

EDUCATION AND NEW DEVELOPMENTS

2024
Volume 1

Edited by
Mafalda Carmo



Education and New Developments

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Mafalda Carmo

Edited by Mafalda Carmo, World Institute for Advanced Research and Science (WIARS), Portugal

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FOREWORD

This book contains the full text of papers and posters presented at the International Conference on Education and New Developments (END 2024), organized by the World Institute for Advanced Research and Science (WIARS).

Education is a fundamental right that accompanies us from the very beginning of our lives. It encompasses every experience we encounter, influencing and shaping our thoughts, emotions, and actions. Whether we engage in formal education within classrooms or learn from the world around us, the process of acquiring knowledge plays a vital role in our personal growth and development. It equips us with the tools to navigate the complexities of life, broadens our perspectives, and empowers us to make informed decisions. This International Conference seeks to provide some answers and explore the processes, actions, challenges and outcomes of learning, teaching and human development. Our goal is to offer a worldwide connection between teachers, students, researchers and lecturers, from a wide range of academic fields, interested in exploring and giving their contribution in educational issues.

We have brought together a diverse group of individuals with various backgrounds to contribute their unique perspectives and knowledge on Education. By including people from different nationalities and cultures, we aim to create a rich plethora of experiences that can broaden our understanding of human nature and behavior. The exchange of ideas and experiences among our participants helps to cultivate personal and academic development, providing a platform for the exploration of new insights and discoveries.

END 2024 received 729 submissions, from more than 50 different countries, reviewed by a double-blind process. Submissions were prepared to take form of Oral Presentations, Posters, Virtual Presentations and Workshops. The conference accepted for presentation 284 submissions (39% acceptance rate).

The conference also includes one Keynote presentation by Dr. Ipek Kocoglu, Kean University, USA. We would like to express our gratitude to our invitee.

This conference addressed different categories inside the Education area and papers are expected to fit broadly into one of the named themes and sub-themes. To develop the conference program, we have chosen four main broad-ranging categories, which also covers different interest areas:

- In **TEACHERS AND STUDENTS**: Teachers and Staff training and education; Educational quality and standards; *Curriculum* and Pedagogy; Vocational education and Counselling; Ubiquitous and lifelong learning; Training programs and professional guidance; Teaching and learning relationship; Student affairs (learning, experiences and diversity; Extra-curricular activities; Assessment and measurements in Education.
- In **PROJECTS AND TRENDS**: Pedagogic innovations; Challenges and transformations in Education; Technology in teaching and learning; Distance Education and eLearning; Global and sustainable developments for Education; New learning and teaching models; Multicultural and (inter)cultural communications; Inclusive and Special Education; Rural and indigenous Education; Educational projects.
- In **TEACHING AND LEARNING**: Critical, Thinking; Educational foundations; Research and development methodologies; Early childhood and Primary Education; Secondary Education; Higher Education; Science and technology Education; Literacy, languages and Linguistics (TESL/TEFL); Health Education; Religious Education; Sports Education.
- In **ORGANIZATIONAL ISSUES**: Educational policy and leadership; Human Resources development; Educational environment; Business, Administration, and Management in Education; Economics in Education; Institutional accreditations and rankings; International Education and Exchange programs; Equity, social justice and social change; Ethics and values; Organizational learning and change, Corporate Education.

The contributions were published across two volumes, and this is the Volume 1 of the book titled *Education and New Developments 2024*, that showcases the outcomes of dedicated research and developments undertaken by authors who are driven by their passion to enhance research methods that directly relate to teaching, learning, and the practical applications of education in the present day. Within its pages, you will find a diverse array of contributors and presenters who expand our perspectives by delving into various educational matters.

This first volume focuses on the main areas of TEACHERS AND STUDENTS and TEACHING AND LEARNING, being the contributions of the other two areas published in Volume 2.

We would like to express thanks to all the authors and participants, the members of the academic scientific committee, and of course, to our organizing and administration team for making and putting this conference together.

