PRZEGLĄD PSYCHOLOGICZNY – THE REVIEW OF PSYCHOLOGY
2024, TOM 67, NR 3, 105–114
DOI: 10.31648/przegldpsychologiczny.10494

Language Skills and Thinking in Children Aged 6–10 Years. Research Report

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Abstract

Aim: Language and thinking play a key role in human interactions. Their quality is deteriorating as conversations are replaced by technology (Sage, 2020). This, in turn, raises problems in communication and relationship building, reduces work efficiency and contributes to a decline in personal and professional standards. The aim of the research presented here was to determine how thinking and expressive language skills are formed in school-aged children in the East Midlands region of England and to see if these abilities improved after a year of study.

Method: 102 children aged 6–10 took part in the study, which involved four tasks: two pictorial and two involving story-telling. Structured in this way, the study was designed to stimulate thinking and linguistic expression and to elicit narratives, reflecting the generation of ideas in response to visual and auditory stimuli. The study was conducted in two stages: a group of children was first examined in 2022, and the study was repeated in 2023. The t statistic for dependent samples was used to assess the significance of differences.

Results: Significant differences were found, indicating improvements in narrative skills with the introduction of story-telling activities. In contrast, language and thinking skills remained stable but low.

Conclusions: Retesting revealed a lack of significant differences between means of thinking ability and linguistic expressions. After a year of working with students, the level of

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their imagination and thinking flexibility has not improved. These abilities are crucial to the development of creative thinking and imagination and, consequently, to the overall development and success of the individual. On the other hand, there was an improvement in narrative competence, which is an important part of developing social interaction.

Keywords: thinking, imagination, language and social competence, progressive change

Older people have complained about the younger generation probably for ever, and these complaints have a very long history dating to ancient Greek. Thus, already in the fifth century BC, Socrates lamented over the youth of Athens, stating: "(…) they have bad manners and contempt for authority; they show disrespect for their elders and love to talk instead of exercising". (quoted by Good Reads). These words could also describe today's youth, and complaints expressed about them by the elders. On the other hand, we can find many examples, including scientific evidence, indicating that children or young people whose developmental capabilities and competence were doubted have turned out to be contributing individuals to communities and even generations. It is worth referring to Helen Keller, who lived many years in her own closed world after losing her sight and hearing. The determination and faith of Anne Sullivan – the girl's longtime teacher and caregiver – allowed her not only to get out of her closure but to appeal to the minds and hearts of many people after reaching adulthood. Helen Keller devoted her adult life to helping the poor and excluded, worked on behalf of those in need, fought for women's equality, and improved working conditions for workers. Also, thanks to her acquired ability to speak, she was able to give lectures, making the world aware of the importance of education, especially for those who function below the average level of the so-called majority.

These two examples provide a reference point for analyzing many similar problems that are real and still present. Glendinning (2022) points out the lack of self-reliance of students using paid help to write academic papers. Osmond (2023), founder of Various Eateries, reflects that today's work starters are incapable of using initiative, connecting and communicating effectively with other people or being able to work independently. At the same time, those coming from universities are unable to listen to views different from their own, demonstrating more arrogance and difficulty adapting to the realities of working life, which can lead to an increase in mental disturbances amongst this group.

Research on the present generation of young adults also found them progressive, accepting more diverse sexuality but lacking understanding of situations and tolerance of people.

One of the key problems that many contemporary researchers point to is the insufficient development of language and communication abilities. Young people are often unable to discuss or constructively disagree, making working together in diverse teams challenging. Hence, they are usually labelled as Gen-Z or Zoomers (Lukianoff & Haidt, 2018; Mahon, 2022). It should be emphasized here that the kind of adult we become depends largely on the educational experiences of childhood and adolescence.

