SUMMARY
The necessity to stimulate the development of one’s ethnic language amongst the children of immigrants has its causes in two factors: firstly, the generation of children brought up in a world of advanced technology develop their relations with the world, people and language differently; secondly, the time of being immersed in an ethnic language dramatically shortens as a result of changes in parents’ work systems. The author draws attention to the need to stimulate speech development in bilingual children and presents the Cracow method as developed: an aural programme, articulation gestures, language programming, events diaries. Simultaneous-Sequential Method of Learning to Read®. Recordings for the aural programme were made in accordance with the principle of time extension so that the child would have the optimum chance to differentiate vowels. The aim of using articulation gestures is to make aware the place and/or the means of vowel articulation as well as to aid the processes of attention and memory through an awareness of the movement of one’s own hand. Language programming is a technique of shaping the beginnings of language communication based on a vocabulary, grammatical, syntactic paradigm. Events diaries are a technique combining direct communication and cognitive approaches in the use of vocabulary and grammatical rules. The form of noting down events and utterances in a diary allows the child to fulfil the role of the interlocutor and recipient, equally at the initial stage of using a language system. In the situation of bilingualism justified is an early acquaintance with written language, which to a noticeable degree makes the construction of a linguistic system easier. When reading out syllables children stop controlling their own speech, and quickly learn correct articulation. Through reading, the language learner masters the most effectively its realisation in accordance with norms. Learning to read early gives huge possibilities in the development of a child’s intellect. Through independent reading not only is the language system developed but imagination and creative thinking are stimulated.
BACKGROUND

I have been conducting research into the linguistic and communication competences of bilingual and multilingual children since 2001. This has allowed me to outline two main areas of difficulties which parents need to face when they decide to raise a bilingual child and, later on, to educate (even if such an education is of an informal nature) their children in two languages.

It was crucial to diagnose delays and development disorders, including the risk of dyslexia, which threatens both children born in Poland and abroad (Cieszyńska 2012, 2014). The effects of bilingualism are often blamed for difficulties in establishing linguistic communication despite the fact that they may also result from other factors. The necessity to stimulate the development of one’s ethnic language in children from immigrant families has proved to be equally important. Its causes are two-fold. Firstly, the generation of children born in an era of high technologies develop their relationships with the world, people and language in a different way. Secondly, the time of immersion in one’s ethnic language has been considerably shortened due to the changes in parents’ work patterns. R. Laskowski emphasises the fact that immigrants often use the language of the host country at home but their competences are insufficient, “(…) as a result, the only language the child is surrounded by on the regular basis is an oversimplified, lexically impoverished, grammatically inadequate, deficient in stylistic nuance foreign language spoken by his/her parents” (Laskowski 2009: 11). Other scholars also highlight the fact that the immigrant parents should not use the language of the host country while communicating with their child (Paradis, Genesee, Crago 2011). The development of the ethnic language should be consistently stimulated since the acquisition of a second language is more effective when it is based on the foundations of a first language (Baker 2007).

The problems I have observed immigrant children having with learning their ethnic language demand the preparation of effective speech-therapy programmes and a departure from the stereotypical thinking that the child will learn a new language in the same way as his/her peers do in their country of origin.

BIOLOGICAL FOUNDATIONS OF LANGUAGE DEVELOPMENT

In order to underline the importance of early stimulation for the development of bilingual children it is necessary to discuss the role of mirror neurons. These neurons, which activate imitation and repetition, enable the child to learn a language. Between the sixth and the seventh months of life the system of mirror neurons allows not only imitation of adults’ facial expressions but also one’s own productions (self-imitating babbling). During this phase it is crucial to listen to the melody of other people’s utterances. It is evident that the parents of a bilingual child should carefully monitor the duration of such stimulation because a child who grows up in their home country is surrounded by a greater number
of speakers, who enhance their linguistic competences (more efficiently). "At the bottom of speech development there lies a tri-modal structure of mirror neurons system which respond to motor, visual and auditory stimulation" (Rostowski, Rostowska 2014:52). These conclusions, which arise from the research into functional neuroimaging procedure (fMRI), have become the foundation of the stimulation techniques used by Cracow method therapists; these include using articulatory gestures, auditory programme, diaries of events, and early reading education.

