specifying the given problems from the pedagogue's point of view, we primarily focus on issues in the field of learning. In this area, the learning rate slows down. These functions are then impaired even in adulthood. Likewise, in foreign sources, difficulties with learning contents that are not adapted to the actual level

of learning were reported (e.g., for teaching mathematics, it is provided at the level of 5th grade, although the skills are at the level of 2nd grade). Such discrepancy can lead to a limiting rate of progress in the affected areas. The child can also bear the consequences of incomprehension. Which can further worsen the learning process itself. The individual may also have problems with self-concept i.e., the individual must deal daily not only with learning but also with gradually accumulating harmful attributes. Such attributes include generally low intellect, laziness, and bad attitude. Further, it can lead to bullying (Altarac et al., 2007; Boyes et al., 2016; Reingle et al., 2016). After a while, the individual can also experience a loss of motivation. Giving up is typical for individuals since they wish to avoid harm (both physical and psychological). Adaptation is also problematic leading, for example, to behaviour that is disruptive or even antisocial. Moreover, the use of addictive substances is typical (Mascheretti et al., 2017; Svenson et al., 2001; McDowell, 2018). In adulthood, the risk not only in learning, but also in mental health, physical health, social relationships, professional application, or criminal behaviour may increase.

In foreign sources, the basic conceptualization of the assumption that SLD is an academically based disorder that originates in the central nervous system is still preserved. There are still different approaches to the nature of CNS disorders, such as what specific processing behaviours define it, or what neurological structures are associated with it. Others focus on questioning the legitimacy of SLD, asking how different these disorders are from low IQ or low intelligence. The long-held theory that SLD can be measured psychometrically using differences between abilities and outcomes has been challenged (Büttner et al., 2011; Kavale et al., 2009; Scanlon, 2013).

5 Conclusion

Special pedagogical care and intervention can be considered the basis of support measures in SLD. Such an approach should start as soon as possible, due to the higher plasticity of the central nervous system at an early age. and continue upon entering primary school. Educators should employ specific teaching strategies and teaching materials. Moreover, an individual education plan is formulated which aims to reduce or eliminate the child's difficulties in the educational process. Such difficulties may include reading, writing, and arithmetic. The child/pupil should undergo special pedagogical interventions, which can support the achievement of a certain degree of academic results. During such lessons, a special educator focuses, for example, with dyslexia on:

i) Segmentation of phonemes: what sounds does the child hear, what is the last sound in a word, etc.
ii) Dropping phonemes: what word would remain if we removed the M sound from the word MAT.

iii) Phoneme matching: if the selected words start with the same sound.
iv) Counting phonemes: how many sounds does the child hear in the word TAKE?
v) Phoneme swapping: what word would be formed if you changed the letter P in the word POT and replaced it with the letter H?
vi) Blending Synthesis of phonemes or Phoneme Manipulation: what word would be formed if you put the sounds together.
vii) Rhyming: how many words can rhyme with EAT?

Usually, after the development of phonemic awareness, phonemic teaching itself begins. The child learns that these sounds (phonemes) are associated with specific letter patterns (phonics). The aim of teaching is to connect individual sounds with letters and thus promote fluency in reading and spelling (Demonet et al., 2004; Kulkarni et al., 2006; Karande et al., 2011). Based on the above, several questions arise that need to be taken into account. If we consider the combined effect of several diseases, we must also take this into account when working with these individuals. The problem of such combinations can be not only insufficient fulfilment of school or other duties but also a general problem with the full involvement of the given individual in society. This is one of the main individual outputs plenty of studies point to. The integrated approach of special education and rehabilitation approaches, or psychological appear to be effective. The combination of the experts' interaction becomes a relatively important indicator of quality care for a given individual and their relatives (Vostrý et al., 2022).

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(reviewed twice)

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Social support among families raising children with autism spectrum disorder

(overview essay)

Xianmei Lei

Abstract: *This study examined the social support in families who were raising children with autism spectrum disorder (ASD). A total of 172 caregivers parenting a child with ASD from Sichuan province in China were investigated by the Social Support Rating Scale (SSRS). Results indicated that the caregivers had low levels of social support and its sub-domains, including subjective support, objective support, and utilization of support. Caregivers' marital status, educational level, employment status, place of residence, family income, income and expenditure situation, and children's severity level of autism were significantly associated with how families perceived their social support.*

Keywords: *families, caregivers, autism spectrum disorder, social support*

1 Introduction

Autism spectrum disorder (ASD) is characterized by persistent deficits in the ability to initiate and to sustain reciprocal social interaction and social communication, and by a range of restricted, repetitive, and inflexible patterns of behaviour and interests (World Health Organization, 2018). Due to its complex and heterogeneous nature, a child diagnosed with ASD may represent a constant source of stress on the family unit (Higgins, Bailey, Pearce, 2005). One factor that has been shown to reduce the negative psychological effects of raising a child with ASD as well as other disabilities is social support (Ekas, Lickenbrock, Whitman, 2010). Social support refers to the perceived or actual assistance that an individual receives from another person or institution and can be in the form of either physical and instrumental assistance or emotional and psychological support (Boyd, 2002). Examples of social support include support from one's spouse, extended one can engage in recreational activities; as well as support from community programs, professional help, and the

availability of services and programs geared toward families with a disabled child (Siklos, Kerns, 2006). Social support perceived by parents of children with ASD was found to be negatively related to financial, social, emotional, and physical burden (Mak, Kwok, 2010), and associated with increased optimism and maternal outcomes (Ekas, Lickenbrock, Whitman, 2010). In other words, families that received social support exhibited healthier adaptation to having a child with ASD (Siklos, Kerns, 2006). However, previous surveys in China reported that the overall social support for families of children with ASD was limited (Ni, Su, 2012; Zeng, 2017). As social support is necessary for families to deal with the intense effects of autism (Lu, Yang, Skora, et al., 2015), and parents' beliefs about receiving adequate social support for themselves and their child have been shown to be very important for successful family adaptation (Siklos, Kerns, 2006), it's imperative to further identify social support and the concepts that influence the social support in caregivers of children with ASD to develop appropriate treatments.

Boyd's review (2002) showed that parent and child characteristics played roles in parents' decision to seek out and use social support. It's likely that an individual's social and cultural context determine availability and use of social support (Singh, Ghosh, Nandi, 2017). Giving Chinese parents experience different social, spiritual, cultural, physical, and personal contexts (Lu, Yang, Skora, et al., 2015), it's particularly important to examine Chinese group in order to equip them with to best care for their children with ASD. However, very limited research so far on social support and its influencing factors among families raising children with ASD exists in China. To the best of our knowledge, only in a study conducted by Xiong and Sun (2014), they found the professional rehabilitation materials and educational support for families of children with ASD were relatively limited, and the main influencing factors were parents' educational level, family residence and economic level. Understanding more about this issue would help determine specialized services tailored for this population. Thus, the present research aimed to identify the social support in a sample of Chinese families and explore the relationship of the child and family characteristics with the social support.

2 Methods

2.1 Participants

The study included a sample of 172 key persons raising a child with ASD under 18 years old in a family recruited from special education schools in Sichuan province, southwest China. As presented in Table 1, the majority of children were male (68.40%), with the age ranged between 0 and 17 years and a mean age being 9.71 years (SD = 2.936), and most were described as having moderate or severe

levels of autism (76.50%). Regarding caregiver characteristics, most were married or living with a partner (85.30%), and many had only a senior high school degree or less (65.70%), and nearly half were unemployed (46.70%). In terms of the family characteristics, more than half lived in cities (51.20%), and many had family income less than 4000 RMB (about 580 USD) per month (66.70%). So nearly half of families could just make ends meet (41.90%), while a number of families couldn't (38.40%).

Table 1: *Participant Families Demographics (n = 172)*

Variable	n	%
Child's gender		
Male	117	68.40
Female	54	31.60
Child's age		
Aged 6 and under	18	10.50
Aged 7~14	141	82.50
Aged 15~17	12	7.00
Child's severity level		
Mild	28	16.50
Moderate	62	36.50
Severe	68	40.00
Very severe	12	7.30
Caregiver's marital status		
Divorced, separated, or widowed	25	14.70
Married, or living with a partner	145	85.30
Caregiver's educational level		
Primary school or less	48	27.90
Junior school	34	19.80
Senior high school	31	18.00
Junior college	27	15.70
Bachelor degree or above	32	18.60
Caregiver's employment status		
Unemployment	79	46.70
Job-waiting	13	7.70
Part-time job	16	9.50
Full-time job	61	36.10
Place of residence		
Village	49	28.50
Town	35	20.30
City	88	51.20

Table 1 – *continue*

Variable	n	%
Monthly income		
≤ 2000 RMB	48	28.10
2001~4000 RMB	66	38.60
4001~6000 RMB	19	11.10
6001~8000 RMB	14	8.20
8001~10000 RMB	13	7.60
≥ 10001RMB	11	6.40
Income and expenditure situation		
Can't make ends meet	66	38.40
Make ends meet	72	41.90
Income outweighs expenditure	34	19.80

Note: Numbers in cells might not add up to 172 due to missing data.

2.2 Procedure

The current study focused on the key person in families raising a child with ASD. The study followed the age criteria set by UNESCO that defined children as the period from birth to 18 years old. So the caregiver raising a child with ASD under 18 years old in a family had been recruited from special education schools in Sichuan province. Convenience sampling was used in the present study. Each recruited family received a letter explained the purpose of the study and stated that participation was voluntary and the family's information would be kept confidential. If the family agreed to participate in, the key person was asked to fill out the questionnaires on behalf of the family.

2.3 Measure

Study questionnaires included items on child and family characteristics and social support. In a brief demographic questionnaire, child's gender, age, and severity level, caregiver's marital status, educational level, employment status, place of residence, monthly income, and income and expenditure situation were collected. Then, social support of families of children with ASD was measured with the Social Support Rating Scale (SSRS). This scale was developed by Xiao (1994). It is composed of 10 items, including three dimensions of subjective support (4 items), objective support (3 items) and utilization of support (3 items). Subjective support refers to emotional or other support experienced by individuals, namely the individuals' emotional experience and satisfaction of being respected, supported, and understood by society. Objective support means the perceived visible or actual support, including the direct assistance and the existence of social networks and groups. The utilization of support

refers to the degree individuals make use of both subjective and objective support (Xiao, 1994). Higher scores indicate more social support, subjective support, objective support, and better utilization of support. Social support scores are classified as low (≤ 44) and high (> 44); subjective support scores are defined as low (≤ 24) and high (> 24); objective support scores are categorized as low (≤ 13) and high (> 13); and utilization of support are defined as low (≤ 9) and high (> 9) (Dai et al., 2016). The scale has been widely used, with good reliability and validity (Liu, 2013). In this study, the Cronbach alpha coefficient of the scale was 0.704.

2.4 Statistical analysis

Data were analyzed using IBM SPSS version 22.0. The reliability of the scale was determined firstly, descriptive statistics of the demographic variables and the score of the scale were then conducted. To explore the differences in the score of social support between child's genders and caregiver's marital status, independent t-tests were conducted. The one-way ANOVAs were used to determine if there were statistically significant differences in the score of social support among child's ages, severity levels, educational levels, employment status, places of residence, monthly income, and income and expenditure situations. Besides, Spearman correlations were calculated to examine the associations between demographic variables and social support. A p-value of < 0.05 was considered statistically significant.

3 Result

First, the descriptive statistics of the families' social support were presented. As reported in Table 2, the total score of social support for families of children with ASD was 34.68 (SD = 8.88), indicating the caregivers received low level of social support. As for the sub-domains of social support, families had low levels of subjective support (M = 20.46, SD = 5.74), objective support (M=7.51, SD=3.36), and utilization of support (M = 6.70, SD = 2.02).

Table 2: *Descriptive statistics of social support and its dimensions*

Dimensions	M (SD)
Objective support	7.51 (3.36)
Subjective support	20.46 (5.74)
Utilization of support	6.70 (2.02)
Overall social support	34.68 (8.88)

Note: M = mean; SD = standard deviation

The results of the independent t tests and the one-way ANOVAs showed that no significant differences were observed on the scores of social support in child's gender and age, caregivers' marital status, and place of residence (ps > 0.05), but there existed significant differences in child's severity level, caregiver's educational level and employment status, monthly income, and income and expenditure situation (ps < 0.01) (see Table 3).

Table 3: *Score comparison on overall social support in different demographic variables*

Demographic variables	Social support M (SD)	F or t	*p*
Child's gender			
Male	34.50 (8.94)	–0.220	0.826
Female	34.83 (8.72)		
Child's age			
Aged 6 and under	36.94 (12.33)	0.961	0.385
Aged 7~14	34.18 (8.46)		
Aged 15~17	36.25 (7.45)		
Child's severity level			
Mild	38.18 (8.24)	4.206	0.007
Moderate	36.20 (9.89)		
Severe	32.38 (7.70)		
Very severe	31.75 (6.23)		
Caregiver's marital status			
Divorced, separated, or widowed	31.56 (11.41)	1.598	0.121
Married, or living with a partner	35.37 (8.23)		
Caregiver's educational level			
Primary school or below	30.98 (8.46)	4.723	0.001
Junior school	34.13 (8.27)		
Senior high school	34.57 (9.44)		
Junior college	38.33 (8.73)		
Bachelor degree or above	38.03 (7.58)		
Caregiver's employment status			
Unemployment	30.64 (7.06)	11.892	< 0.001
Job-waiting	38.92 (8.68)		
Part-time job	39.06 (10.87)		
Full-time job	37.77 (8.35)		
Place of residence			
Village	32.65 (9.60)	2.914	0.057
Town	33.66 (6.83)		
City	36.27 (8.99)		

Table 3 – *continue*

Demographic variables	Social support M (SD)	F or t	*p*
Monthly income			
≤ 2000 RMB	30.43 (7.64)	5.074	< 0.001
2001~4000 RMB	34.52 (9.78)		
4001~6000 RMB	37.63 (8.16)		
6001~8000 RMB	40.38 (5.69)		
8001~10000 RMB	38.62 (7.24)		
≥ 10001 RMB	38.18 (6.11)		
Income and expenditure situation			
Can't make ends meet	30.69 (7.96)	12.364	< 0.001
Make ends meet	37.51 (8.43)		
Income outweighs expenditure	36.58 (8.82)		

Note: M = mean; SD = standard deviation; F = Fisher's ratio; t = t statistic; p = p-value. Independent t-tests were conducted for the score comparison of social support between child's genders, and caregiver's marital status, while the one-way ANOVAs were conducted for the score comparison among child's ages, severity levels, educational levels, employment status, places of residence, monthly income, and income and expenditure situations.

When considering the correlations between child related variables and social support, child's severity level showed statistically significant negative association with overall social support (r = –0.261, $p < 0.01$), which means that a more severe autism was associated with a lower level of social support. When looking at the correlations between family related variables and social support, caregiver's marital status, educational level, employment status, place of residence, monthly income, and income and expenditure situation all showed statistically significant positive associations with overall social support (r = 0.195–0.396, *p*s < 0.05) (see Table 4).