British Education – Current State

The UK inclusive education program takes little account of students' individual interests and abilities. Students need to relate abstract ideas to their life experiences and activities. However, the curriculum tends to focus on learning facts, mainly in English, math and science. This focus on details and facts leaves little room for learning practical abilities and applying knowledge to everyday life. The teaching process focuses on children's implementation of programs centred on tasks that require memorisation and reproduction. In contrast, less attention is paid to developing personal competencies, practical abilities, especially communication (Kaczmarek et al., 2017; Williams, 2015; World Bank Group, 2019), and thinking and problem-solving (Sternberg, 1985). Low levels of communication and language lead to many negative consequences. Words that have no bad intentions are sometimes perceived as personal attacks. For example, the term "multiculturalism" can be understood in different ways – for some, it means the harmonious coexistence of communities, for others, it indicates a lack of integration between groups.

In contrast, research findings on reasoning related to problem-solving and decision-making (Gazzaniga et al., 2019; Kahneman, 2011) show that the ways in which people think in everyday situations (so-called practical intelligence, Sternberg, 2003) are not sufficiently analysed. Pavese (2021) points out the need to distinguish between possessed knowledge ("I know that") and procedural competence ("I know how"). In other words, we can be smart by knowing a lot of scientific facts but not being able to use them well (we are not "smart"). As a result, many students fail to achieve higher levels of thinking, language processing and communicative competence. Meanwhile, these proficiencies are increasingly used in modern smart technology, whose primary task is to replace the interlocutor and conduct interactive dialogue. Until now, this role and responsibility has been assigned to parents in the process of raising children. A World Bank review (2019) suggests that 60% of people do not reach the basic standards assumed in the educational system, while 30% of adults do not reach the formal stage in operational thinking. The results of tests examining thinking and its expression, based on standards from three decades ago, show a decline in competencies: only 3 out of 120 respondents achieved the average scores of that time.

A recent study by Kaczmarek and Chong Espino (2024) indicates that education has a greater impact on the ability to think creatively than culture. The strong correlation between linguistic ability and thinking is emphasised (Kaczmarek & Markiewicz, 2003; Parsons & Branagan, 2016; Sage, 1986, 2020), as well as the role of an effective teaching system in shaping these competencies. Meanwhile, the development of practical, social and communicative competencies is relegated to the sidelines in British education, giving way to the study of facts. Benda (2021), a French philosopher, referred to this phenomenon as *La trahison des clercs* – the betrayal of intellectual standards in favor of ideology.

In view of the phenomena described, the present research aimed to determine whether, and if so, how problem-solving and communicative competence

will change after a year of education, using curricula that allow stimulation of practical abilities.

Method

A random sample of students from four schools was included in the study, with an equal number of boys and girls, in accordance with current UK guidelines on standards and ethics for conducting research. The schools where the research was carried out are located in two small towns, populated mainly by representatives of the working class with specialised vocational and secondary education. The proportion of immigrant students was about 15% (15 students). Immigrants are a large group of the population living in the cities near where the study was carried out, and many of the schools there lack indigenous British students. However, the study group reflects the nature of the population outside the UK's major cities, where the number of immigrants in the counties, according to the Office for National Statistics (ONS), is steadily increasing each year.

Course of the Study

The examinations were individual and took place outside classrooms. Students were informed of what tasks they would be performing and of their rights, including the opportunity to ask questions. The study used four tasks to assess thinking ability and linguistic competence, understood as linguistic expression:

- Picture Test 1: Mug. The task required the child to look at a drawing of a mug and express ideas about it.
- Picture test 2: Apple tree. The task was to look at a fruit tree drawing and discuss how to get fruit from it.
- Narrative 1: Retell a story consisting of nine propositions in a simple language structure.
- Narrative 2: Retell nine story propositions in normal complex language.

Picture tests were used to assess thinking ability. These tasks were performed under the rigor of a time limit of 2 minutes. The number of ideas generated was expected to correspond to the participant's age (e.g., 5 years = 5 ideas).