THE INFLUENCE OF ADVANCED TECHNOLOGIES ON CHILDREN’S DEVELOPMENT

The greatest danger for the cognitive and social development of small children is the fact that play with electronic toys adversely affects the neural network responsible for contact with other people. "The evolving mind, which starts to concentrate on new technological skills, gradually moves away from basic social tasks, such as recognising the facial expressions of other people or discerning emotional context on the basis of subtle gestures" (Small, Vorgan 2011:15). Meanwhile, deprived of the presence of another person, the child acquires neither linguistic competences, nor emotional or social ones. The biological cause of this is the lack of mirror neurons’ activity, which occurs in the act of looking at another person’s face. If, at the very beginning of their development, the child is predominantly subjected to the stimulation of the right hemisphere (dynamic image, music, non-verbal sounds), then the activity of the left hemisphere is blocked, which hampers the development of speech centres. This all happens at the level of neurobiology. The high pliancy of the child’s brain in infancy and post-infancy causes the neuron tracks to quickly adapt to the disturbed perception programme. Receiving and processing sequential and linear linguistic information does not occur at the proper level; the child does not undertake linguistic communication or does so belatedly. Speech centres located in the right hemisphere, which specialise in the reception of non-verbal sounds, almost entirely block the reception of linguistic communication in the left hemisphere.

Subliminal exposure to speech poses a threat to the formation of cerebral connections in the temporal lobe, which is responsible for language processing. When the child is in a room where a TV set, stereo or electronic toys are turned on, he/she perceives speech as a sequence of sounds but does not pay attention to it as a vehicle of meaning. This is how children become resistant to language; the information fails to be processed because the brain rejects it as irrelevant. Understanding other people’s intentions through the cerebral cortex, and thus learning a new language, can be possible only through the “face-to-face” kind of contact.
THE INSPIRATIONS BEHIND A PROGRAMME FOR THE DEVELOPMENT OF SPEECH STIMULATION

Children raised in bilingual families, both during infancy and at the beginning of the post-infancy, acquire a linguistic system in the same way as their peers in the country of origin. However, after learning how to pronounce their first words, and then how to combine two elements of language, the further development of a linguistic system is a much more individual affair. Diversity is a function of the communication time within the ethnic language during the day and the number of people who serve as speech examples for the child to imitate. E. Łuczyński (2010:13) claims that:

the later the stage of the child’s development, the less universal it is […]

As a result, there emerges a need for programming the language of bilingual children during very early stages; in this way, using for stimulation the patterns established in the research into monolingual children brings excellent results. The dissimilarity of conditions in developing communication among immigrant children is conditioned by the time of immersion in the ethnic language. Usually almost immediately after their second birthday children start their pre-school education, which considerably reduces the possibility of practising the grammatical forms they hear.

Parents who raise their children abroad have estimated that their ethnic language is used in everyday communication for approximately one hour in the morning and three hours in the afternoon, as compared to eight hours which the child spends at kindergarten (cf. Cieszyńska 2013). However, the afternoon is also devoted to shopping and fun at the playground, where parents naturally tend to switch to the tongue of the majority. Consequently, the number, duration and quality of statements addressed to children in their vernacular is likewise diminished. It is worth emphasising that in the morning, before leaving for work and kindergarten, the same phrases appear in predictable contexts and situations. In order to learn a language effectively the child needs to have an opportunity to use the grammatical forms he/she knows in new situations and in relation to the vocabulary which is systematically extended.