Table 4: *Correlations between demographic variables and social support*

	Objective support	Subjective support	Utilization of support	Overall social support
Child's gender	–0.080	0.066	–0.036	–0.005
Child's age	–0.073	–0.017	0.058	–0.012
Child's severity level	–0.101	–0.310***	–0.129	–0.261**
Caregiver's marital status	0.042	0.225**	0.077	0.195*
Caregiver's educational level	0.131	0.307***	0.346***	0.350***
Caregiver's employment status	0.187*	0.382***	0.281***	0.393***
Place of residence	0.111	0.117	0.295***	0.206**
Monthly income	0.208**	0.341***	0.282***	0.396***
Income and expenditure situation	0.129	0.321***	0.218**	0.343***

Note: *p < 0.05, **p < 0.01, ***p < 0.001

4 Discussion

Despite a large literature detailing social support among Western families having children with ASD, limited research has examined this issue in Chinese context. The objective of this study was to identify the social support in Chinese families raising a child with ASD. The findings suggested that families had low levels of social support, subjective support, objective support, and utilization of support. This is consistent with previous reports of limited social support (Ni, Su, 2012; Wu, 2010; Zeng, 2017; Huang, Liu, 2006). Siklos and Kerns (2006) also found the parents of children with ASD perceived less satisfaction with the support. ASD, a lifelong developmental disorder, will pose unique and long-term challenges for each member of the family (Lin, Orsmond, Coster, Cohn, 2011). However, the understanding and research on autism started relatively late in China, the social support network provided by country, society, and other NGOs was inadequate (Ban, Sun, 2017). Families' needs for continuous social resources (Wang, 2011) and the insufficient support (Huang, Liu, 2006) might lead to the perceived inadequacy of social support in this study. Research indicating subjective support was more important than objective support (Xu, Chen, Ma, 2018), so future interventions should not only enhance families' support networks but also help them recognize and reduce the exposure to negative support (Smith, Greenberg, Seltzer, 2012) and increase their sense of being supported (Benson, 2012).

Cai, Li, and Zhou (2010) conducted a survey and reported that when there was difficulty in educating child, 79% of families turned to teachers for help, 65% to family members, 40% to parents of children with the same disorder, 31% to friends, colleagues, and relatives, 14% to government agencies, and less than 8% to the media and community personnel. It can be seen that family members were more dependent on the support and help of family members and teachers, which may reflect that families in this study had a lower utilization of support. Chinese parents may intend to avoid seeking support from people outside the family when having a child with disabilities (Lin, Orsmond, Coster, et al., 2011), because Chinese socio-political context makes caregivers of children with ASD have to deal with stigma (Chiu, Yang, Wong, et al., 2013). The stigma that comes with disability may impact on access and availability of social support (Singh, GhoshS, Nandi, 2017). Besides, Taoist philosophy of "do-nothing" approach that emphasizes adapting oneself to the environment through self-cultivation and allowing fate to take its course (Lin, Orsmond, Coster, et al., 2011) may also lead to caregivers isolated from the society and reluctant to seek help from outside supports and resources. Since the strongest indicator of healthy adaptation and coping in the family was the amount of perceived support (Bristol, 1984), there's a great need to strengthen the social support for Chinese families of children with ASD, especially, to help them learn how to use available supportive resources.

As social support was an integral coping resource in the caregiving stress and adaptation process (Singh, GhoshS, Nandi, 2017), another objective of the current study was to explore the relationships between child and family related variables and the caregivers' social support. The study first examined the effect of child's characteristics, and the child's gender, age, and severity level of autism were considered. The significant difference was only found in social support among different severity levels of autism. And the negative association of child's severity level of autism with caregiver's social support indicated a more severe autism was associated with a lower level of social support. This may be due to the fact that children with autism who have more severe limitations may increase the caregiver's burden by forcing caregivers to adjust their daily lives to fit their children's special medical and education needs (Tung, Huang, Tseng, et al., 2014), and place a greater degree of stress and external pressure on families to seek social support to help them address the child's behavior problems (Boyd, 2002). This calls for the educational programs with the professional information that families need to successfully adapt to having a child with ASD (Siklos, Kerns, 2006).

This study also examined the impact of caregiver's marital status, education level, and employment status on social support. The results showed that there were significant differences on the scores of social support in caregiver's educational level and employment status. And all caregiver characteristics (i.e., caregiver's marital status, educational level, and employment status in this study) showed statistically significant associations with social support. The positive relations mean a more satisfied marital, educational, and employment status was associated with a higher level of social support. These findings lend support to Xiong and Sun's (2014) report that parents' education level and employment status influenced their social support. Xu, Chen, and Ma (2018) also evidenced that women with a higher education level could experience more objective support and higher support availability. Families of children with ASD have the greatest difficulty in raising child and bearing the greatest pressure compared with those of other disabled children (Guan, Yan, Deng, 2015). So the higher the degree of education parents received, the more active way they would choose to deal with the problems while educating children (Huang, Liu, 2006). In addition, a more satisfied marital status and more regular work would empower families to seek and use support.

The study explored the impact of place of residence, monthly income, and income and expenditure situation on social support as well. The results showed that there were significant differences on the scores of social support in family income and income and expenditure situation. In addition, place of residence, family income, and income and expenditure situation all showed statistically significant positive associations with social support. It means family's socioeconomic status was the influencing factor contributing to social support. The finding is similar to Xiong and Sun's (2014)

survey that education resources were relatively abundant in big cities but insufficient in small towns and rural areas. Families with high socioeconomic status had more resources at their disposal than low-income families to overcome the challenging problems posed by children's disabilities (Turnbull, Turnbull, 2001). Thus, families with more socioeconomic resources would experience more social support.

There are some limitations that need to be addressed. First, this study only selected the participants in Sichuan province of China (economy less-developed region), which might limit the generalizability of the research findings. Further studies should include the sample in multiple regions. Second, caregivers of children under 18 years old were recruited in this study. Since the caregivers' experiences might vary by the age of the child (Singh, GhoshS, Nandi, 2017), it's worthy to further explore how caregivers' social support vary by the age of the children with ASD. Finally, numerous factors contributed to the social support besides the child and family related variables, so it will be important for future studies to consider other possible factors, such as social and cultural context (Singh, GhoshS, Nandi, 2017), and the caregivers' personality (Boyd, 2002).

Despite these limitations, this study has practical implications. Social services and programs are very important for the successful adaptation of the family of a child with ASD. The social support in families raising children with ASD in the present study need to be improved. We should not only consider the number of supports but also the quality (Siklos, Kerns, 2006). The services provided should respond to the needs identified by the families (Donovan, 1988). As Weiss, Robinson, Fung, et al. (2013) mentioned, the type and quality of support offered, the person providing the assistance, and contextual issues, may all play roles in determining whether parents perceive support as beneficial. Practitioners should focus on informal social networks of families of children with ASD to help them to be available and offer meaningful support.

5 Conclusion

The current study suggested that families raising a child with ASD had low levels of social support and its sub-domains, including subjective support, objective support, and utilization of support. Caregiver's marital status, educational level, employment status, place of residence, family income, income and expenditure situation, and children's severity level of autism were significantly associated with the social support of the families.

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Community based rehabilitation services and inclusion: The experiences of persons with visual impairments in Ukpe, Alege Ubang (UKALU) communities

(overview essay)

Orim, Samuel Orim; Olofu, Precilla Alu; Akpan, Victor Bassey

Abstract: *Studies on social model of disability has shown that society and disability are seemingly in a constant interaction however, persons with visual impairments still have society-related challenges on full inclusion and participation in community-based activities. The study examined relationship between CBRs and inclusion of person with visual impairments in Ukalu communities in Obudu-Cross River State, Nigeria.*

Methodology: *It adopted quantitative research and Ex-post facto design as its methodology, the population consisted of 45 persons with visual impairments who registered in CBR training funded by GFO founddation in Ukpe, Alege and Ubang (UKALU) Communities in Obudu Local Government Area, Cross River State, Nigeria. Twenty-six 26 of them that completed the programme were purposively used as sample for the study. Instrument used for data collection was "Community Based Rehabilitation Services and Inclusion of Persons with Visual Impairment Questionnaire (CBRIPVIQ)". It is a four-point response scale of SA, A, D, SD with 16 items developed by researchers and validated by experts in relevant fields. The reliability coefficient of 0.78 was done using Cronbach alpha test-test method. Pearson Product Moment Correlation (PPMC) was used to analyse data and the null hypotheses were tested at .05 level of significance.*

Results: *The findings indicated that vocational and orientation and mobility skills as part of CBR training programmes in Ukalu communities are positively related to full inclusion and participation of persons with disabilities in the communities. This means that functional CBR training is tool for inclusion of persons with disabilities.*

Conclusion: *CBR made more functional and Persons with disabilities in different communities should be encourage to access CBR training to acquire skills needed for full inclusion, independent living and active participation on community-based activities.*

Keywords: *Inclusion, CBR, Society, Disability & Participation*

1 Introduction

The social model of disability has proved that society and disability mutually co-exist, however, it is widely reported that persons with disabilities inclusive of those with visual impairments are excluded from many opportunities to access services such education, health, employment and other aspects of society and that this can give them full sense of membership of any society. This to a large extent predisposes persons with disabilities to poverty, low self-esteem and often resort to begging for alms for their livelihood. This exclusion is contrary to the essence of the United Nations (UN) Convention on the Rights of Persons with Disabilities, which is an international human rights instrument of the UN intended to protect the rights and dignities of PWD (UN, 2018). World Health Origination-WHO (2016) estimated the prevalence of persons with visual impairments to be over 285 million, 39 million being totally blind while 246 million have moderate visual impairments. According to Hartley (2016)**,** persons with visual impairment are mostly excluded from community activities due to their limited ability to see and interact with the environment. Hartley said that children with visual impairment must be taught compensatory skills and adaptive techniques in order to acquire knowledge from other senses. The presence of a visual impairment could potentially impact the normal sequence of learning in social, motor, language and cognitive developmental areas. Further, Hartley (2016) and King *(*2015*)* asserted that since it would be difficult for persons with visual impairment to become are fully independent and capable members of the society without sensory and vocational training, it is imperative for CBR services to provide the needed skills for their inclusion in the society as active members.

International policies and legislative frame work such as inclusion UN Standard rule for equalization of opportunities have been formulated and adapted by countries who are signatories to safeguard and improve their lives to extent of facilitating the full inclusion of persons with disabilities in their respective communities as means of breaking disabilities-imposed barriers. In spite of legislative measures being put in place in developing countries to give opportunities to persons with special needs including those with visual impairment to have full participation and equal opportunities especially in the field of health, education and employment, is still a distant dream because the social and physical environment is still designed without considering the special need persons especially persons with visual impairment. Physical obstacles and social barriers prevent these people from participating in community and social life.

Community Based Rehabilitation (CBR) is a philosophy of the empowerment of the people with disability with the active efforts of the local communities. CBR is a strategy within general community development for rehabilitation, equalization of opportunities and social inclusion of all children and adults with disabilities in

the community (Dalal, 2016, Agarwal & Sharma, 2017). World Health Organization (2014) and Stone (2015) provide a general definitional and operational frame of CBR as the measures to be taken at the community level to use resources available within the community to empower persons with disabilities to live inclusively in their families, community, and became active global citizens. Vocational skills, development of orientation and mobility skills among other training enhance full inclusion of persons with visual impairment to live independently as active members of any society. In the light of this, GFO foundation funds CBR training for PWDs in Ukpe, Alege and Ubang communities in Obudu, Cross River State, Nigeria as part of Cooperate Social Responsivities (CSR). These communities are known for their unique social-cultural features such as language where gender has direct influence and if a male speaks the female language and vice versa it is seen as a form of language disorder and failure of socialization process in the communities. There are different models and theories on the gender-based language differences, however, it is not within the scope of this present study. PWDs in these communities need essential skills required for full inclusion and participation in socio-cultural, economic and political activities like their peers.

Vocational skills are technical and practical abilities that are required to perform services associated with a specific trade. These skills according to Nanjwan, Eke and Plang (2019), vocational skills could be classified into, hard skills, soft skills, technical skills and living skills. Community based rehabilitation has vocational skill acquisition as one of its components and types of skills which are included but not limited to tailoring, carpentry, plumbing, designing, weaving of different products such as bags, mat cane chair, basket. These weaving products could be showcase as exhibition in international and national event example, World Disability Day. Vocational skills are to be acquired through different training platforms, among these platforms, CBR is most patronized because of its cost-effective nature. Vocational skill instruction incorporated into CBR programme makes the training relevant to needs of the society or community where it is targeted, trainees easily learn, apply the skills and integrate into the mainstay of artisan needs of the area. Vanneste (2017) carried out a study on the role of CBR in building vocational skills of persons with visual impairment for inclusion in Kenya, it was discovered that barriers to community inclusion and work participation that they have experienced in education, health, social, economic, and cultural settings in everyday interaction were eliminated after a short period of time. Graduates of the training were seen to be active members of their communities. This study contends that a community-based rehabilitation (CBR) strategy affords the opportunity to coordinate communities in identifying access needs and mobilize resources to address common goals within the human sociocultural environment and improve society-disability relationships. The author further explained that much of the advantage of CBR relies on the fact that all that persons with disabilities in

a community can reach goals and meet their basic needs. It concluded that CBR programmes established based on the clients' needs, build capacity to access benefits of any society and integrate fully into the family and community with sense of self-worth. Ajobiwe (2017) asserted that the difficulty of acquiring vocational skills among persons with visual impairments is choosing the right vocational skill. Most parents want their children with the disability to become Lawyers, lecturers and other cherished careers. Consequently, many of them go into careers for which don't have passion and aptitude, so in the end they become seemingly frustrated and attribute it to disability and attitudes of the society.

Orientation is the process of using the remaining senses to establish one's position in the environment. Mobility is the capacity, facility, and readiness to move. Yasarapudi (2009) defined orientation and mobility as the term used for teaching people with visual impairment to move independently, safely and purposefully through the environment. Orientation is establishing one's position in the immediate environment. Skills in orientation refer to the gathering and processing of information from the environment with the remaining senses, through which one establishes his position. Mobility is the movement of a person from the present position to a desired position.

Best (2012) stated that orientation is the ability to understand surroundings through an awareness of space and spatial relationships between objects and people in the environment. Mobility is the ability to travel through the surroundings. It can be in form of walking or even crawling. Best stated that a child will need a certain level of cognitive skill to remember the route and understand what is happening. Motivation and confidence will be needed. In orientation and mobility, there is need for language skills which will help in understanding directions. The coordinated use of several senses –touch vision, hearing, kinaesthetic-will enable the child to monitor direction and space. Orientation and mobility is all about development. Yasarapudi (2009) stated that mobility is a basic aspect of psychomotor development. It is essential for education, occupation and social needs. When you lack visual input, movement through the environment may not occur naturally. According to Sharma (2017) Orientation and mobility has basic concepts that are related to concepts in descriptive geometry. It is concerned with shapes and objects in space, their positions, quantity, distances, locations, angles etc and how one can identify or locate them through the senses, and how to move around those structures in the space safely and gracefully. Basic orientation and mobility relate to the knowledge of space and the relationship of objects to each other and to the person. Example of the use of concepts in orientation and mobility that are geometry related include: maintaining directional orientation using perpendicular or parallel alignment for straight line travel; executing 90^0 and or 180^0 turns; recognizing characteristic of objects around the space or landmarks eg shapes, horizontal sides, vertical sides, parallel sides etc.