The narrative tasks were structured to activate both thinking and linguistic competence. Children were presented with stories by asking them to repeat them. It was assumed that thinking about meaning is manifested not in numbers or graphics but in the ability to tell a story (Sage, 2020). The assessment of the child's performance was based on the ability to produce nine correct propositions, which goes beyond short-term memory and enables the activation of thinking and subsequent levels of linguistic competence. Correct propositions, order, syntax, and grammar were considered to reflect the ability to maintain the logic of events and made it possible to evaluate the processing and expression of narrative information (Sage, 2020).

Participants

Due to the migration of students to other schools (some students from the original 2022 cohort changed schools or were unable to participate in the re-assessment) or their absence from testing sessions, the final analysis included data collected from 102 students aged 5-10 (ten students in each age category, 50% were girls). The baseline survey was implemented in 2022 and repeated in 2023, maintaining an interval of one school year between measurements.

Results

Statistical calculations were made using SPSS Statistics 28.0. A significance level of $p < .05$ was used for statistical testing.

It was assumed that:

H1: How children solve problems, as measured by the number of ideas they give, will change as they age. After a year of implementing practice-oriented problem-solving education, children will generate more ideas.

H2: Linguistic competence, expressed in narrative expression, will increase, which will be expressed qualitatively. After one year of implementation of education oriented to stimulate communicative competence, students will achieve better results (compared to the first measurement) in the following areas: correctness of sentences, array, syntax, grammar, restoration of events (portions of information).

The results on quantitative analyses were based on a comparison of the averages of two consecutive measurements (repeated measurements, dependent samples) are summarized in Table 1.

Table 1

Mean Scores for 102 Students on 4 Tasks

Year of survey	Picture test 1	Picture test 2	History 1	History 2
		M		
2022	3.4	2.4	10.1	4.9
2023	5.0	3.7	13.4	7.9
		***Student's t* (*p*)**		
	1.8 (ns)	5.6 (ns)	1.9 (< .001)	3.5 (< .001)

The children were eager to cooperate and found the tasks fun but challenging. Regarding thinking based on idea generation, there were no significant differences between measurements, so no progression was found.

In particular, retelling stories proved problematic and found difficult by the students. However, it was in the case of narrative tasks that a satisfactory result was obtained, indicating a statistically significant improvement in the communicative competence of the children studied.

The authors contrasted the present results with standard data compiled for age groups 6–10 between 1990 and 2000 as part of a large-scale UK Medical Research Council project headed by R. Sage (Sage, 1996). At that time, the aim of the study was to determine the problems of students who had difficulties in school despite their normal intelligence on IQ tests. The current study did not formulate a hypothesis on this. However, since the archival study used the same tools for assessing narrative competence as the present one, the authors decided to present the results in Table 2. The level of narrative competence measured now (mean scores) is below the means of the studies performed 20 years ago.

Table 2

Means in Standardized Tests From the UK Population

Age	History 1	History 2
	M	
6	23.0	21.0
7	27.0	25.0
8	30.0	28.0
9	34.0	32.0
10	35.0	33.0

Source: Own research 1990–2000, carried out within the framework of the UK Medical Research Council project, under the direction of R. Sage.

The tests were the same in both studies (1990–2000 and present). Yet the comparison of their effect shows significant and surprising differences. There is general recognition that technology is preferred to talking, so narratives and higher-level thinking have massively declined. In November 2024, the UK government reported that most children in primary schools have smartphones (97%) and that 16–18-year-olds spent an average 7–14 hours daily on them. Thus, story-telling/retelling is not normal practice today, and the participants in the present study confirmed that they never had to retell their school experiences, which was more common in the past. The studies from 1990–2000 were conducted as part of the UK Medical Research Council investigations. The reason was because of the large number of students who were tested as of normal intelligence but were failing in schools. Studies by Sage (1986) showed that the component style intelligence tests in standard use did not examine the ability to assemble and make meaning from quantities of information required for formal teaching. As a result, the Communication Opportunity Group Strategy (COGS) was developed with significant improvement in the performance of this group of

students (Sage, 2000). At this time, the COGS had a positive impact across the UK, with many British and overseas students learning how to implement the programme in their particular contexts. Countries like Japan, Germany and Cuba sent teams to translate COGS into their own languages. It should be noted, however, that the 1990–2000 study cohort consisted of English-speaking students who were UK citizens. As highlighted in the Method section, the proportion of immigrant students in the current study was about 15% (15 people). Immigrants are a major group of the population living in the cities where the original research was carried out, and many of the schools have no native-born British students.