TECHNIQUES OF STIMULATION

The stimulation of language development among bilingual children requires the use of special techniques which support the development of speech centres in the cortex and facilitate learning vocabulary and grammar. The Cracow method advances the following techniques:

• Aural programme,
• Articulatory gestures,
Aural programme

The basic speech therapy technique whose aim is to stimulate auditory functions is the programme *I Listen and Learn How to Speak*. Its four parts include: language processed primarily in the structures of the right hemisphere (vowels, shouts, onomatopoeias), gradual transition to the tasks assigned to the left hemisphere (syllables and nouns, so-called ‘difficult sounds,’ which include specific oppositions of humming, hissing and hushing sounds, as well as the alveolar "r," verbs and inflection). The fourth part consists of linguistic statements presented in a variety of dialogues. The recordings were done in accordance with the rule of prolonged duration in order to give bilingual speakers or non-native speakers the best chance to distinguish the phonetic characteristics of sound in successive syllables and alert them to their sequential order (their sequence and order in particular words) (Klawiter 2006, Poeppel 1989).

Articulatory gestures

Articulatory gestures (vowel visualisations in syllables) trigger imitation at the primary level of gestures (Cieszyńska 2012). This is possible thanks to the activity of mirror neurons which “are located in the posterior inferior frontal gyrus of the brain (Broca’s area) and in the adjacent abdominal premotor area (Pachalska, Kaczmarek & Kropotov 2014; Rostowski, Rostowska 2010:52). The above-mentioned areas in the left cerebral cortex are particularly sensitive to interpreting intentions, which is the primary function in the process of shaping speech comprehension.

In the first stage of learning a language, the speech therapists who use the Cracow method perform articulatory gestures which serve to visualise vowels and consonants in syllables. Thanks to children’s spontaneous imitation of articulatory gestures an integration of motor, aural and visual information is achieved. The aim of the gestures is to make the users aware of the place and/or the manner of articulation, as well as to enhance attention and memory through the sensations of one’s own hand. Articulatory gestures make it possible for the learner to become accustomed to the sounds of a foreign language when these are accompanied by “manual amplification.” The cerebral cortex and cerebellum contain areas responsible for motion and communication; these are activated “not only in linguistic production but also in the process of the cognition of linguistic utterances” (Rostowski, Rostowska 2010: 52).

A gesture cannot, obviously, replace a word, but it gives additional information, which is meaningful for the student of a given language. Second or foreign language teachers may use gestures which facilitate “the pausing” of words in per-
ception. Language which is linearly arranged along the axis of time, vanishes quickly from the area of hearing, whereas a gesture illuminates the meaning of a word, like a spotlight.

The results of A. Załazińska's research (2006) have demonstrated that during a dialogue, its participants reproduce the gestures of the person currently speaking, whereas the perception of movement and its imitation create neuron links between visual and motor centres in the cerebral cortex (Gazzaniga 2011).

**Language programming**

Language programming is a technique of shaping the initial stages of linguistic communication based on vocabulary, grammatical and syntactic paradigms. On the basis of an analysis of systemic rules, the phases in the development of a child’s speech, as well as the frequency of the use of words and phrases, a paradigm (a pattern) of a lexical and grammatical minimum has been created. Such an approach takes into consideration linearity and sequentiality of the increase in linguistic information, the hierarchy of grammatical phenomena, as well as the living conditions of a given child. In other words, a speech therapist makes use of the constructed language (a minimal communication code) so as to create a linguistic picture of the world in the child’s mind. The idea of language programming consists in the belief that the mere repetition does not yet mean comprehension and application, both of which are realized only when the child is able to create a grammatically correct statement in a new context, without any assistance.

There is a widespread misconception among immigrants that first of all it is important to expand the vocabulary in bilingual children’s language rather than work on their syntax. It is not enough to know vocabulary in order to understand
statements and create them on one’s own. It is only the knowledge of grammar that enables the child to understand written and oral utterances.