Onyenekwu, (2018) notes that orientation and Mobility as a process begins at birth, with understanding one's body and how it moves, differentiating one's body from the immediate environment, understanding the world beyond one's body. Yasarapudi (2009) mentions certain aspects of human mobility before mobility training can be given. They include: motor skills in preparation for sitting; walking, developing protective reactions and segmental rotation leading to normal gait. Others are: balance and posture: balance is prerequisite for movement, and posture becomes the basic pattern from which movement must originate. Vision plays an important role in learning posture, even though basically it is learnt kinesthetically. In a study titled Community Based Rehabilitation as a tool for development and validation of orientation and mobility training programme for primary schools' children with visual impairment in North Central Nigeria by Dala (2012), the study reported that children are prepared for proper integration into the society and the task in adulthood is made easy as the foundation is properly laid during participation in community- based rehabilitation training programmes. In related study, National Rural and Remote Support Services -NRRSS (2014) confirmed that CBR reduces barriers for participation in different activities without neglecting the goals of the components of health, education, livelihood, social empowerment. CBR has many benefits particularly in remote and rural practice settings. For communities and clients, it promotes social integration of persons with disabilities into the community because it is a programme based on the need of the community. For example, assessing changes in community attitude towards the clients and mobilizing community resources to support and help them becomes easy. NRRSS also posited that CBR models facilitate the training and employment of Community Based Workers, increase the skills, income, and employability of clients with visual impairments just like it does to local community members.

1.1 Research Objectives

The main thrust of this study is to investigate the relationship between CBRs and inclusion of persons with visual impairments in the society. Its specific focus is to:

a) Find out the relationship between vocational skills training in CBRs and inclusion of persons with visual impairments in the society.
b) Examine the link between orientation and mobility training in CBRs and inclusion of persons with visual impairments.

1.2 Statement of Problem

The social model of disability studies makes the society the orbit on which disability and its clients rotate. The relationship between the society and persons with disabilities is inseparable, hence the need for the full inclusion of persons with visual

impairment. Unfortunately, despite international policy on inclusion which mandate signatories' parties to enforce inclusive societies, research revealed that in some developing countries, clients with disabilities inclusive of those with visual impairments are seemingly and overtly experiencing exclusion from activities in the society. They are experiencing deprivation, oppression, denial and abuse of fundamental human right to full and active participation in community activities. This is the experience of clients with visual impairments in Ukalu communities in Obudu Local Government of Cross River State, Nigeria. The sense of sight is very indispensable for interaction and other human activities, deficit of the organ requires some form of rehabilitation training and acquisition of skills to be able to live and participate in all activities in any society. CBRs is the most cost-effective means to enhance the inclusion drive of persons with visual impairment in society as members with equal right to participation in every aspect of the society. The philosophy of CBRs gives it potent advantage over others to train persons with visual impairments to be included in all scheme of activities in the society.

1.3 Research hypotheses

Two null hypotheses were formulated to guide the study;

1. Acquisition of vocational skills has no significant relationship with inclusion of person with visual impairment in the society.
2. Orientation and mobility skills training in CBR has no significant relationship with inclusion of persons with visual impairment in the society.

2 Methodology

The study adopts quantitative methods and Ex-post facto design as its methodology, this is considered appropriate because of numerical and empirical vaules from data and variables cannot be manipulated by the researchers as the phenomena of interest has already occurred. The population of the study consisted of 45 persons with visual impairments who registered in CBR training funded by GFO foundation in Ukpe, Alege and Ubang (UKALU) Communities in Obudu, Cross River State, Nigeria. Twenty-six of them that completed the programme were purposive used as sample for the study. Instrument used for data collection was "Community Based Rehabilitation Services and Inclusion of Persons with Visual Impairment Questionnaire (*CBRIPVIQ*)". *It is a* four-point response scale of SA, A, D, SD with 16 items developed by researchers and validated by experts in relevant fields. The reliability coefficient of 0.78 was done using Cronbach alpha test-test method. Pearson Product Moment Correlation (PPMC) was used to analyse data and the null hypotheses were tested at .05 level of significance.

2.1 Presentation of results

Hypothesis one

Acquisition of vocational skills has no significant relationship with inclusion of person with visual impairment in the society. The analysis of this hypothesis is presented in Table 1.

Table 1: *Pearson Product Moment Correlation Coefficient Analysis of the relationship between acquisition of vocational skills and inclusion of persons with visual impairment (N = 26)*

Variable	ΣX ΣY	ΣX^2 ΣY^2	ΣXY	Cal. r-value
Vocational Skills in CBRs (X)	110	2700		
			2040	0.99
Inclusion of persons with visual impairment (Y)	92	1504		

Level of Significance at 0.05, degree of freedom = 24, Tab. r-value = 0.113

The result of the above analysis as presented in Table 2 shows that the calculated r-value of 0.99 is higher than the critical r-value of 0.113 at 0.05 level of significance and 24 degree of freedom. The alternate hypothesis was retained. This result therefore implies that there is a significant relationship between vocational skills acquired in CBR training and inclusion of persons with visual impairment in Ukalu communities or society. This reveals that skills acquired during the training enhances inclusion of persons with visual impairment in activities in the society.

Hypothesis two

Orientation and mobility skills training in CBR has no significant relationship with inclusion of persons with visual impairment in the society. Result of this hypothesis is presented in Table 2.

Table 2: *Pearson Product Moment Correlation Coefficient Analysis of the relationship between orientation and mobility skills and inclusion of persons with Visual impairment (N = 26)*

Variable	ΣX ΣY	ΣX^2 ΣY^2	ΣXY	Cal. r-value
Orientation & mobility training in CBRs (X)	110	2700		
			2500	0.95
Inclusion of persons with visual impairment (Y)	105	2290		

Level of Significance at 0.05, degree of freedom = 24, Tab. r-value = 0.113

The result of the above analysis as presented in table 2 shows that the calculated r-value of 0.95 is higher than the critical r-value of 0.113 at 0.05 level of significance

and 24 degree of freedom. The alternate hypothesis was retained. This result therefore implies that there is a significant relationship between development of orientation and mobility skills and inclusion of persons with visual impairment in Ukalu communities or society. This proves that Community Based Rehabilitation can be used for training persons with visual impairment on Orientation/mobility skills for full inclusion into the society.

3 Discussion of Results

The result of analysis on the first hypothesis revealed that there is a significant relationship between acquisition of vocational skills in CBR training and inclusion persons with visual impairment in the mainstream of the society. This finding agrees with the findings of Vanneste (2017), Sharma and Deepak (2011), and Kings, (2016) who found a significant impact of CBR in building vocational skills of persons with visual impairment for inclusion in the society. The authors contend that a community-based rehabilitation (CBR) affords persons with visual impairments opportunity to be trained on basic vocational skills required for meaningful life and active participation in socio-economic and political activities in different communities. The training identifies their need, access and mobilizes resources to address common challenges within their sociocultural environment. The training on vocational skills in CBR is effective tool in promoting social change and enabling young adults with visual impairments to advocate for community inclusion and work participation. CBR recognizes that disability is nested in widespread poverty, unequal distribution of resources, social stigma, and unequal access to work participation. The result of the hypothesis is also in line with the findings of Orim, Ajayi and Ndifon (2013) and Titchkosky (2013) who found a significant impact of vocational skills on inclusion persons with visual impairment in Kenya communities. The author further explained that CBR relies on the fact that persons with disabilities in a community can meet their basic needs and self-actualization through earnings from their skills. Through inclusion, family members witnessed and participate in the progress of a relatives with disability, thus enhancing faith in that person's abilities and potential, and challenging their own prejudices.

The result of the second hypothesis revealed that there is a significant relationship between orientation/mobility skills and inclusion of persons with visual impairment. The result of this finding is in agreement with that of Carla, Mauro, Marco and Cornoldi (2016) who found out that persons with blindness who participated in Community Based Rehabilitation training in orientation and mobility can navigate all parts of the society for socio-cultural interaction. Based on this study, its arguable that Community Based Rehabilitation programmes are fundamental in improving the wellbeing of persons with disabilities, and for fostering their participation in the community and society at large as they independently visit places like shopping mall,

health facilities, schools and worship centers. The result of the present study is also in correspondence with that of Neutadt (2006) who reported that the teaching and training of Orientation and Mobility has been recommended in CBRs as cost-effective programme to improve disability-society relationships in developing countries. Persons with visual impairments after training can access immediate environment and have opportunities to independently travel with sense of self-fulfillment.

4 Conclusion

In many communities in Nigeria like some parts of world, disability is a barrier to active and inclusive participation in community-based activities for social interactions. Exclusion of PWDs has been a problem in Ukalu communities in Obudu, Cross River State. This among other reasons promoted inclusion as global policy. It is relatively cost effective to persons with visual impairments to acquire skills needed for full inclusion in the society through Community-Based Rehabilitation training programmes. This study like most research validates CBR as the most appropriate tool for training persons with visual impairments in Ukalu on vocational and orientation and mobility skills regarded as indispensable skills for independent living, inclusive participation and improve society-disability relationship.

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Teacher training internship as a means of future teachers adaptation to work in an inclusive educational environment

(scientific paper)

Angelika Kurchatova, Kateryna Shapochka

Abstract: *The scientific article highlights the relevance of the problem of training future teachers during teacher training internship (pedagogical practice), which is a mandatory component of the process of students' professional training in higher education institution and an important stage of their professional growth. The theoretical aspects, the importance of pedagogical practice as a means of adapting future teachers to work in the conditions of an inclusive educational environment, an integral and core component of the personal and professional development of a young specialist, have been determined. Based on the analysis of scientific sources, publications of scientists on the topic of research, the state of the problem in psychological and pedagogical theory at the current stage is justified.*

Keywords: *inclusive education, inclusive educational environment, future teachers, teacher training internship, pedagogical practice, adaptation of teachers*

1 Introduction

Active integration of national education into the European and world space, humanization of relations between different social groups require improvement of the conditions of socialization of children and youth with special educational needs; demand changes in the orientation of education (preschool, general secondary and higher education) to ensure the accessibility of education for people with special needs, which becomes possible only if inclusion is implemented in the educational sphere, since its development is one of the urgent needs of today.

In the context of European values, inclusive education requires a significant reorientation of society's consciousness and, first of all, practical training of future pedagogical workers to carry out their professional activities (teacher training internship),

taking into account the principles of respect for the individual characteristics of children, tolerance, impartiality and non-discrimination. Today, a number of contradictions have arisen in society between the growing integration of children with special educational needs (SEN) in educational institutions and the lack of specially trained teachers to work with children with SEN in an inclusive environment; between the need for educational practice in qualified specialists who have a high level of formation of inclusive competence, and the traditional content of future teachers professional training. In this perspective, the problem of training future preschool teachers and future primary school teachers to work with children with SEN becomes particularly important.

We consider one of the urgent tasks of the future teachers practical training is a teacher training internship (pedagogical practice) by students as a means of adapting to work in the conditions of an inclusive educational environment, which, according to Article 1 of the Law of Ukraine "On Education", is defined as a set of conditions, methods and means of their implementation for education and development of education seekers taking into account their needs and capabilities (Law of Ukraine "On Education", 2023).

Teacher training internship (pedagogical practice) is governed by regulatory documents: Laws of Ukraine "On Education", "On Higher Education", "Regulations on the Practice of Students of Higher Educational Institutions of Ukraine" (Ministry of Education and Culture of Ukraine No. 93 dated 08. 04. 1993).

Teacher training internship (pedagogical practice) is a necessary means of professional and personal development of the future teacher as a competent specialist, as well as an indicator of students' readiness to work in an inclusive environment. This will enable future teachers to deepen, improve and consolidate practical skills and abilities necessary for further professional activity.

The aim of the article is to consider the issue of the importance and current content of pedagogical practice as a means of adapting future teachers to work in an inclusive educational environment.

Analysis of the main studies and publications on the specified problem. Today, it is an undeniable fact that the problem of training future teachers to work in an inclusive educational environment is multifaceted and many-sided. Ways of professional training of future teachers to work with children with SEN are explored by O. Denisova, O. Martynova, V. Ponicarova, N. Romanovych and others. Scientists A. Anishchuk, L. Zdanevich, I. Kuzava in their works revealed the content and aspects of the formation of professional training of educators for inclusive education. A. Kolupaeva, K. Kolchenko, G. Nikulina and P. Talanchuk, M. Tchaikovsky substantiated the conceptual principles of teaching people with SEN in an inclusive educational environment. Scientists consider an inclusive educational environment as one that provides all subjects of the educational process with opportunities for

effective self-development, involves solving the problem of educating children and youth with special needs by adapting the educational space to the needs of each participant in the educational process, including reforming this process, methodological flexibility and variability, a favorable psychological climate in the educational team and the institution, equipment of premises for the needs of all participants, which ensures their full participation in the educational process.

In the perspective of the problem of our research, we note a significant number of scientific works aimed at finding effective ways of preparing future teachers to work in the conditions of an inclusive educational environment, amomg them O. Martynchuk (features of preparing future educators for the introduction of inclusive forms of education in educational practice; components of professional and personal readiness to work in the conditions of inclusive education), theory and practice of training specialists in special education for professional activity in an inclusive educational environment (Martynchuk, 2019); S. Chupakhina (formation of the readiness of future teachers to use information technologies in the inclusive education of students with special educational needs) (S. Chupakhina, 2020); O. Akimova, K. Bovkush, V. Bondar, L. Grechko, I. Demchenko, A. Kolupaeva, O. Fedorenko, Z. Shevtsiv, Z. Udych (professional training of future primary school teachers to work in an inclusive environment of general secondary schools education) (Shevtsiv, 2017); S. Sydoriv (professional training of future primary school teachers to organize an inclusive educational environment as a psychological and pedagogical problem) (Sydoriv, 2022); O. Kasiyanenko (formation of the readiness of future educators to work with preschool children in conditions of inclusion) (Kasiyanenko, 2018); S. Alekhina, D. Akhmetova, O. Denisova, E. Kutepova, O. Martynova, V. Ponikarova, N. Romanovych (ways of professional training of future teachers to work in the conditions of inclusive education); I. Hafizullina, Yu. Shumilivska (readiness of the future teacher to work with children in the conditions of inclusive education); N. Agarkova, T. Dzhaman (training of future educators and primary school teachers to work with children with special educational needs) (Agarkova, 2019); S. Alyokhina, Yu. Boychuk, O. Borodina (formation of inclusive competence of teachers and educators of preschool education institutions). The problems of organization, meaning and content of pedagogical practice as a means of adapting future teachers to work in an inclusive environment were briefly considered by O. Hordiychuk (Hordiychuk, 2020), V. Shevchenko (Shevchenko, 2018). I. Malyshevska (Malyshevska, 2016) was engaged in the study of a professionally-oriented strategy for training specialists to work in the conditions of an inclusive educational environment.

2 Results and Discussion

N. Agarkova singles out theoretical, practical and personal components of improving the professional training of future teachers to work in an inclusive environment (Agarkova, 2019). According to the researcher, special attention should be paid to the theoretical and practical components, because the educational practice in educational institutions convinces that most of the teachers are not ready to effectively work with children in an inclusive environment.