Hoping to continue the collaboration in the future.

Respectfully,

Mafalda Carmo
World Institute for Advanced Research and Science (WIARS), Portugal
Conference and Program Chair

Porto, Portugal, 15 - 17 June, 2024

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THE NATURE OF LEARNING TASKS FROM PERSPECTIVE OF CHILDREN FROM MARGINALISED ROMA COMMUNITIES

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Abstract

The Slovak Republic is a country of permanent or temporary residence for many nations and ethnic groups. The dominant language in schools is Slovak and although members of national minorities have the legal right to be educated in their mother tongue, this is not the case. The most controversial group is children from marginalised Roma communities, whose mother tongue is different from that of the majority society. The different living conditions that characterise their environment and the high degree of segregation from the majority affect their cultural experience. When entering institutionalised education, they face failure and misunderstanding. The complex language of school can affect their adaptation to school, as well as their success. Statistics show that these children often repeat the first year of school. Based on these facts, we decided to investigate the nature of language, which, according to sociocultural theory, is a fundamental determinant of a pupil's cognitive development. The object of analysis is the textbooks for the first two years of primary education. We aim to identify the most frequent words in the written lessons and to assess their potential comprehensibility from the perspective of children living in marginalised Roma communities. The results indicate the validity of the basic thesis of the French sociologist Pierre Bourdieu's theory of cultural reproduction. It seems that the dependence of school performance on the socioeconomic situation of the pupil's family, which has been repeatedly demonstrated in PISA measurements, may be related to the inability of the school to adapt the language to the needs of children whose linguistic code is underdeveloped. The research findings provide a basis for the development of an effective language programme for the acquisition of Slovak as a second language and call for the development of a comprehensive national strategy for the language support of children with a different mother tongue.

Keywords: *Different first language, primary education, cultural reproduction theory, inclusive education, learning tasks.*

1. Introduction

Slovakia is one of the smaller countries in terms of size and population. Less than 5.5 million inhabitants live on approximately 49 thousand km². Historical border shifts as well as intensive migration have made Slovakia a multicultural country, which has become a place of permanent or temporary residence for many nations and ethnic groups. According to the latest Slovak Population and Housing Census, the population is composed of at least 29 different nationalities, and at least 26 language groups have been identified in terms of mother tongue use. The dominant language of the school is Slovak (ŠÚ, SR, 2021). In the school year 2023/24, 93 % of primary school students were educated in the Slovak language (CVTI, 2024). Children of Hungarian, German, Ukrainian, and Ruthenian nationalities have the opportunity to learn in their mother tongue. The greatest controversy is caused by the unresolved issue of education of Roma children who do not have the opportunity to learn in their native Romani language. However, Roma is the preferred language in almost 50% of Roma communities. Only 35% speak Slovak at home (Ravász, Kovács, & Markovič, 2020). The educational paths of Roma children are in many ways locked and, in many cases, very short.

1.1. Equality of educational opportunities from the perspective of Roma children

According to qualified estimates, 417,000 Roma live in Slovakia, which represents 7.6% of the total population. Roma is not a homogeneous group, even in terms of their social situation. The fact is that half of them experience some type of spatial segregation - 14% live in isolation outside the village, in so-called settlements. Another 36% live in gated communities on the periphery of villages (Ravász, Kovács, & Markovič, 2020). The issue of education of Roma children from socially excluded backgrounds is very

complex. It cannot be satisfactorily analysed within the scope of this paper. However, for a deeper understanding of this study, it is necessary to point out several facts:

1. The educational level of the Roma population is generally low. The highest incidence of people with incomplete education or only primary education is in those regions of Slovakia where the Roma population lives (Statistical Office of the Slovak Republic, 2024).
2. Generations of Roma children from marginalised communities (hereafter MRC) have not been adequately included in preschool education programmes. While the overall enrolment rate for children aged 3-5 years was 75% in the 2018/19 school year, it was only 32% in the MRC setting (Hellebrandt et al, 2020). Several barriers contribute to the low attendance of these children (Vančíková, 2019a), which have not been fully eliminated even after the adoption of the law on compulsory pre-primary education for all 5-year-olds in 2021.
3. A large group of Roma children from the MRC do not meet the school readiness criteria at the schooling threshold, as a result, they repeat a grade in the first years of schooling (Vančíková, 2019b).
4. School failure will accompany them for years to come. A significant group of these pupils do not continue their studies in secondary school. The proportion of pupils who complete compulsory schooling and do not continue their education is significantly higher in socially disadvantaged groups than in the rest of the population (Hellebrandt et al, 2020).
5. Higher education is more of a rarity in these communities. According to older data, only 0.14% of all Roma living in rural areas have achieved higher than secondary education (Mušinka, & Matlovičová, 2015).

1.2. Education of Roma children from the perspective of respecting their linguistic rights

Although the Education Act No.245/2008 Coll. (§12) states that members of national groups have the right to education and education in their language, a large group of children in Slovakia are educated in a language other than their mother tongue or are in the situation of acquiring another language and learning in it at the same time. In terms of the application of linguistic human rights, subdimensional, so-called 'sink or swim' programmes are applied to children of several minorities in Slovakia (cf. Skutnabb-Kangas, 2000). Pupils entering the school from a foreign language background are forced to acquire the language of the school, which represents the language of the majority society, literary Slovak. Children from the MRC mostly encounter this form of language only while watching television or playing games at a school run by older children (Kubánik, 2015). For them, entering school is not only an encounter with a new linguistic reality but also with a new approach to language learning. In the home environment, language acquisition occurred in natural communicative situations that they experienced or were part of. At pre-school age, they acquired Romani, the local dialect of Slovak and other languages spoken in their primary environment. Thus, they became bilingual or plurilingual naturally, without learning vocabulary, correcting, etc. The school approaches language learning in a radically different way. The basis is targeted language education through learning individual concepts and grammatical rules, which contradict natural and unguided acquisition (Hajská, 2015). Thus, these learners have to acquire not only a new language but also a new form of learning. The school expects every pupil entering its grounds to know the rules of behaviour and communication, or to understand the language they are being taught. It does not respect the diversity that is natural as each pupil comes from a different background. It demands uniformity and thus creates barriers that pupils from poor backgrounds find difficult to overcome.

1.3. Linguistic competence capital of children from excluded localities

The main thesis of the Theory of Cultural Reproduction by the French sociologist Pierre Bourdieu is that the school, as a social institution, should contribute to the levelling of social inequalities. However, it does just the opposite, widening the gap and applying the Matthew effect¹. It privileges those who have acquired skills, tastes, or ways of spending time - the cultural capital of the middle and upper social classes. It presents the values of these parts of society as the most perfect, universal ones and demands them from everyone who wants to participate in its education (Prokop, 2005). Acquisition of the cultural capital of the majority is impossible for children from segregated Roma settlements because their contact with the majority happens rarely, if at all. Thus, they continue to live in a space where they have been revolving in the same circle of poverty for several generations, with low educational levels and ingrained patterns of behaviour that are undesirable and judged as insufficient in the school environment. Linguistic capital is an important part of cultural capital. In both spoken and written form, the school speaks to all pupils in the same language, which may not be comprehensible to them. The British sociologist Basil Bernstein in his

¹ Matthew 25:29: "For whoever has will be given more, and they will have an abundance. Whoever does not have, even what they have will be taken from them.."

sociolinguistic theory demonstrated that the social conditions of life create at least two forms of language use: a limited language code typical of lower social classes and a developed language code characteristic of middle and upper social classes (Prokop, 2005). The language of the school speaks to children with a developed linguistic code. It is not mentioned that children bring with them different cultural and linguistic capital from their home environment. The latter also influences parents' contact with teachers. Parents in the lower social classes do not feel competent enough to communicate with teachers. They are uncomfortable communicating with teachers and believe that school is separate from home. In their perception, education is the responsibility of teachers, so they avoid contact with the school (Dumais, 2006). Their limited cultural experience and language code affect their competence capital, which reflects their competence in social communication and orientation to socially relevant topics (Vančíková, 2011). Therefore, schools should take into account the cultural and linguistic background of each child and adjust their approach to education accordingly.