The technique of language programming in bilingualism is based on two assumptions: the imitation of the stages in the speech development of a monolingual child and the creation of syntactic patterns whose aim is to accelerate and facilitate the learning of inflection in the native language. Only as late as the age of three does the child gain adequate competence to distinguish between two languages, on condition that a given method is used consistently: mL@H (minority language at home), or (alternatively) OPOL (one-person-one-language) (Cieszyńska 2013). If the child hears numerous utterances at the beginning of his/her speech development, the child is able to formulate for him/herself the rule(s) which govern them. Initially the child is likely to implement this rule regularly and consistently, even though it may go against the common usage, while at the later stages, the child will make necessary readjustments as a result of feedback from the environment. A bilingual child’s linguistic information resources are too limited to form any rules; moreover, such a child does not receive corrections from the people around him/her. The reason for this is parents’ belief that the child’s statements should not be corrected as this might discourage him/her from using the ethnic language. Meanwhile, speech therapists should explain to parents that the aim of this method is to provide the child with a valid grammatical pattern rather than make him/her correct or repeat the utterance. The rules for introducing vocabulary could be presented as the following instructions:

- The words are grouped in pairs or in opposing sets;
- The choice of first words should reflect their rate of use in the child’s surrounding environment.

The stages of the programmed introduction of the verb create the lexical, morphemic and syntactic foundations necessary for gradual, unaided linguistic descriptions of the events and phenomena occurring in the world.

**The diaries of events technique**

P. Ricoeur pointed out that discourse needs to be written down because the evanescent event of speech tends to vanish unless it is materially recorded through writing. This is why the philosopher claims that “the fate of discourse is linked with littera and not with vox” (Ricoeur 1989:101). Similarly, writing offers to bilingual children an opportunity to reach down to the phonemic, lexical and syntactic structures of the utterance.

In actual fact, dialogue with another person needs to be treated as the main method of shaping a given language system in the child’s mind. It means that ethnic language outside one’s home country should be developed through conversation. It is not enough to talk at children; we have to talk to them.

Diaries of events are a technique which combines direct communication and a cognitive attitude to learning vocabulary with grammatical rules (Cieszyńska-Rożek 2014). The diary allows one to play the roles of both sender and recipient,
equally during the initial stage of using the language system. At the very beginning of using this technique, an adult records text in writing so that an event of dialogue may materialise.

Keeping diaries of events may also have a therapeutic function. The child begins to realize that all the words he/she thinks of may be written down, and the words which were created in someone else’s mind may be deciphered. This fascinating discovery reveals the magic of the written language. This goes on to fuel the child’s own activity; not only does it shape linguistic consciousness but also stimulates aural attentiveness, phoneme hearing, as well as a linear transformation of language. The child may experience the joy of creating new words, which is crucial for intellectual development.

The concept of recording events from the child’s everyday life includes four crucial conditions of acquiring a new language. These are:

- Creating scenes of shared attention,
- Receiving communicative intention from another person,
- Role reversal in acts of communication,
- Developing the skills of understanding questions and asking own questions.

Theoretical foundations of the diary-keeping method are based on:

- A communicative approach to foreign and second language teaching,
- Cognitive techniques,
- Selection of words and phrases from the child’s main field(s) of interest,
- Introducing vocabulary items in discrete semantic fields.

A speech therapist, or a parent who records events, knows that acquiring a new language depends on a social and communicative context. In this respect it is important to understand differences in the meaning of words and phrases as dependant on context. The easiest way to arouse the child’s motivation to speak is to encourage him/her to talk about themselves or relate emotional events and facts.

Diaries of events employ one more principle formulated by the psychology of learning. It claims that the effectiveness of this process depends on taking a number of individual factors into consideration. It is multi-faceted, ranging from genetic, temperamental determinants, and environmental experiences to specific, unique and individual experiences.