V. Shevchenko emphasizes that clearly planned and professionally organized pedagogical practice plays an important role in the formation of practical work skills in an inclusive educational environment (Shevchenko, 2018). O. Borodina claims that in order to provide better conditions for the educational process in an inclusive environment, future teachers need to maintain close cooperation with parents in the process of pedagogical practice, take into account their wishes and recommendations (Borodina, 2014).

Today, it can be confidently said that it is teacher training internship (pedagogical practice) that has all the potential to ensure the interconnection and unity of theoretical and practical training of students with their activities in educational institutions and is designed to ensure high professional competence and professional culture of future teachers. The expressed opinion is confirmed by the scientific views of the scientist L. Khomych that "pedagogical practice" … "has great opportunities for forming a creative attitude to pedagogical activity, for determining the degree of professional ability and the level of pedagogical orientation" (Khomych, 1998: 167).

Teacher training internship (pedagogical practice of future teachers) is a means of their adaptation to work in an inclusive environment, because students have the opportunity to face the real problems of implementing an inclusive strategies in the education system of Ukraine; observe and work with children of different categories; to study their features using a set of specially selected methods; carry out an early diagnosis of interests and abilities; communicate with parents of children; solve problems in cooperation with experienced teachers; develop a sense of responsibility, tolerance.

At the beginning of the professional activity of young teachers, the problem of their insufficient psychological and methodical preparation for working with children with SEN often arises, there is no motivation to work with this category of children, there is a lack of professional competence to work in an inclusive environment, the presence of psychological barriers, professional stereotypes. The main psychological "barrier" is fear of the unknown, fear of negative influence of inclusion for the rest of the educational process participants, negative attitudes, professional insecurity of the future teacher, psychological inability to adapt to various pedagogical situations that arise. Future teachers, designing an inclusive educational process, face

the difficulties of choosing optimal ways of organizing coeducation of children with SEN, which is important for meeting their special educational needs, and children with normal development to overcome negativity in their attitude towards peers with psychophysical problems, etc.

Students, having gained practical experience of the first professional attempts to interact with the participants of the educational process in an educational institution, understand the need to acquire special knowledge and skills. After all, educational institutions determine the order for the implementation of individual educational approaches to different contingents of students: children with special educational needs, children with deviant behavior, gifted children, socially vulnerable children, migrant children, orphans, etc.

The teacher training internship (production practice of future teachers) is an integral and core component of the personal and professional development of a young specialist, a connecting link between theoretical training and independent work in educational institutions. During the period of practice, the formation of professional abilities, skills and competences takes place especially intensively, since it is carried out in conditions as close as possible to future professional activity, aimed at for solving specific professional educational tasks.

Teacher training internship (pedagogical practice) helps the future teacher consciously accept the philosophy of inclusion; learn to observe children, noting the slightest changes in their behavior and learning; overcome fears and debunk superstitions related to the education of children with special needs; identify gaps in professional knowledge and set goals for filling them; identify resources for organizing successful pedagogical activities.

Teacher training internship (pedagogical practice) ensures the establishment of a direct connection between theoretical knowledge and practice, since in the conditions of real professional activity there is an integration of students› knowledge and practical skills, which determines their mastery of the professional competence components.

Currently, the training of future teachers to work in an inclusive environment should be based on a competency-based approach and be aimed at improving the theoretical and practical areas of educational courses, in particular, Teacher training internship (pedagogical practice). We agree with the opinion of N. Agarkova that "pedagogical training of students at the university is an effective means of personal and professional improvement of future specialists" by mastering psychological and pedagogical competencies (Agarkova, 2019:76).

In order to fully develop the inclusive competence of the future teacher, it is necessary to attend parents meetings during pedagogical practice. Such meeting are passive for future teachers at the beginning, the student-listener takes over the experience of senior colleagues The next step is active participation in an information and

educational campaign, the purpose of which is to increase the level of awareness of parents regarding inclusion and various options for obtaining education for children with special educational needs (Borodina, 2014).

It is during pedagogical practice that students learn to consciously perceive the process of inclusion, to be responsible, to increase their knowledge of related specialties, to be ready to discuss problems, to acquire skills in resolving pedagogical conflicts, to be able to make the transition from pedagogical stereotypes of a directive model to flexible pedagogical thinking, initiative, creativity and adaptability. At the stage of teacher training internship (pedagogical practice), it is important to learn to create an environment that will promote the development of both children with special educational needs and children with normal development.

The experience showed that during pedagogical practice, future teachers have to learn to cooperate with various specialists who will help ensure the understanding and implementation of individualized learning, gain experience in better organizing the educational process with the entire group of children, have an individual approach, become more reflective and sensitive.

Teacher training internship (pedagogical practice of future teachers and educators) also involves acquiring the skills and experience to foresee various ways of including children with special developmental needs in the educational process: accepting children with special educational needs like other children in the group; involve children in group forms of work, joint problem solving; include them in the same types of active activities as other children, but set different tasks for them; in working with children, use active forms of learning such as games, projects, dramatizations, artistic creativity, modeling, constructive-building activities, search and research activities.

Teacher training internship (pedagogical practice) in Inclusive Resource Center and Rehabilitation Centers provides an opportunity for future teachers to familiarize themselves with a complex of rehabilitation measures (medical, physical, psychological, pedagogical) aimed at preventing and correcting developmental disorders of children with special educational needs.

In order to effectively organize an inclusive educational space, it is necessary, first of all, to provide personnel, which involves the training of multi-professional specialists team to work with children with special needs. And that is why it is important to ensure the constant active connection of the block of disciplines of psychological and pedagogical orientation with the practical work of various educational institutions. High activity in the process of independent work of future teachers in mastering the system of knowledge, abilities and skills in the cycle of pedagogical, social, psychological disciplines, in combination with the involvement of students in research activities will provide the necessary basis for the qualitative formation of skills and abilities to work with children with special needs.

Knowledge of the main stages of working with children with special educational needs and the main types of activities at these stages will help ensure the adaptation of future teachers to effective work in the conditions of an inclusive educational environment.

The diagnostic stage involves mastering diagnostic activities, the ability to organize and conduct a diagnostic study, to make a correct socio-pedagogical diagnosis.

The analytical and prognostic stage includes analytical activities for the study of intellectual, psycho-physiological, general personal capabilities of children, as well as the selection of leading ways of child's development and correction. The ability to predict is also necessary to observe the results of certain actions in the conditions of pedagogical practice.

The project stage involves the ability of the future teacher to set goals according to the results of the diagnosis, competently plan his activities, as well as the work of other participants in the educational process. It includes the development of an individual plan, a curriculum, a special educational program, a program for the inclusion of a child with developmental disabilities in the environment of healthy peers.

The activity stage is aimed at implementing an individual program of correction and development, including the child in joint activities with peers.

The evaluation stage involves the analysis and evaluation of the results of the work performed, the adjustment of the implementation process of the individual development program.

It is important for students to emphasize the fact that it is important not only to know specific methods, ways and techniques of teaching, the ability to use information resources, but also to have a certain attitude towards working with children with SEN.

Future teachers also need to master the consultative activity, which provides the opportunity to organize informational and educational support for all participants in the educational process, as well as the ability to carry out self-development and constant professional self-improvement.

On the eve of pedagogical practice, students noted: a) the presence of a feeling of anxiety and incompetence in matters of inclusive education; b) changes during the practice of attitudes towards inclusion from existing or latent resistance to awareness of the positive effects of inclusive education. The future teachers noted the following changes: mastering the knowledge of the characteristics of children with special educational needs, meaningful and procedural filling of the teacher training activity, which is worked out during practical classes, leveled the feeling of fear and professional incompetence.

3 Conclusion

The problem of preparing future teachers to work in an inclusive educational environment by means of teacher training internship (pedagogical practice) remains relevant and requires further research. In order to prepare and adapt future teachers to work in an inclusive environment during teacher training internship (pedagogical practice), targeted work is needed to improve knowledge of methodological preparation for working with children with special needs, learning to work in a team, to cooperate with all participants in the educational process, to learn new things and to spread the acquired knowledge experience. However, due to the insufficient development of this system in scientific and pedagogical research, there is an urgent need for theoretical and methodical improvement of the content of pedagogical practice as part of the professional training of future teachers to work in the conditions of an inclusive educational environment. We see the prospect of further research in the organization of pedagogical practice for working in distance learning conditions with children with special educational needs.

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Aesthetics of creating an inclusive theater of actors with ASD as an intervention tool

(overview essay)

Martin Dominik Polínek

Abstract: *The cardinal goal of the article is to point out the connection between the aesthetics of an inclusive theater performance and the degree of rehabilitation-formative work with an individual with ASD. We are based on the assumption and research that the more natural (healthier) the psychosomatic existence of an actor with ASD on stage as part of a theater production, the more aesthetically pleasing it is perceived by the audience. We focus on the theater therapy process, the basic means of which is bodily communication and bodily expression, which we consider to be the basis of an inclusive approach, which does not have to rely on words or the intellect as the primary communication channel. The following article aims to: Define the above-mentioned phenomena of para-theatre in such a way that their therapeutic-formative, rehabilitative and aesthetic significance is emphasized from the perspective of (not only) special education. Focus on the specifics of para-theatre work with actors with autism spectrum disorders from the point of view of two different approaches. It is closer to presenting a unique method of plastic-cognitive style of movement so that it can be a possible inspiration for paratheatre work with actors with disabilities in general.*

The article was also conceived on the basis of research within the project IGA_PdF_2023_021 Research on inclusion in individuals with special educational needs and problem behavior with regard to specific interventions.

Keywords: *specific theater, theater therapy, plastic-cognitive movement style, specific research, autism spectrum disorders, special educational intervention*

1 Introduction

Specific theatre, special theatre, inclusive theatre, integration theatre, theater therapy… these are terms that are often confused, often overused or, on the contrary, downplayed. The following post aims to:

- Define the above-mentioned paratheatre phenomena in such a way that their therapeutic-formative, rehabilitative and aesthetic significance is emphasized from the perspective of (not only) special education.
- To focus on the specifics of paratheatre work with actors with autism spectrum disorders (hereinafter ASD) from the point of view of two different approaches.
- To present closer a unique method of plastic-cognitive style of movement so that it can be a possible inspiration for paratheatre work with actors with otherness in general.

We look at these sub-goals from a perspective unique to the theater, although often neglected in paratheatre research and survey: from the viewer's point of view. Due to the reflection of the pandemic experience, we focus on the aesthetic benefit of audiovisual performances by actors with ASD, when we are interested in the extent to which it is possible to convey a specific artistic experience to the viewer in this form.

2 Specific theater and (versus) theater therapy

In the following part of the text, we will try to define elementary terms that are often misunderstood, are often confused even among the professional public, or are understood as contradicting each other. We believe that this fact does not stem from ignorance of the given issue, but rather from the nature of paratheatre work, which often stands on the border between art and therapy (cf. Valenta, 2011), and the specialists who deal with this work are recruited from two professionally different directions: special pedagogy and theater studies. It follows from the author's experience that these two professional camps are often subject to the mistaken impression of a kind of rivalry, competition and opposing directions. However, these tendencies often arise from differences in the terminology and theoretical bases of both disciplines, when the same paratheatrical phenomena are outwardly named by other, seemingly contradictory, terms.

However, if we examine the actual content and meaning of the given paratheatrical phenomena, we often come to the conclusion that both camps understand it similarly and only differ in their naming. To avoid the above, we will define some basic terms as we understand them for the given article:

A. B. Afonin, one of the prominent personalities in the field of specific theater, defines three types (2018):

- **Social theater**, which he understands as the most contemporary and up-to-date and theater that deals with social issues. The audience of social theater is encouraged to actively make social changes, and social theater presents them with topics on the one hand and solutions on the other. Social theater also includes work with marginalized social groups (e.g. homeless people).
- **Inclusive theater** is the one in which not only people with disabilities and healthy actors play, but also people with various specifics (seniors, people from other than theater professions). Here, the emphasis is mainly on socialization and integration goals.
- **A personal (specific) theater** is focused on an artistic effect, and the fulfillment of therapeutic-formative goals is a secondary effect. "Specific theater allows you to see the special side of a special person, their needs. … The peculiarity of the 'specific' theater lies in a unique view of the world, a view that connects the archaic with the actuality of art" (Афонин, 2018, p. 36). We can also distinguish a specific theater from other forms according to its creation. If a production (performance) can do without actors with specific needs, it means that such a production does not belong to the field of specific (personal) theatre. (cf. Polínek, 2020)

Paratheatrical activity, which is the focus of this research, is a link between the two latter: in the productions both actors with otherness and intact ones (sometimes in the role of assistants) play in the productions, at the same time their dramaturgy is aimed at conveying the specific life experience of actors with otherness through the theater, which we understand as an extension of art as such. In this text, we use both the term inclusive and **specific theater**.

Theater therapy is perhaps an even more discussed concept. In the text, it is understood as a process that is present within the paratheatre staging work and which is sometimes an independent part of it, which manifests itself, for example, in the natural fulfillment of the actors' basic needs (see Polínek, 2015 for details); at other times it is a very accentuated phenomenon that is purposefully channeled within the framework of para-theatrical work. An example of this second understanding of theater therapy can be the use of the method of plastic-cognitive style of movement, which is applied both as rehabilitation and as an artistic theatrical device (see below). Some authors speak of theater therapy as one of the expressive-formative or para-theatre disciplines (cf. Valenta, 2011, Müller, 2014, Růžička and Polínek, 2013). "However, realistically, theater therapy cannot exist without theatrical creation, or without theater as such. Clients of the theater therapy process usually do not consider their activity as therapy, but as an artistic or leisure activity" (Polínek, 2020, p. 47).

We can very well demonstrate the specificity of theater therapy by the phenomenon known as the paradox of theater therapeutic targeting, which was constituted on the basis of the examination of inclusive theater ensembles, or their goals (cf. Polínek in Müller, 2014; Polínek, 2020). This paradox states that:

- **The overall direction of the activity of specific theaters is aesthetic (artistic)**, where the basic goal is to create a theatrical performance – "to make theater". Even the clients (actors) themselves often do not think of their theater activities as therapy at all. That is why this activity is: authentic, free from the "psychotherapeutic stigma" and strongly motivating.
- However, **the specific goals mentioned are clearly directed towards the areas of therapeutic-formative, integrative, educational**; concrete artistic goals are in the absolute minority. Clients subjectively very strongly perceive therapeutic processes during paratheatre work: catharsis, the "as if" phenomenon, transference and countertransference in interaction with the audience, corrective emotional experience. – This experience clearly falls into the therapeutic-formative area.

From the above-described (seemingly contradictory) facts, we can formulate the following principle:

> The artistic targeting of theater therapy fulfills and enhances its therapeutic and formative goals.

Paradox can thus be the key to understanding and connecting both perspectives and working in a specific theater. This connection of both therapeutic and artistic perspectives can lead to further improvement and development of everything that specific theater brings.