Conclusions and Discussion

The present research aimed to assess how thinking and expressive language skills are developed in school-aged children in the East Midlands region of England and to see if there was an improvement in these abilities after one year of study. A comparison of the mean results obtained in the survey conducted in 2022 and repeated in 2023 shows an improvement that reflects current global trends in language development research. On the other hand, comparing these results with the data collected in the studies conducted between 1990 and 2000, the authors note a regression in narrative tasks. The mean scores of the presently examined groups are well below the original standards. Focusing on the attitudes of students in the first (2022) and second (2023) surveys, a positive sign was the reduced number of students refusing to repeat the story, suggesting better memorization. In 2022, 19 students refused to repeat the first story, while in 2023, the number dropped to 7. For the second story, the number of refusals decreased from 48 in 2022 to 14 in 2023. It could mean that as students get older, they are better at completing tasks with a narrative structure, i.e. on a scheme that resembles the typical school approach to learning based on repetition of facts. In contrast, picture tasks requiring creative thinking were performed at the same level in the repeat study as in the first study. No significant differences in performance were shown. Yet, conclusions should be treated with caution due to the small sample of subjects, which limits the generalization of results.

Contemporary educational challenges in the UK are related to a rapidly changing society, the impact of technology and the pluralism of values. These issues contribute to the behavior of young people, which can have serious social consequences. An example is the growing number of juvenile offenders between the ages of 5 and 15. In response to this trend, the Magistrates in the Community (MIC) program was introduced to make young people aware of the consequences of their actions.

This problem may be partly related to young people's limited ability to reflect on their actions and events, a result of insufficient development of narrative language. Technology, which replaces conversation, further exacerbates this problem (Sage, 2020). The study presented here points to severe limitations in

developing thinking and expression, especially among immigrant children who do not speak English at home. It hinders their integration, understanding of linguistic nuances and development of abilities necessary in British society.

The situation has not changed significantly in decades – research findings suggest that without the right measures, children will not acquire the skills necessary to succeed in professional and social life. Broad thinking and imagination are crucial to humanity's survival, and their shortage is a global problem. Dasen (1994) pointed out that only one-third of adults reach the formal operational stage, and Keating (1979) noted that 40–60% of students have difficulty performing tasks requiring advanced thinking.

Lack of understanding and reflection on school content, and treating them merely as mechanical tasks, leads to absurd results. The well-known example of the "captain's age problem" shows that most children, when asked, "There were 26 sheep and 10 goats on the ship. How old was the captain?" answers 36, without thinking about the content of the question (Kaczmarek & Stencel, 2018).

The underdevelopment of narrative language is reinforced by the preference for texts and emails over face-to-face conversation, which was particularly highlighted by the 2020 pandemic. Studies show that internal dialogue, crucial for thought regulation and emotional stability, is functioning increasingly poorly (Dolcos & Albarracin, 2014; Hurlbert & Schwitzgebel, 2007).

The problem becomes apparent when students complete their education and are expected to solve problems independently, without step-by-step instructions. Approximately 60% of the world's population does not achieve the basic abilities needed to function effectively (Bertling et al., 2020; Di Caro, 2021; Sage, 2020; Tam & El-Azar, 2020). Technology is pushing conversation to the background, and research (Sage & Matteucci, 2022, 2024) emphasises the need to promote dialogue as a key element in developing thinking and decision-making.

Summary

In the face of the growing influence of technology and changing social conditions, it is necessary to take measures to support the development of language and communication. Though often neglected today, conversation remains the foundation for higher levels of thinking and informed decision-making in an era where machines are taking over routine tasks.

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