1.4. Research problem and objective of the study

The previous section highlights that the education system in the Slovak Republic does not cater for all children. Children from poverty-stricken foreign language backgrounds face issues such as poor educational performance and early school leaving, which raises concerns about the conditions in schools. Therefore, we have decided to investigate the language teaching tasks in textbooks for the first and second years of primary education. Our objective is to identify the most used words and evaluate their potential clarity for children living in MRC.

2. Methods

The research set consisted of textbooks for the first and second years of primary education², which have the so-called clause of the Ministry of Education. Therefore, they are among the state-supported teaching resources used by many primary schools. The subject of the analysis was 6 textbooks and workbooks for the 1st grade, in which 1735 statements of the nature of the teaching instructions were recorded. For Grade 2, we analysed 7 textbooks and workbooks in which we identified 4231 statements. The initial transcript created a corpus with a total of 5966 teaching assignments.

The analysis was carried out in cooperation with the Ľudovít Štúr Institute of Linguistics of the Slovak Academy of Sciences using the tools MorphoDiTa, NoSketch Engine, Charcount and tools Sort, Grep, Uniq of the UNIX system. The analysis consisted of several steps:

1. Morphological analysis.
Words have been sorted into 4 categories – nouns, verbs, adjectives, and adverbs.
2. Frequency analysis.
In each category, frequency lists have been created based on which we can judge the frequency of occurrence of individual words in the learning resources.
3. Comparative analysis 1.
Identification of vocabulary specifics when comparing grades (comparison of 1st- and 2nd-grade textbooks) and specifics when comparing vocabulary within subjects (Mathematics, Slovak language, Natural Science). The result of the analysis is the so-called unique vocabulary, which is found only in one set (for example, only in mathematics textbooks, etc.)
4. Comparative analysis 2.
Identification of common vocabulary for monitored categories (e.g. what words can be found in all first-grade textbooks, etc.)

The analysis of the vocabulary of textbooks was the starting point for the next step, identifying the so-called challenging words. In the context of our research goal, we understand as a challenging word any word that potentially falls outside the scope of the cultural or competence capital of a child living in conditions of social exclusion. The starting set for identifying such words was a set of the most frequent words in four categories: 1) verbs, 2) nouns, 3) adjectives, and 4) adverbs. The condition for the inclusion of the word in the sample set was its occurrence in textbooks of all subjects (so-called common vocabulary).

² Compulsory school education in Slovakia begins at the age of 6. Children who do not meet school readiness criteria may have their school attendance postponed and start school a year later. Thus, in the classes of the 1st and 2nd grades of primary education we find children aged 6-8 years.

3. Results

As can be seen in Table 1, we identified several challenging words in each word type. There were 13 words in the verbs category, 14 words in the nouns category, 6 words in the adjectives category, and 3 words in the adverbs group. The words were identified based on a study of the social and linguistic background of children with MRC living in the Slovak Republic. The words in the table are also given in their original form because the English translation does not capture their essence in the Slovak language.

Table 1. Frequent common vocabulary in mathematics, Slovak language, and primary school textbooks with identified challenging words.