3 Basic principles of production work in inclusive theatre

These principles have been the subject of long-term research by the author, who is the head of an inclusive theater for actors with ASD. They are key to understanding the specificity and interdisciplinarity of inclusive theatre, and are also the source of a new artistic quality that an actor with an otherness can convey to the viewer based on his or her different, and normally difficult to transfer, life experience. We could formulate the given principles as follows:

- **The actor is the subject, not the object of creation** – a partnership and respectful approach is applied to the specifics of the given actor, which is not understood only as a "means" to fulfill aesthetic goals.

- **Content (theme) corresponding to the actor** – when the real life stories of individual protagonists can be processed, or their specific experience is offered to the audience in a symbolic, metaphorical form.
- Form and methods accentuating: **creativity, spontaneity, naturalness, diversity (not chaos) and improvisation, therapeutic (rehabilitation) effect**.

We can also define these principles on the basis of a case study, or analysis of an unstructured interview with an actor with Asperger's syndrome (for details, see Polínek, Lipovský, 2019; cf. Kalina, 2008):

- **Containment (the ability to safely express your feelings within the community)** – "And most importantly, I understood and believed that expressing emotions outwardly is right. For us people with ASD, it is difficult to judge how we should behave in a situation and whether we will behave well. I had a problem with that, so I preferred not to show up earlier… …We are all different. It is important to function as a whole, but not to forget the individualities. E.g. you can't take the liberty with one as much as with the other."
- **Attachment** – "It was challenging to realize that we are a collective and not individuals. This is important to us with PAS. We are very much individualists in terms of functioning in life and interests. This is another experience for me, that we can work together in the theater and we are not just next to each other. An important message of the performance is to show unity. The audience does not perceive individuals, but the performance as a whole. And the viewer doesn't notice that this one is autistic, this one is an actor, this one is a psychologist. In rehearsals, everyone has their own function, but during the performance we are all together."
- **Taking responsibility for myself** – "When the director didn't meet all my demands, for example, he left out my solo scene, it hurt me at the time, but over time I understood it. … When he didn't think about my needs, it forced me to start perceiving the collective."
- **The importance of theatrical creation and its result (attachment, inclusivity)** – "For me, it is unimaginable that we would not perform. We are a theater, and the very development of the theater is related to the performances that come from our experiences. Without the performance, it would lose its meaning and motivation; I wouldn't have a chance to find out that I was able to play. I would lose the good feeling that I am able to do something that would have been unthinkable not long ago."
- **The specifics of entering an acting role (aesthetic distance)** – One of the principles of staging work in the specific is theatrical distance. If the content of the production is based on the life experiences (story) of one of the actors, then the actor is fundamentally not portraying himself. Not only can he keep a safe distance, but he can get a different perspective on his story as part of the performance. "It was very important for me to see my story played by another actor. It was very moving

considering my past – bullying. Even though it didn't make me feel good, it connected me to the audience that cared. Even though I couldn't even act as a co-star in one scene, as hard as it was for me, it didn't affect my confidence as an actor. I just started to believe in myself in ModroDiv." (Compare Polínek, Růžička, 2020).

4 Method of cognitive-plastic movement

To understand the context of the given contribution, it is necessary to present in more detail the method of cognitive-plastic movement, the unique approach of Natalija Timofejevna Popova, one of the world's leading figures in the field of specific theatrical creation. Members of the inclusive theater group Tyátr ModroDiv[1] apply this method as the only ones in the Czech Republic to their work. An audiovisual recording of one of the performances of this theater, which was staged through the method of cognitive-plastic movement and meets the above-mentioned principles of a specific theater, is a key part of the investigation of audience perception (see below).

In addition, this method represents a paradox of theater therapeutic targeting, as it is both a rehabilitation and staging method.

The method is primarily based on deep work with the body, the principles of which are based on ontogenetic development and integrally connect the body schema with psychic experience and neurological development. The bodily level thus becomes the basic means of communication within the framework of theatrical expression. The level of physical communication is equally accessible to both intact actors and actors with the most different types of otherness, unlike, for example, verbal communication, which can be limiting for some types of cognitive disability. The mastery of expressive movement is closely connected with the development of symbolic activity as such and reflexive human behavior. Through the adoption of the symbolic meaning of the body, a person's "belonging" to the world is realized, which is a basic prerequisite for communication and knowledge as such.[2]

The principle of this system is to work with a movement stereotype, which is the first step to activate the creative process. In the form of constantly repeating movement exercises, the developmentally oldest muscle areas are activated, and later the perception of the partner on the stage develops. Most exercises are characterized by a slow pace of movement and static pauses – stiffness, immobilization, which allows to activate the lower levels of movement organization, reduce intellectual control and activate the bodily level of consciousness.

The process later continues with the development of dance movement and its use to create a theatrical performance within the framework of the so-called plastic

[1] www.modrodiv.cz

[2] Personal materials of N. T. Popova

special theatre. During the exercises, great emphasis is placed on increasing the awareness of the bodily experience. Each exercise is always followed by a short relaxation, in which the client is aware of the bodily sensations caused by the given exercise (cf. Popová, 2013; Polínek, Růžička, 2020).

5 Audience perception of the aesthetic level of audiovisual recordings of specific theater performances

The main part of the contribution introduces the audience to the pre-research of the perception of the aesthetic level of audiovisual recordings of inclusive performances by actors with ASD, the purpose of which is to investigate the premise that the higher the quality within the plastic-cognitive movement style of rehabilitation is, the higher is the aesthetics for the viewer.
Within the framework of the classical theater scene, the ordinary Czech spectator has a very limited opportunity to encounter productions of classical plastic theatre, which is an established theatrical approach abroad and which presupposes the spectator "experienced" in the perception of this theatrical medium.3

It is therefore a question of verifying the assumption that communication through bodily expression can be far more communicative, especially for individuals with an otherness, than verbal communication, in which people with disabilities often encounter limits both in terms of content and form. As part of the preliminary research, we therefore set the following questions:

Is the movement and symbolic style of the theater really informative for the (especially Czech) viewer?

Can it also have an overlap through an audiovisual recording?
Isn't theater based on verbal acting more expressive and aesthetic for the viewer?

The essence of the investigation was a comparison of the perception of recordings of two inclusive performances by two theater companies. The recordings had a similar footage; both productions were based on the actors' specific life experiences with ASD, and both plays featured actors with Asperger syndrome. The difference was in the theatrical means:

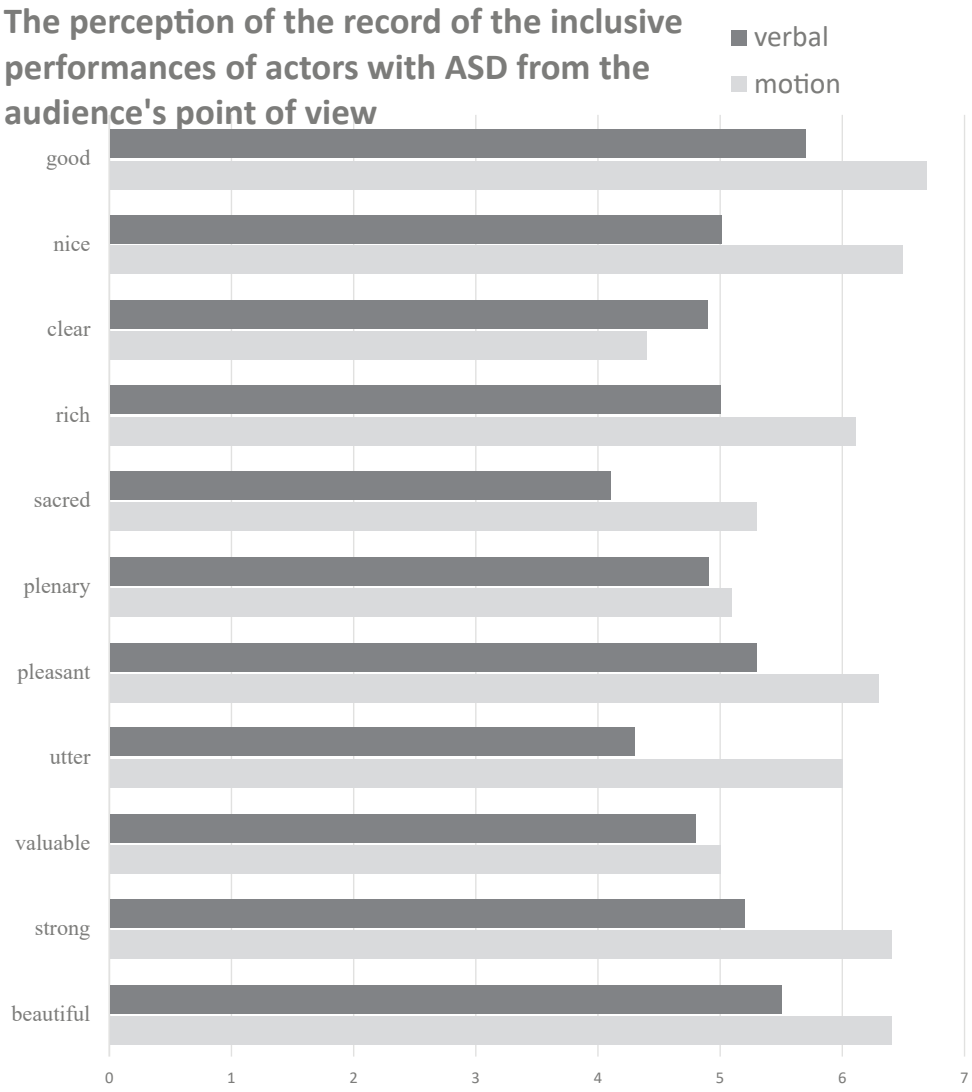
- **one production** was created on the basis of **cognitive-plastic movement** and the sharing of different life experiences was **metaphorical and symbolic**;
- **the other one** was based on **verbal acting**, which conveyed to the viewer **specific life episodes** of the protagonists – actors with ADS.

[3] Far Eastern theater (e.g. the Chinese Peking Opera) also assumes an "educated spectator" in a similar way.

Due to the needs of the research, random sampling combined with the snowball method was chosen, where the basic set, which was equal to the sample, was all potential viewers in the Czech Republic. The research set consists of over 500 respondents, of which 40 were randomly selected for pre-research.

Data were collected through a modified Osgood's Semantic Differential, using which viewers rated both recordings. The data was then analyzed by the method of contrasts and comparisons and was expressed graphically:

Graph 1



From the preliminary results of the preliminary research, we can conclude:

- Both productions were evaluated positively by the audience globally. In a seven-point scale, when values 1, 2, 3 are an accentuation of the negative polarity of the given category, value 4 is neutral, and values 5, 6, 7 express a positive audience evaluation; viewers evaluated all categories positively, or no value was less than 4. **We can therefore state that the aesthetics of both theater performances are of a higher level.**
- Almost all categories were rated better by the audience in the case of a symbolic performance based on movement theatrical expression. When both the potency factor and the evaluation factor were almost 1.5 degrees higher in plastic theater than in verbal theater. From which it follows that **the movement and symbolic style of inclusive theater is generally much more appreciated by the audience than the verbal style**.
- However, the verbal performance is clearer for the audience (by half a degree) than the moving one, from which we can conclude that **both performances are sufficiently communicative at the rational-content level, even though the verbal theater is slightly clearer**.
- On the contrary, **in categories that focus more on experience and transcendence**, such as the concepts: beautiful, deep, strong, sacred, **the production based on the cognitive-plastic style of movement significantly dominates**.

6 Conclusion

These preliminary results indicate that the really high rehabilitation potential of the method of plastic-cognitive style of movement, which is proven by the researches of N. T. Popova for more than 30 years of research, is directly proportional to its aesthetic value. These results confirm the phenomenon of the paradox of theater therapeutic targeting and indicate the possibility of estimating the therapeutic-formative and rehabilitative effect of paratheatre work based on its aesthetic level. A very interesting confirmation of the above is also the fact that the audience at the plastic performance very often expressed the need of a positive response outside the scope of the scale evaluation. These spontaneous reactions of the audience hardly occur in verbal theater.

In conclusion, we select some of the typical audience reactions to the recording of the plastic performance:

"I was fascinated by the show. It's beautiful how many things, emotions, motivation, feelings are hidden in mere movement."

"The theater was amazing, I had chills the whole time. It was great to be able to understand what was going on in this play."

"I liked it very much. I was very interested in the whole concept, I like how the movement blurs the distinctions between people with autism and people without autism, intact. It's beautiful to watch, it exudes calmness and a certain confidence from all the actors."

"I really liked the show, I was very surprised that you can take the work of the body associated with the theater in this way and express so much emotion."

"I watched the show 3 times and I kept finding new and inspiring things here. Thank you for the wonderful experience and motivation."

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The importance of the foot in life of the people with visual impairment

(overview essay)

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Abstract: *The importance of the foot in the life of the visually impaired is unimaginable. People with visual impairment are a potentially weakened target group regarding the genesis of various orthopedic problems as well as morphological and structural foot deformities. The foot has an important functional relation within the lower limb and body. The paper shows importance of the health state of the foot in their life and describes the foot as an important potential therapeutic tool for maintaining or improving the quality of life. Maintaining a healthy foot in this population should be a significant need. A lot of studies are solving the foot on foot-based interfaces that stimulate the surface of the foot with vibrations. It could be used in several fields such as sensory substitution virtual reality, rehabilitation and among others.*

Keywords: *foot, visual impairment, foot stimulation, postural balance, sensory feedback*

1 Introduction

The foot has an important functional relation within the lower limb and body. It constitutes an important supposition for maintaining the balance while standing, walking and in other derived movements (Votava, 2002). The function of the foot is static (bearing) and dynamic. The foot is illustrated as a "tripped model", when the healthy foot with well-developed arches is supported only in 3 points (calcaneal protuberance, 1st metatarsal head and 5th metatarsal head). A healthy foot has a metatarsal head when laid on the mat and contributes roughly equally to transfer body weight. Plantar scrolling (unwinding) in healthy feet is the transfer of the pressure (center of pressure) through the lateral beam, from the 5th metatarsal head toward the 1st metatarsal head (Riegerová, Přidalová, & Ulbrichová, 2006).

The function of the foot is to create a solid base and an equal distribution of excessive burdens of the lower limb while walking, and to reduce the energy intensity of walking while moving the body forward (Gross, 2002). The function of the foot is conditioned by its anatomical structure, which is contingent on the organization of the bones into two-foot arches (longitudinal and transverse). Longitudinal vault is contingent on the higher medial arch, which is created by three medial beams connecting talus, ossa cuneiformia, the 1st to 3rd metatarsus and phalanges of the first to third toes; it is employed during dynamic loading. Transverse vault is conditioned by the shape and organization of osa cuneiformia (cuneiform bones) and proximal metatarsals. Its role is to provide protection to soft structures in the sole of the foot and partially absorb forces created when body weight is transferred. From the phylogenetic point of view, similarly to vertical pater, the vault is a young structure, and therefore labile and relatively easily vulnerable. Its disorders belong to the most common orthopedic defects in general. Static defects of the forefoot (hallux valgus, digitus quintus varus, hallux varus, hallux rigidus, digiti malei, digiti hamate, digiti Hippocratici) occur most frequently. Pain occurs frequently in the heel and in metatarsals. The typical defects of the foot vault are flat longitudinal vault (pes planovalgus), transverse flat foot (pes transversoplanus), and hollow foot (pes cavus; pes excavatus) (Riegerová, Přidalová, & Ulbrichová, 2006). The structure and function of the foot are adjusted to an appropriate distribution of body weight while standing and when moving in a gravitational field, the flexibility and shock absorption during movement, as well as a huge source of receptors necessary for the proper management of posture and motor on the principle of cybernetics (the principle of biological "locomotive computer") (Müller, 2011).

Results of studies of foot stimulation show that people understand easier directional information with patterns providing reference points rather than motion. Familiar patterns and emotions can also be easily recognized by the foot if information displayed is simple and encoded as short, structured messages. New patterns abstractly representing information can also be understood, quickly learned, and retained in memory (Velázquez, Bazan, Alonso, & Delgado-Mata, 2011). It was describing the development of vibrating insoles, which providing a subsensory mechanical noise signal to the plantar side of the feet. It may improve balance in healthy young and older people and in patients with stroke or diabetic neuropathy. This study describes the requirements for the tactors, (tactile actuators) insole material and noise generator. A search for the components of vibrating insoles providing mechanical noise to the plantar side of the feet was performed. The mechanical noise signal should be provided by tactors built in an insole or shoe and should obtain an input signal from a noise generator and an amplifier. Possible tactors are electromechanical tactors, a piezo actuator or the VBW32 skin transducer (Hijmans, Geertzen, Schokker, & Postema, 2007). For example, the study of Hijmans, Geertzen, Zijlstra,

Hof, & Postema (2008) investigated the effects on standing balance of random vibrations applied to the plantar side of the feet by vibrating insoles in subjects with neuropathy and nondisabled subjects. In subjects with neuropathy, an interaction effect between vibration and an ADT was found for balance. No effects of vibration on balance were found in nondisabled subjects. Vibrating insoles improved standing balance in subjects with neuropathy only when attention was distracted. Improvement of the insoles and their activation is needed to make their implementation in daily living possible and effective.

Multiple sensory information arising from one or various sensory sources might be co-processed following a common vectorial addition mode for postural regulation purposes. Such an integrative mechanism does not imply that the relative contributions of all sensory modalities must be equivalent, however. Rather, this study suggests that proprioceptive and tactile feedback might be differentially involved in human postural control according to body or environmental constraints (Kavounoudias, Roll, & Roll, 2001).

2 Overview of research findings in the topic related to foot stimulation

Velázquez, Pissaloux, & Lay-Ekuakille (2015) stated that tactile interfaces that stimulate the plantar surface with vibrations could represent a step forward toward the development of wearable, inconspicuous, unobtrusive, and inexpensive assistive devices for people with visual impairments. They studied how people understand information through their feet and to maximize the capabilities of tactile-foot perception for assisting human navigation. Based on the physiology of the plantar surface, three prototypes of electronic tactile interfaces for the foot have been developed. With important technological improvements between them, all three prototypes essentially consist of a set of vibrating actuators embedded in a foam shoe-insole. Perceptual experiments involving direction recognition and real-time navigation in space were conducted with a total of 60 voluntary subjects. The developed prototypes demonstrated that they could transmit tactile information that is easy and fast to understand. Average direction recognition rates were 76%, 88.3%, and 94.2% for subjects wearing the first, second, and third prototype, respectively. Exhibiting significant advances in tactile-foot stimulation, the third prototype was evaluated in navigation tasks. Results show that subjects could follow directional instructions useful for navigating spaces. Footwear providing tactile stimulation can be considered for assisting the navigation of people with visual impairments. The study of the Velázquez & Bazan (2013) presents work on foot-based interfaces that stimulate the plantar surface with vibrations. These vibrations convey spatial and temporal information that could be exploited in several domains. One of the most challeng-

ing applications is perhaps the assistance of the visually impaired: vibrations can be perceived by users as cardinal directions that assist their navigation. Three prototypes of foot-based interfaces have been developed seeking to optimize user perception. Designs, prototypes, and perceptual results are presented and discussed. Results show the potentials of podotactile stimulation in assistive devices. Another paper wrote by Velázquez, Bazan, Alonso, & Delgado-Mata (2011) presents further development of a wearable electronic tactile display that stimulates the mechanoreceptors in the foot sole with vibrations and proposes a technologically improved second device and new optimized tactile patterns that lead to significant advances in tactile-foot perception. Following the lessons learned from a previous prototype, they propose a technologically improved second device and new optimized tactile patterns that lead to significant advances in tactile-foot perception. A series of experiments involving directional information, pattern and emotion recognition, and language learning were conducted with 20 healthy sighted voluntary subjects. Results obtained confirm the pertinence of these advances and show the potentials of podotactile stimulation and the proposed device. Velázquez et al. (2019) mentioned that haptic technology allows producing computer-generated signals that a perceiver experiences through touch. In general, haptic devices can be classified as active and passive. In this paper, they present a performance evaluation of a group of 10 voluntary subjects in a task of shape perception when both active and passive kinesthetic haptic feedback are provided. The results of a series of psychophysical experiments show that active haptics is superior for shape recognition: active haptics enhances the perception of surfaces while passive haptics conveys the sensation of being guided along pathways. In addition, the guidance nature of passive haptics makes the pathway direction easy to recognize. This last observation can be effectively exploited in more challenging tasks such as navigation/mobility assistance. It is unknown to what extent automatic postural responses are triggered by lower leg proprioception.

Bloem, Allum, Carpenter, & Honegger (2000) was studying postural control in five carefully selected patients with subtle diabetic polyneuropathy (restricted to the lower legs) and 15 healthy subjects. All patients had bilaterally absent Achilles tendon reflexes and weak or absent patella tendon reflexes, but muscle strength was fully preserved. Subjects were tested while standing on a supporting, movable force-plate. The contribution of lower leg proprioception to automatic postural responses was investigated by randomly exposing the subjects to either 4 degrees 'toe-up' rotational perturbation ('normal ankle input'), a simultaneous 4-cm rearward translation and 4 degrees toe-up rotation ('enhanced ankle input'), or a simultaneous 4-cm rearward translation and 4 degrees 'toe-down' rotation ('nulled ankle input'). A few automatic postural responses appeared to be triggered or modulated by lower leg proprioception. The absent stretch reflex and weaker balance-correcting responses in patients produced changed trunk velocity profiles (mainly a reduced initial backward motion

of the trunk), but lower-body segment movements showed no consistent differences between the two groups. Velázquez, Bazán, Varona, Delgado-Mata, & Gutiérrez (2012) presents a novel wearable interface for the foot: a shoe-integrated tactile display that enables users to obtain information through the sense of touch via their feet. A 16-point array of actuators stimulates the sole of the foot by inducing different vibration frequencies. A series of experiments were conducted with 20 sighted and 5 blind voluntary subjects to evaluate the role of tactile perception by the human foot and the tactile sensitivity of the plantar surface. Tests evaluated the perception of simple shapes, patterns, and directional instructions. The results showed that some information is discriminable, and that tactile-foot stimulation could be used for a wide number of applications in human-machine interaction. Furthermore, the results also suggested that the blind perform better in some key tasks and support the feasibility of footwear providing tactile feedback for situational awareness, mobility, and the navigation assistance of the blind.

Deficits in motor control can be observed with a decrease in plantar sensation. There is evidence that changing the plantar feedback leads to kinematic, kinetic, and neuromuscular adaptations in static as well as dynamic conditions. The effect of changes in plantar feedback on the modulation of gait has not been clarified conclusively. Changes in plantar feedback led to stimulation-specific adaptations of gait characteristics. Further prospective studies should be performed to investigate interventions for enhancing plantar receptor feedback for the prevention of falls and the treatment of injuries and movement disorders (Alfuth & Rosenbaum, 2012).

Lipsitz et al. (2015) tested whether subsensory vibratory noise applied to the sole of the foot using a novel piezoelectric vibratory insole can significantly improve sensation, enhance balance, and reduce gait variability in elderly people, as well as to determine the optimal level of vibratory noise and whether the therapeutic effect would endure, and the user's sensory threshold would remain constant during a day. The vibratory insoles significantly improved performance on the Time Up and Go test, reduced the area of postural sway, and reduced the temporal variability of walking at both 70% and 85% of the sensory threshold and during a day. Vibratory sensation thresholds remained relatively stable within and across study days. This study provides proof of concept that the application of the principle of stochastic resonance to the foot sole sensory system using a new low-voltage piezoelectric technology can improve measures of balance and gait that are associated with falls. Effective vibratory noise amplitudes range from 70% to 85% of the sensory threshold and can be set once daily.

Rocha, Bonfim, Assis, Oliveira, & Almeida (2020) have collected the research data from the scientific databases (Science Direct, MEDLINE/PubMed, Web of Science and Scielo). The study is a literature review aimed at synthesizing information regarding the relationship between body posture, gait biomechanics, and the use of sensory

insoles, as well as contributing to the investigations on this topic. They have selected the articles that contained literature reviews, treatment, or on-site surveys, published up to 2020. This review has identified the existence of several commercially available pressure sensors, with technologies such as capacitive, resistive, piezoelectric, and piezoresistive sensors. This study has also identified several advantages in the use of the insole technology: improvements in balance and speed rates in the anteroposterior region; redistribution of plantar pressure during walking for diabetic patients; alteration of the pressure over time relationship throughout the entire plantar region. The progress obtained using these sensors over the past few years has been motivating researchers to aim for improvements in its performance and practicality, allowing for its use in diagnosing balance disorders, which can be related to body posture and gait biomechanics.

Giri & Borkar (2021) reviewed the effects of sensory stimulation interventions on balance and postural control in diabetic peripheral neuropathy. Here was strong evidence of effects of sensory stimulation on postural control and balance with noticeable difference in diabetic peripheral neuropathy. Based on our analysis results, most of the study stated that vibration, plantar massages, kinesiotaping, rocker shoe, vibromedical insole, conventional exercises with proprioception stimulation, mechanical noise have shown significant difference on balance and postural control.

Subsensory mechanical noise applied to the feet of quietly standing individuals with vibrating insoles leads to enhanced feedback and reduced postural sway. Differential effects noted between young, and elderly indicate that elderly people gain more in motor control performance than do young people with the application of noise to the feet. Young participants might have almost optimum sensory feedback and balance control compared with elderly patients, who often have lateral postural instability and raised sensory feedback thresholds. Noise-based devices, such as randomly vibrating shoe insoles, might be effective in enhancement of performance of dynamic balance activities (e.g., walking), and could enable older adults to overcome postural instability caused by age-related sensory loss (Priplata, Niemi, Harry, Lipsitz, & Collins, 2003).

3 Conclusion

Several studies are solving the foot on foot-based interfaces that stimulate the surface of the foot with vibrations. It could be used in several fields such as sensory substitution virtual reality, rehabilitation and among others. Some study was describing the development of vibrating insoles which providing a subsensory mechanical noise signal to the plantar side of the feet. These may improve balance in persons with visual impairment, also. Vibrations can be perceived by users with visual impairment as main directions that assist their navigation. Studies show the potentials of podo-

tactile stimulation in assistive devices. Noise-based devices, vibrating shoe insoles, might be helpful in overcoming postural instability caused by age related sensory loss. Some automatic postural responses seem to be started or impacted lower leg proprioception. The observed improvement with these sensors over the past few years has motivated researchers to focus on improving their performance and practicality. This is used in the diagnosis of balance disorders. Next studies should be realized to investigate interventions for enhancing plantar receptor feedback for the wider spectrum of diseases and movement disorders, also.

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Preparation of elicitation material for word association task in Czech sign language

(scientific paper)

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Abstract: *Linguistic competence of every person consists of knowledge of grammar and lexicon. Lexicon is structured in such a way that enables fast retrieval of words, understanding word meaning etc. Word associations (WA) help us to understand organization of words in the mental lexicon. WA have been scarcely used in sign languages. As we plan a research of WA in Czech sign language, we need to make a list of suitable signs. Our paper describes the process of making this list, our resources and role of deaf consultants as vital part of the research preparations.*

Keywords: *Czech sign language, word associations, mental lexicon, elicitation material*

1 Introduction

Czech sign language (Czech SL) is the first language of many deaf Czechs. Czech, on the other hand, is their second language. Furthermore, since they don't hear Czech, they cannot acquire it spontaneously. It is a foreign language for them and many struggle with reading comprehension and written expression in Czech. In our study we intend to have a closer look at the way words and signs are stored in the mind of Czechs who are deaf.

In order to do that, we will use word association task. We will study associations in both Czech SL and in Czech; also, there will be a group of hearing Czechs who will perform the task only in written Czech. The paper presents introductory stages of the research. It explains the choice of signs for the task and the role of deaf adult consultants.

1.1 Linguistic competence, mental lexicon

Linguistic competence is knowledge we acquire when we learn a language. It is what we need to understand language and to produce it. Linguistic competence of every person consists of knowledge of grammar and lexicon (Fernández, Cairns, 2014).

Mental lexicon is the "word storage". It contains information about word meaning and about its grammatical characteristics. For example, we know whether the word is countable or uncountable or which word class it belongs to. Meaning of a word in the mental lexicon is common for all who speak the language (Fernández, Cairns, 2014). Mental lexicon includes not only information about each word, but also helps us see the words in relationships to other words. This way we know which words have similar meaning, which ones can be used interchangeably and how the meaning of a word may vary according to context (Aitchison, 2012).

Mental lexicon is structured in such a way that enables fast retrieval of words and understanding word meaning (Nebeská, 1992). Every word can belong to several different groups based on various criteria, e.g., semantic fields, principal of coordination or subordination, pair organization, paradigmatic and syntagmatic organization (Nebeská, 1992). We use our mental lexicon knowledge to anticipate what words are likely to follow in a text or in speech (Ungvarsky, 2021). There are several theories and models that draw possible structuring of a mental lexicon. One example is *spreading activation theory* (Collins, Loftus, 1975). It says that words are interconnected according to semantics; when we activate a certain word in our memory, we partially activate those that are similar in meaning. *Model of lexical access* (Levelt, Roelofs, Meyer, 1999) works not only with word meaning but also with syntactic information, morphological and phonological form of words. To mention one more model, there is *multiplex model of mental lexicon* (Stella et al., 2018) – *multiplex* meaning there are more layers in the structure and each layer codes words according to different key. The organization and representation of words in the mental lexicon is still an interesting issue for psycholinguists; a lot is yet to be discovered.

1.2 Czech sign language research

In 1960, the American linguist William C. Stokoe published his work Sign Language Structure, where he presented the results of a large-scale linguistic analysis of American sign language (ASL) and demonstrated that sign languages of the deaf have all the necessary features of natural languages and are therefore full-fledged languages. These features especially involve the existence of double articulation (segmentation) in sign language, systematism, sign-based nature, productivity and the historical context of sign languages (cf. e.g. Černý, 1998; Karlík, Nekula, Pleskalová et al., 2002; Bímová, 2002; Slánská-Bímová, Okrouhlíková, 2008). These Stokoe's activities became an impulse for a lot of subsequent research focused on sign languages all over the world.

The Czech Republic launched research into Czech SL as late as 1993. The original goal of the research was tied to practice, as schools for children and youth with hearing impairment had begun to point out the inconsistency of signs of Czech SL and called for their unification and a general definition of which signs were "correct" and which not. The call concerning the lexical component of Czech SL cannot be fulfilled until Czech SL has been described in full, including all its components. The research is aimed at collecting all the data and provides a thorough description of Czech SL.