Part of Speech	Vocabulary
Verbs	byť (be), doplniť (fill in), mať (have), vyfarbiť (colour) , zapísať (write down) , pozorovať (observe), zistiť (find out) , vyznačiť (mark) , nakresliť (draw) , vytvoriť (create), nájsť (find), vymyslieť (invent), dokresliť (complete the drawing) , pomôcť (help), napísať (write to) , môcť (able), prečítať (read) , zdôvodniť (rationale) , povedať (say), pokúsiť (try) , porozprávať (talk), pomenovať (name) , dopísať (complete) , vypísať (write out) , urobiť (to do)
Nouns	číslo (number), počet (count) , príklad (problem) , úloha (task) , bod (point), výsledok (result) , pastelka (crayon) , vzor (pattern), tabuľka (chart) , znak (sign), kocka (cube) , farba (color), dvojica (couple), rad (row) , veta (sentence), spolužiak (classmate), rastlina (plant) , živočích (animal) , informácia (information) , človek (human), plôška (spot) , voda (water), slovo (word), obrázok (picture), písmeno (letter) , príbeh (story), názov (title) , časť (part), meno (name), odpoveď (answer), otázka (question)
Adjectives	veľký (big), rovnaký (same), správny (correct), červený (red), modrý (blue), zelený (green), slovný (verbal) , ďalší (next), ľubovoľný (random) , žltý (yellow), rôzny (various) , pravdivý (true), prázdny (empty), jednotlivý (single) , spoločný (common), nový (new), starý (old), potrebný (necessary), podobný (similar) , vhodný (suitable)
Adverbs	spolu (together), dlho (long time), doma (at home), ešte (yet), najskôr (first), podobne (similarly) , postupne (gradually) , potom (after), pozorne (carefully) , rovnako (same), spoločne (in common), správne (correctly), teraz (now), treba (be necessary), už (already)

Note: Difficult words are highlighted with a bolt.

4. Discussion

Based on the results of the content analysis of textbooks of the first and second year of school education, we can establish the assumption that there are teaching instructions with the so-called difficult words, which pose a problem for Roma children who use Romani in the home environment and at the same time live in conditions of poverty and social exclusion. This assumption will be verified in the next phase of the research through interviews with them. We aim to find out how they understand the difficult words and to identify any misconceptions in their grasp. The results of the research are intended to be the impetus for setting up support for children whose language rights are violated and against whom subdirective, so-called "sink or swim" programmes are applied. We believe that improving the school readiness of these children, as well as reducing the risk of their school failure, depends on the existence of quality programmes for the acquisition or improvement of Slovak. At the same time, teachers must be competent to work with this group of children, which inevitably involves understanding their life situation and recognising the competence capital with which they enter school.

5. Conclusion

It turns out that even though we live in the 21st century, Bourdieu's theory of cultural reproduction and his critique of the school are still valid. Despite deepening social differences, the school continues to use a language that is more likely to be understood by children whose cultural capital is compatible with that of the school. In a country with a large group of socially disadvantaged children, it is, therefore, necessary to present research arguments that can not only initiate dialogue on the subject but also develop comprehensive methodological support for teachers who work with this group of children.