The primary objective of the research is a comprehensive description of Czech SL (the lexical and grammatical aspects). The methods of research and linguistic description of Czech SL are vastly different from methods used in the research of spoken languages due to the different mode of existence and specific features of sign language. Major difficulties in the research of Czech SL become apparent, according to Macurová and Bímová (2001), already during the collection of linguistic data. The best option would be to have a researcher who is a native speaker of the language under study. However, this is not possible in the Czech Republic due to the shortage of linguistically trained instructors of sign language. Elicitation method was therefore used to describe Czech SL, although it is problematic and its credibility questionable.

Comprehensive research of Czech SL is a long-term project. It is vital, however, the acquisition of high-level communication skills, as a full application of total and bilingual communication systems in the education of children with hearing impairment, requires excellent instruction material used for teaching the lexicon and, particularly, the grammar of Czech SL. Such textbooks are not available on the Czech market yet. On the other hand, some studies focused on the quantitative linguistic analysis of the Czech SL were published (cf. e.g. Langer et al., 2020).

Unfortunately, no relevant study focusing on frequency of certain signs or sign classes has yet been published (as it is the case of spoken languages with word classes and big datasets).

2 Word Associations

Our research goal is to study mental lexicon in Czech SL. For this purpose, we have decided to use word association (WA) task. This section explains what a word association task is, what is its current use in linguistic research and elsewhere.

2.1 Introduction of word association task

A common WA task means that **a person reads/hears a word and is asked to produce the first word(s) that come to their mind** (De Deyne, Storms, 2015) – these words are called ***associations***. In this case, the task is called *free* word associations since there are no special requirements concerning the reactions apart from it being

a word (Novák, 1988; De Deyne, Storms, 2015). De Deyne et al. (2019) claim this task to be very suitable for understanding mental representations and processes in word understanding and in understanding language in general. Planchuelo et al. (2022) state that WA task can give us useful signals on the organization of mental lexicon.

Some languages have large databases of word associations (Dutch, Korean, Japan, English) (De Deyne, Storms, 2015). These include associations to more than 1000 cues (Jung, Na, Akama, 2010; Okamoto, Ishizaki, 2001; De Deyne, Navarro, Storms, 2013). These foreign databases are a very useful and reliable source for psycholinguists when assessing word associations (Planchuelo et al., 2022). In Czech, there are norms for free word pair associations. Author of these norms is Zdeněk Novák. His list of 150 cue words has been used to set norms for adults (Novák, 1988), later he created norms separate for man and women (Novák, 1992) and norms for children of five, seven, nine, eleven, thirteen and fifteen years of age (Novák, 1996).

There are different variants of the word association paradigm. For example, the task can be administered on paper and people are asked to write their responses down. This way, more people can work on it at the same time, even in the same room. Next, it can be administered individually in spoken words. In this case, participants give their answers orally. Also, there may be a limit on the number of associations (pair associations means only one association for each cue word) or no limit; or there may be certain specification of the response (De Deyne, Storms, 2015; De Deyne, Navarro, Storms, 2013; Mann, Sheng, Morgan, 2016; Novák, 1988).

Associations are then coded and analysed. Novák (1988) says that the easiest way to work with word associations is to give their list for each cue word based on the number of the responses. This way we can see which associations are most common for a certain cue word. Next, we can code associations to be paradigmatic or syntagmatic (Sheng, McGregor, Marian, 2006). The choice of coding always depends on the goal of our research.

Outside linguistics, we can find word associations to be used to understand customers' preferences and in marketing research. For example, Riquelme, Robert, Arancibia (2022) wanted to understand older peoples' perceptions about desserts. Even such research uses the characteristics of word associations that are studied by linguists. Word associations can reveal customer views and perception (by using episodic memory or ascribing a word certain emotional value). Associations can be also connected to the cue word by shared characteristics or by their tendency to appear frequently together (De Deyne et al., 2019).

Today word associations are used as a practical tool to investigate word representations in mental lexicon (De Deyne et al., 2019; Planchuelo et al., 2022). However, the task has been employed in research of semantic depth of children with developmental language disorder (Sandgren et al., 2021) and in research of language disorders in bilingual children (Sheng et al., 2012). Also, we encounter the word association

paradigm in research that studies second language acquisition (e.g., Clenton, 2015; Fitzpatrick, Izura, 2011).

2.2 Word associations in sign languages

Although there have been several WA studies in the population of people who are deaf or hard of hearing, most of the time it deals with spoken or written language. WA in sign languages has been extremely rare so far to the point that, as far as we know, there is only one study that used the WA task in population of bilingual deaf children.

This research was conducted by Mann, Sheng and Morgan (2016) and it was part of a larger linguistic study. WA was just one of several linguistic tasks. WA was chosen to understand lexical-semantic organization of mental lexicon in bilingual deaf children. The languages in question were American sign language and English. Deaf children in this research were all native speakers because they had at least one deaf parent; the children were 6–10 years old. There were two sessions, each for one language. For every session, there was a set of stimuli (cues) to which children responded in the same language as the stimuli. Responses were coded as paradigmatic or syntagmatic. As a control group, hearing children did the same task in English. Authors of the study focused mainly on associations related by word meaning.

Results indicate that language development of deaf children is in both ASL and English based on similar learning mechanisms. Regarding the comparison with the hearing group, it seems that semantic development of the first language (for deaf it is ASL, for hearing English) is surprisingly similar despite the difference of modality and other distinctive traits of the two languages (Mann, Sheng, Morgan, 2016).

In Czech context, there were at least two studies we know of that used WA task in people with hearing impairment (Rádlová, 2005; Kozubíková, 2006). Both of them were works of students at Faculty of Education at Palacký University Olomouc. These studies fit in a type of research that primarily focuses on second language of the population, in our case, Czech (not Czech SL). Both students used Novák's set of 150 Czech words (Novák, 1988) and performed the WA task in written form. Each of them worked with different age group – Kozubíková (2006) with adults, Rádlová (2005) with pupils at secondary schools.

WA in Czech SL has not been used so far, therefore, there is no set of cue signs available. Since we want to study mental lexicon in Czech SL, we have decided to prepare a set of our own. Set of signs and of Czech words will be inspired both by Mann, Sheng and Morgan (2016) and by Novák (1988).

3 Our word association task

Next section explains the preparation of our set of cue signs, introduces our most vital resources and we describe the process it took to finalize list of 50 stimuli. Our population are pupils and students who use Czech SL in everyday life and study at secondary schools, high schools, and universities.

3.1 Resources

There were two major resources for our list of cue signs. These were study of Mann, Sheng and Morgan (2016) and a set of Czech words assorted by Novák (1988).

Mann, Sheng and Morgan (2016): their research design is very similar to ours. Therefore, we were hoping to be able to use some of their procedures when preparing our list. However, we knew that we cannot just copy and translate their set of cue signs because it was obvious that their set was intended for younger children in their cultural context.

Like in their study, we have decided to start with sign language and translate the signs to Czech for the written variant in Czech, and not vice versa. We did not want to start with Czech words and translate them to Czech SL because our main goal was understanding Czech SL mental lexicon. We wanted to make the list of signs as representative of the language as possible. And even though it was clear that there are limitations to this, we started with choosing signs of Czech SL.

Next thing based on Mann, Sheng and Morgan (2016) is the research design. They compared L1 (first language) and L2 (second language) in deaf bilinguals and L1 of hearing control group. We plan to do the same in our cultural and language context. Another thing we do similarly is the type of WA task that allows participants to respond with more than one association (maximum 3). We also take their structure of word classes included in the set of cue signs because so far, we do not have data for Czech SL that would be suitable basis to do it otherwise. This way we want to accomplish that our and their research findings could be comparable.

On the other hand, we do not adopt the number of cue signs. Mann, Sheng and Morgan (2016) chose 40 signs. Our set consists of 50 signs. We have decided on the number based on their research and on Novák (1988), who used 150 cue words. Mann, Sheng and Morgan (2016) used their set for younger children, and we knew that our participants will be older and probably well able to keep attention a little longer. Novák, on the other hand, used only free word *pair* associations. This meant that less time was spent on each stimulus than in our case (we want more than one association for each cue sign/word). These thoughts led us to the final number of 50 signs and 50 words (in the Czech version).

Mann, Sheng and Morgan (2016) selected signs from British Sign Language Vocabulary Test (Mann, Marshall, 2012) and adapted them to ASL. In Czech SL, there

are no such tests so far so we decided to choose signs similar to their signs, but more appropriate for our age group. We used their set and Novák's set as an inspiration.

We find it vital that during the process, we consulted the signs with adults who use Czech SL for over 40 years. This step was inspired by Mann, Sheng and Morgan (2016) but also respects the Position Paper on Research and Teaching of National Sign Languages (World Federation of the Deaf, 2023; online).

Concerning the administration of WA task, we will have videos of signs (same as Mann, Sheng and Morgan, 2016). However, we will not collect responses only by writing down glosses but we will use a video recording of the session. This is to ensure the possibility to analyse the data later and, in case of uncertainty, discuss with deaf consultants.

Second important resource of our set of signs is **Novák's set of 150 Czech words** (Novák, 1988). His work has some limits – e.g., it may be considered outdated, it does not take sign language into account and the task itself is slightly different to ours (Novák worked with pair associations). Still, the fact that his set does have norms and the fact that it is more appropriate to our cultural and geographic area makes his list of words a valuable resource. Novák (1988) describes the choice of words for his list thoroughly. Unfortunately, this process cannot be applied in our case. Novák used data about Czech language such as frequency of word classes and frequency of certain words. This makes his list very well balanced, and it can be representative of real language. As for Czech SL, we do not have any corpus (yet) so data concerning frequency or what is representative of the language are missing. This led us to accept structure of word classes proposed by Mann and Marshall (2012) for children 10 years old and older – 6:2:2 (nouns, verbs, adjectives, respectively). Actual signs were inspired by Novák's list, by the set of signs of Mann, Sheng and Morgan (2016) and some of our signs were changed or added according to our goal.

3.2 Process

Process of making our elicitation material consisted of several steps. We needed to decide the number of signs, their structure (mentioned earlier in this article), choose actual signs and film the material. A vital part of the process were consultations with native signers and with Czech SL teachers who use the language on everyday basis.

We have already explained how we came to the final number of 50 signs and their structure of 6:2:2 (nouns, verbs, adjectives). Choice of actual signs was motivated by Novák's list (in our final list, 27 signs are equivalents to his cue words and 2 more signs are similar but modified), by Mann, Sheng and Morgan's list of signs (we have 10 signs of equivalent meaning; one of them overlaps with a word from Novák). 12 signs are of our own choice to meet the required number of signs in each word class. This final list of 50 signs is a result of a longer process we describe further on.

First, we needed to pick signs and prepare them into a format that could be assessed by our deaf consultants. After choosing our core set of 50 signs (30 nouns, 10 verbs and 10 adjectives according to the 6:2:2 structure) we also added alternative signs. These were our reserve in case some of our original signs would be found unfit for the task (unknown signs, conflicts in meaning etc.). The core set and alternative signs also included regional variants to determine which one would be best to use or whether it would be best not to use the sign altogether. The total number of signs was 90. We made a video of each sign. Then we matched every sign with a number to have a reference with no hint of the sign's meaning. All signs were put together in one longer video. Number of a sign always appeared first and then there was a sign itself; organized from sign number 1 to sign number 90.

We prepared a table to collect **assessment of the signs**. For each sign, our consultants were asked to fill in **meaning/s** of the sign, estimate its **frequency of use** (1–5; 1 *not used at all*, 5 *used very often*), **iconicity** (1–3; 1 *form and meaning of the sign are not connected*, 3 *form of the sign clearly refers to its meaning*) and **familiarity to pupils and students** who use Czech SL (1–5; 1 *unknown sign*, 5 *all of them would know the sign*). There was space for any additional comments and notes for every sign, but this part was optional.

Our consultants are 2 women and one man, all are deaf and use Czech SL from childhood. They are employees (teachers or assistants) at schools for children with hearing impairment in Bohemia and Moravia, all of them use Czech SL actively for over 40 years. Both their proficiency in Czech SL and their acquaintance with school children make them perfect for evaluation of our set of signs. They received a link for online video and an assessment table by e-mail and were asked to complete the table by themselves. This way they could decide on when they do it; they were allowed to split the task in several sessions if needed. After completing the table, they sent it back to us.

Analysis of their responses proved to be extremely valuable. It covered crossing out the signs that were unknown or had questionable meaning. Some signs were identified as regional variants (both in comments and in not being recognized by consultants from different region); we removed these from our list, too. In terms of estimated frequency of sign use, iconicity and familiarity to pupils and students, most of the signs scored high in all characteristics which means we have probably targeted mainly core lexicon. Based on our analysis we chose final set of 50 signs.

Having the 50 signs, we needed to determine their **order**. To avoid priming effect, signs were arranged in such a way that the neighbouring signs are as little related as possible (e.g., BREAD-DOCTOR-CAT-LEARN etc.). We present the set of chosen signs (in English glosses) in Table 1.

Table 1: *List of cue signs according to their word classes*

Nouns			Verbs	Adjectives
FATHER	BIKE	FOOTBALL	WRITE	YOUNG
MOTHER	CORKSCREW	BOWLING	SHOUT	OLD
DOCTOR	SCISSORS	COLOUR	LEARN	CLEAN
BOY	SHOES	MUSIC	SEE	DIRTY
WATER	SCARF	COURSE	ASK	RICH
BREAD	YEAR	LOVE	SAVE	SAD
CAT	DAY	CONDITION	WAIT	BEAUTIFUL
BUTTERFLY	HOLIDAY	CAKE	KNOW	NEW
TABLE	SCHOOL	PLANE	SEARCH	FAST
LAMP	SHOP	ELECTRICITY	START	WHITE

4 Future steps

Having the elicitation material ready, our next step is collecting the data from respondents at schools. Videos of cue signs were made into a PowerPoint presentation that will be easy to use. Signs can be played by pressing a space bar. Apart from working on the material itself, we ensured to have instructions for the task translated in Czech SL (for both versions of the task – in Czech SL and in Czech), same as was the case of a questionnaire for anamnestic data. Next, informed consent needed to be translated, too. To address our potential respondents, we made a short video about the research. It is in spoken Czech, interpreted to Czech SL. Attached to the video there is a transcription in written Czech. Our goal is to make it accessible to all who might be interested.

When we have the data, we will analyse it, again, with consultations of deaf adults where necessary. We want to learn more about the way signs are stored in mental lexicon of native speakers of Czech SL. Our research is first of its kind in using WA for studying mental lexicon in Czech SL. We believe that it will be beneficial to research of Czech SL, and it may inspire future researchers in the field of (sign language) linguistics.

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The art of listening

Telléus, Annika. *Naslouchat je umění: jak účinně a pozitivně komunikovat* | Praha: Portál, 2022. | ISBN 978-80-262-1869-2

Reviewed by Tereza Hrudová

"The art of listening" by Annika Telléus is a unique and valuable book that should not be missing in the library of anyone who deals with communication, whether professionally or personally. This book is an excellent resource for special educators, speech therapists, and professionals in verbal and non-verbal communication, i.e., wherever communication skills are essential.

The author's approach to the subject is innovative and fresh yet full of expertise and insight. She is a person who has deep experience in the field of communication and human resources. In the book, Annika Telléus introduces a range of tools and techniques for effective listening that help understand others better and oneself.

Each chapter is preceded by an introduction in which the author explains how she, as a manager in a retail chain, needed to listen to her customers and reveals important aspects of why it is generally essential to listen to each other. The book aims to guide you towards effective listening and setting positive boundaries in conversation. The book is divided into 15 chapters, accompanied by a final acknowledgment. The content of the book is wealthy. Clear examples from practice accompany each chapter and end with suggestions for reflection, allowing the reader to undertake a personal review and move their development forward.

The first chapter is an introductory outline of the listening model, which contains three main aspects that facilitate the whole process of communication and listening itself: listening to others, listening to yourself, and having someone who listens. The three interconnected points of listening create the idea of a triangle, which the author has modified and linked the design of this model to her former career in the fashion industry and transformed the pattern into a clothes hanger. In the following chapters, the concepts of each side of the clothes hanger are refined, and the influences of the example situations on listening to others and oneself are highlighted. To make the listening process complete on the reader's part, the author also highlights

the importance of having someone listening to us. The book also summarizes the obstacles that the reader may face during communication. Emphasis is also placed on maintaining integrity while conversing so that each participant in the touch leaves a positive feeling. To make listening functional, the author also provides specific examples in each chapter, supplemented by questions for reflection or tips on listening in given situations.

Conclusion

"Listening is an Art" is a very accessible and practical book that takes you through the art of effective listening step by step. It is a book that changes how we communicate and is written in an efficient and, most importantly, readable way. The author presents practical tips, excerpts from interviews, observations, and experiences from the author's life, analysis of them, as well as suggestions for self-reflection and self-awareness on how to approach and develop communication and oneself that can be considered positive and effective. After reading the book, every reader will realize the fundamental difference between listening and hearing. If we approach others with an open mind, we stand a better chance of understanding and inspiring each other.

Acknowledgements

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Therapy games for teens: 150 activities to improve self-esteem, communication, and coping skills

Gruzewski, Kevin. *150 terapeutických her pro dospívající: sebehodnota, komunikace a zvládání náročných situací* | Přeložila Eva Klimentová | Praha: Portál, 2023 | ISBN 978-80-262-2027-5

Reviewed by Magdalena Svozilová

"It takes courage to grow up and become who you really are."
E. E. Cummings

Adolescence is a very challenging, intense, and fragile period when a person struggles with early experiences and leaves a part of themselves to become an adult and a different person. During this period, individuals' experiences are modified, and many changes occur on multiple levels of life. Teenagers struggle with themes of self-worth, communication, and coping with challenging situations. It is the role of adults to help them along the way and try to guide them sensitively on the journey of growing up. These professionals would greatly appreciate a book that can become a helpful tool.

Kevin Gruzewski offers all adults entering into a teaching or therapeutic relationship with adolescents a book containing 150 therapeutic games that can help them learn about themselves, understand the world around them, communicate their needs, and much more. The author draws on his twenty years of experience as a recreational therapist to create a book that he would have appreciated in the early days of his professional work.

The book is very clearly structured, with 150 activities and games organized thematically into ten chapters: mindfulness, self-esteem, communication skills, stress management, anger management, anxiety, depression, bullying, trauma, and grief. There are 15 techniques associated with each chapter, which are divided into three levels. Level 1 introduces the topic, Level 2 offers a deeper understanding and coping techniques, and Level 3 focuses on building coping strategies. The author primarily relies on the cognitive-behavioural model, and the primary focus of each chapter is

the cognitive processing of the given issue. This is followed by experiential activities where participants are encouraged to share and interact with each other. Discussions are integral to all exercises, integrating and anchoring the lived experience within the technique. These discussions are a crucial component that should not be overlooked. Additionally, the author incorporates activities that utilize relaxation, thematic visualization, visual expression of feelings and emotions, role-playing, and more.

The book's strength lies in its simplicity and highly creative use of these techniques. Often, when someone working with adolescents is unsure of the best approach, this book offers multiple options. It is also structured practically by core themes, allowing it to be used in sections. Keywords can quickly orient the reader to specific topics. Indeed, the suggestions from the book can help educators process challenging topics cognitively and introduce the basic principles of phenomena such as trauma, bullying, depression, and anxiety through recreational therapy. It also provides practical and straightforward guidelines for dealing with anxiety and practising mindfulness. Each activity can be repeated, and one can appreciate the amplification of its impact over time. However, the book's simplicity and clarity also come with potential drawbacks. If used carelessly by novice professionals, some activities may only do no good and bring more struggle. Beyond the techniques, the relationship between the professional and the adolescent is crucial, even though implementation while continuing to educate themselves on specific topics and practical backgrounds underpin each activity. It may be challenging for someone who lacks such experience and theoretical knowledge to navigate the emotions and conflicts, both interpersonal and intrapersonal, that these techniques can provoke. They need to possess the basic skills and abilities to handle the situations that may arise.

I wholeheartedly recommend this book to all professionals working with adolescents, not limited to just those who work with adolescents. It should be a staple in the libraries of therapists, psychologists, teachers, and educators of adolescents. While the book may appear straightforward, and its use seems easy, I recommend that everyone approaches its application with humility and respect. It's essential to reflect on its implementation while continuing to educate themselves on specific topics, theoretically and practically.

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Curriculum construction and implementation of resource classroom

Shouhong Wei. *Curriculum construction and implementation of resource classroom* | Chongqing, TX: Chonqing University Press Inc, 3.2023. 306 pages | ISBN 978-7-5689-3728-3

Reviewed by Shiyuan Tang

1 Background introduction

After the concept of inclusion education was introduced into China in the 1980s, it has been promoted and developed in China, and combined with China's national conditions, a model and concept of integrated education with Chinese characteristics has been formed – Learning in Regular Classroom, LRC (随班就读). It refers to a way for children with some physical disabilities, mild intellectual disabilities, low vision and hard of hearing to be enrolled in regular school classes. As a unique form of inclusion education in China, "learning in regular classroom" are widely used in relevant laws and policies concerning special education in China, and a series of policies have been issued to guide the implementation of children with special needs learning in regular classroom, such as: The Special Education Promotion Plan (2014–2016) issued in 2014, and the Guiding Opinions on Strengthening the Work of Students with Special Needs Learning in Regular Classroom in Compulsory Education issued in 2020, etc..

As an important component of the inclusion education support system, the construction of resource classrooms has become one of the important contents of the work of "Learning in Regular Classroom". In 1997, Beijing established the first resource classroom in China, and then all over the country began to build resource classrooms. Chinese government departments have also issued a series of policies to guide and support the construction of resource classrooms. For example, in 2016, the General Office of the Ministry of Education of the People's Republic of China issued the Guidelines on the Construction of Special Education Resource Classrooms in Ordinary Schools. The guide elaborates on the overall requirements, functions, basic layout, site and environment, regional setting, equipment catalog, management

norms of resource classrooms, making the construction of resource classrooms more standardized and institutionalized.

During the 14th Five-Year Plan period, China will carry out the construction of a five-level resource support system, including national, provincial, municipal, district level resource centers and school-level resource classrooms. Among them, the school-level resource classrooms have the widest coverage and directly serve students with special educational needs. According to the requirements of the Guidelines for the Construction of Special Education Resource Classrooms in Ordinary Schools, resource classrooms should be equipped with necessary education, teaching, rehabilitation training facilities and resource teachers according to the types of disabilities and support needs of students, and make full use of resource classrooms to carry out professional services such as provision of individual learning guidance, psychological counseling, rehabilitation training, and other services for students with disabilities.

However, the above policies clearly explain the functional positioning and equipment configuration of resource classrooms. However, what kind of curriculums are provided for the special children in the class, how to make the course content more targeted and systematic, and then effectively promote the adaptation and development of the special students in the ordinary class, and promote the self-development of the special students, have become the majority of special education teachers, teachers, parents, and researchers of integrated education. Therefore, how to carry out the curriculum construction of resource classroom has become another important work of resource classroom construction. The team of this book starts from the functional positioning of resource classroom, focuses on special children to build resource classroom curriculum plan, and based on evidence-based theory, through nearly 10 years of research and practice, it has formed the behavior counseling curriculum, social emotional curriculum, attention curriculum, academic counseling curriculum and other resource classroom curriculum plan, and finally formed the book "Curriculum Construction and Implementation of Resource Classroom".

2 Introduction of the author and team

The author of this book is Dr. Wei Shouhong, master's supervisor. He is currently the director of the Department of Special Education and the Director of the Autism Research Center at Chongqing Normal University. He is also the founder and director of the Research Center for Inclusion Education at Chongqing Normal University. His research fields include autism, inclusion education, and education and rehabilitation for children with special needs. Professor Wei Shouhong has presided over 23 research projects, such as Research on Social Interaction Support Model for Disabled People in the Age of Social Media, Evaluation and Intervention Research on Social Skills of Children with Autism, Construction and Application Research

of Evaluation System for Students in the Compulsory Education Stage, Academic Evaluation and Application Research of Special Students under Inclusion Education, Research on Curriculum Adjustment of Integrated Education in Chongqing Normal Schools, etc. He has published more than 40 papers in Chinese Journal of Special Education, Studies in Early Childhood Education, International and Comparative Education, Chinese Journal of Rehabilitation Theory and Practice, including more than 20 CSSCI and CSCD papers. Three books have been published, and the main course "Introduction to Inclusion Education" has been rated as the first-class course in Chongqing. Under the auspices of Professor Wei Shouhong, the book was co-written by 10 teachers from 9 special education schools or ordinary primary schools in Beijing, Guangdong, Zhejiang, Chongqing, Sichuan, Hunan and other provinces and cities, and 1 special education teaching researcher from the Teacher Education Institute. All of these teachers are excellent special education teachers with rich teaching experience.

3 Composition and characteristics of this book

This book mainly consists of six parts. The first part is the overall introduction of the resource classroom curriculum construction plan, including the origin of the resource classroom program, an overview of research related to resource classroom and resource classroom curriculum construction, ideas and methods for resource classroom curriculum construction, etc. The second part introduces the construction and implementation of behavioral counseling curriculum in resource classrooms, including the overview of behavioral counseling curriculum in resource classrooms, the evaluation of behavioral counseling curriculum in resource classrooms, and the implementation of behavioral counseling curriculum in resource classrooms. The third part introduces the construction and implementation of social skills training curriculum in resource classrooms, including an overview of social skills training curriculum in resource classrooms, evaluation of social skills training curriculum in resource classrooms, and implementation of social skills training curriculum in resource classrooms. The fourth part introduces the construction and implementation of basic learning ability curriculum in resource classrooms, including the overview of basic learning ability courses in resource classrooms, the evaluation of basic learning ability curriculum in resource classrooms, and the implementation of basic learning ability curriculum in resource classrooms. The fifth part introduces the construction and implementation of the basic rehabilitation curriculum in resource classrooms, including the overview of the basic rehabilitation course in resource classrooms and the implementation of the psychological curriculum in resource classrooms. The sixth part introduces the construction and implementation of the resource classroom labor education curriculum, including the overview of the resource classroom labor educa-

tion curriculum, the evaluation of the resource classroom labor education curriculum and the implementation of the resource classroom labor education curriculum.

In my opinion, the characteristics of this book can be mainly reflected in four aspects: (1) The author systematically expounds the framework model of curriculum construction of resource classrooms, and proposes that the basis of curriculum construction of resource classrooms should include three parts: adaptation to general education requirements (subject learning, school adaptation), self-development requirements (rehabilitation in language, self-care and other fields), and related document requirements (psychological counseling, rehabilitation, subject remediation, etc.). The curriculum construction content should include behavior counseling curriculum, social skills curriculum, basic learning ability building curriculum, basic rehabilitation curriculum and labor education curriculum; (2) In the book, the author quotes and compiled a large number of practical assessment tools, such as self-compiled "Emotional Behavior Problem Checklist for Students with Special Needs Learning in Regular Classroom", "Routine Checklist for Students with Special Needs Learning in Regular Classroom", "Social Skills Assessment Scale for Autistic Children", "Primary School Students Writing Error Type Questionnaire" and so on. For example, the Checklist for Emotional Behavior Problems of Students with Special Needs Learning in Regular Classroom is the author's description of the performance of problem behaviors of Learning in Regular Classroom in school based on 125 teachers. After grading and coding based on the grounded theory, the test draft is formed by combining the relevant theories of problem behaviors and Achenbach's Child behavior Scale, and then revised through repeated trials. Finally compiled; (3) The author presents complete teaching cases when explaining each curriculums. The cases completely present the implementation process of curriculum evaluation, plan formulation, teaching design and teaching strategy, teaching effectiveness evaluation, etc. These cases have a direct reference and guidance for resource teachers to carry out their work; (4) This book makes reference to a large number of relevant studies, and tries to make detailed remarks on all the academic views cited, which is conducive to readers' in-depth literature tracking and reading.

4 Reasons for recommendation

First of all, this book is the first book on resource classroom curriculum in China. Through reading this book, you can have a comprehensive understanding of the origin, development process and construction status of resource classroom in China, especially through the part of "Resource Classroom and Resource classroom curriculum Construction related research Overview". You can have a comprehensive understanding of the overall situation of how to carry out inclusion education in China.

Secondly, through the construction and implementation process of each curriculum type, we can understand the implementation process, content and methods of some frontline teachers in China who use resource classrooms to carry out curriculum in the fields of work behavior, social interaction and labor skills. You can see many operational cases in the book.

Thirdly, you can learn in this book how to support the learning ability (attention, behavior norms, social skills, reading, writing, etc.) faced by special children in the process of studying in the class through resource classroom courses under the curriculum system of Chinese general primary education, such as the application of attention training strategies in Chinese reading and writing.

Fourthly, this book can be used to guide the practical work of resource classroom, assist resource teachers to grow up as soon as possible, and is also suitable as a textbook or reference book for the learning resource classroom of normal school students.

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Information for authors

Basic information about the JEP

Journal of Exceptional People (*JEP*) should be based on 2 times a year publishing period in both electronic and traditional – printed form. To guarantee professional standards of the Journal we have applied to the front of special needs teachers, psychologists, therapists and other professionals in the U.S., Finland, Spain, Slovakia, Hungary, China, Russia, Poland and other countries. Above mentioned scientific journal aspires to be registered into the international database of impacted periodicals (Journal Citation Reports).

Journal of Exceptional People (*JEP*) will provide research studies and articles on special education of exceptional people. This area covers individuals with disabilities and, on the other hand, gifted persons. The *Journal* will focus on publishing studies and articles in the field of education, social science (sociology) and psychology, special thematic issues and critical commentaries. The publishing language of the *Journal of Exceptional People* is to be English exclusively.

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It is highly recommended to spend the necessary time correcting the paper – every mistake will be multiplied. Posted papers unsuitable for printing will not be published! Ensure appropriate division and balance between the various parts of the contribution and aesthetic placement of pictures and diagrams as well as their quality. Terminological correctness and formality are required.

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