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References

- CVTI SR (2024). *Štatistická ročenka 2023/2024 [Statistical Yearbook 2023/2024]* (In Slovak). Retrieved from https://www.cvtisr.sk/cvti-sr-vedecka-kniznica/informacie-o-skolstve/statistiky/statisticka-rocenka-publikacia/statisticka-rocenka-zakladne-skoly.html?page_id=9601
- Dumais, S. (2006). Early childhood cultural capital, parental habitus, and teachers' perceptions. *Poetics*, 34(2), 83-107. <https://doi.org/10.1016/j.poetic.2005.09.003>
- Ravász, A., Kovács, E., & Markovič, F. (2020). *Atlas rómskych komunit 2019 [The Atlas of Roma Communities 2019]* (In Slovak). Bratislava: VEDA SAV.
- Garabík, R., & Mitana, D. (2023). Analysing Accuracy of Slovak Language, Lemmatization and MSD Tagging. *Slovenská reč*, 88(2), 129-140.
- Garabík, R. Charcount. <https://github.com/garabik/charcount>
- Hajská, M. (2015). Gažikanes vaj romanes? Jazykové postoje olašských Romů jedné východoslovenské komunity ke třem místně užívaným jazykům [Gažikanes vaj romanes? The Language Attitudes of Vlax Roma from the Eastern Slovak Community towards Three Locally Used Language] (In Czech). In T. Podolinská, & T. Hruštič (Eds.), *Čierno-biele svety. Rómovia v majoritnej spoločnosti na Slovensku*. (pp. 346-373). Bratislava, VEDA: Ústav etnológie Slovenskej akadémie vied.
- Hellebrandt et al. (2020) *Revízia výdavkov na skupiny ohrozené chudobou alebo sociálnym vylúčením: Záverečná správa*. [Review of spending on groups at risk of poverty or social exclusion: Final report] (In Slovak). Bratislava: Ministerstvo financií SR. Retrieved from <https://www.minedu.sk/data/att/28f/15944.3bab36.pdf>
- Kilgarrieff, A., Baisa, V., Busta, J., Jakubíček, M., Kovář, V., Michelfeit, J., Rýchly, P., & Suchomel, V. (2014). The Sketch Engine: ten years on. *Lexicography*, 1(1), 7-36. <https://doi.org/10.1007/s40607-014-0009-9>
- Kubánik, P. (2015). „Hra na knížky“. Poznámky k akvizici slovenštiny v Gavu [“Playing the books”. Notes on the acquisition of Slovak in Gav] (In Czech). In T. Podolinská, & T. Hruštič (Eds.), *Čierno-biele svety. Rómovia v majoritnej spoločnosti na Slovensku*. (pp. 374-397). Bratislava, VEDA: Ústav etnológie Slovenskej akadémie vied.
- Mušinka, A., & Matlovičová, K. (2015). Atlas rómskych komunit na Slovensku 2013 ako pramenná databáza pre analýzu situácie Rómov na Slovensku a jeho potenciál pre ďalšie výskumy a analýzy [The Atlas of Roma Communities in Slovakia 2013 as a Variable Database for Analysing the Situation of Roma in Slovakia and Its Potential for Further Research and Analyses] (In Slovak). In T. Podolinská, & T. Hruštič (Eds.), *Čierno-biele svety. Rómovia v majoritnej spoločnosti na Slovensku*. (pp. 224-246). Bratislava, VEDA: Ústav etnológie Slovenskej akadémie vied.
- Prokop, J. (2005). *Škola a spoločnosť v kritických teoriách druhej poloviny 20. storočia* [School and Society in Critical Theories. Of the Second Half of the 20th Century] (In Czech). Praha, Karolinum: Univerzita Karlova v Prahe.
- Štatistický úrad SR (2024). *DataCube – Demografia a sociálne štatistiky [Demography and Social Statistics]* (In Slovak). Retrieved from: <http://datacube.statistics.sk/>
- Vančíková, K. (2011). *Výchova a spoločnosť [Education and Society]* (In Slovak). Pedagogická fakulta UMB v Banskej Bystrici.
- Vančíková, K. (2019a). Deti z vylúčených rómskych lokalít v MŠ [Children from Excluded Roma Localities in Kindergartens] (In Slovak). In R. Hall, P. Drál, P. Fridrichová, M. Hapalová, S. Lukáč, J. Miškolci, & K. Vančíková (Eds.), *Analýza zistení o stave školstva na Slovensku: To dá rozum*. Bratislava: MESA10, 2019. Retrieved from <https://analyza.todarozum.sk/docs/19081119150001whn1/>
- Vančíková, K. (2019b). Sklamania a zlyhania na začiatku vzdelávacej dráhy [Disappointments and Failures at the Beginning of the Educational Career] (In Slovak). In R. Hall, P. Drál, P. Fridrichová, M. Hapalová, S. Lukáč, J. Miškolci, & K. Vančíková (Eds.), *Analýza zistení o stave školstva na Slovensku: To dá rozum*, Bratislava: MESA10, 2019. Retrieved from <https://analyza.todarozum.sk/docs/348332001wm1a/>