The technique of diary-keeping employs a hierarchical order in acquiring a language. The entries which are written down in diaries may be at first simple vowels, exclamations or onomatopoeias, before a teacher or a parent arrives at the stage of using whole words, and then sentences. First entries imitate those which appear during the development of a child’s speech. They often take the form of a combination of two words whose meaning can be guessed from the context.

Using diaries of events allows the child to develop the following skills:

- The ability to conduct a dialogue (to understand and to be understood),
- Sociocultural awareness (What is being said? How is it being said? – in a variety of communicative situations),

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• A communicative competence flowing from awareness that there are various ways of giving information, but the most important objective is to be understood and to achieve the aim of communication,
• Vocabulary – it is easier to learn the meaning of words in emotional contexts and situations,
• Using the rules of inflection and syntax – the rules need to be abstracted from many utterances by the child so that one day he/she will be able to create a grammatically correct statement.

A linguistic description of the event in which the child has participated depends on their level of lexical and grammatical proficiency. Creating sentences and texts about the events in which the child has found themself will enable them to use linguistic conjecture (guess the language), which is an effective technique in learning the meaning of words while reading.

Simultaneous-Sequential Method of Learning to Read®

Learning to read is a part of holistic processes which stimulate the development of cognitive functions in small children. In the case of bilingualism, writing facilitates the creation of a language system. The value of reading, however, lies not only in the opportunity to extend knowledge but also to hone social and cultural skills.

The term Simultaneous-Sequential Learning to Read® refers to the brain’s organisation of language activities as it embraces simultaneous processes which are characteristic of information transfer in the right hemisphere, as well as the linear sequential processes controlled by the left hemisphere. While learning to read, the child absorbs pronunciation, inflection, and syntax.

Learning to read helps children to relax the control of pronunciation; while repeating the paradigms of syllables they quickly learn how to articulate words properly. In each case the point is to encourage the child to learn how to read instead of speak, which alters the child’s attitude to linguistic utterances. It is through reading that correct realisations can be achieved.

The best time to learn the written code is the very beginning of pre-school age. A two-year child is already intensely interested in the world of letters. He/she eagerly takes part in classes during which a written code is taught. Six-year old children, by contrast, are less intrigued by writing. They have already entered the enticing world of computers, and written language no longer seems useful to them. It is vital that learning to read prepares them for creative reading with a total comprehension of content. This condition can be met only when a child, during the first stages of learning, does not only focus on recognizing the graphic models of letters, but it also learns to understand the meanings of words.

Learning to read at a young age also affects the development of hemispheric asymmetry which is necessary for the appropriate and correct processing of linguistic information. Neurobiological research has shown that in-depth language stimulation, in particular learning to read and write, can favour the gradual development of the left hemisphere in relation to verbal (linguistic) processes.
Cieszynska-Rożek, *Bilingual children*

(Cieszyńska 2013). This, in turn, is an indispensable condition for reading quickly with comprehension, which leads to effective learning.

It is worthwhile to teach reading by following the historical order of writing development: from simultaneous units (vowels, exclamations, onomatopoeias, globally understood nouns) to linear sequences (through syllabic record to alphabet); from reading aloud to acts of solitary readership.

In order to be fully understood, written language discovered by small children needs to have some of the features of spoken language. This is why the language used in the books designed for the programme *I love to read/Ich liebe Lesen* is simple and informal; moreover, it comes accompanied with colourful and expressive pictures. The world of nature is depicted from the perspective of a small child who perceives animals as feeling and thinking creatures. This offers numerous possibilities of developing positive emotions and empathy in kindergarten pupils.

Early learning to read gives great opportunities to form the child’s intellect. Imagination is developed through reading, and it is necessary for creative thinking.

Learning how to read every new element of language is conducted in three stages:

• **Repetition** – imitating the teacher/speech therapist, a reading puppet/animal, another child who performs the teacher’s role;

• **Understanding** – demonstrating/showing written vowels, exclamations, onomatopoeias, syllables and words which are read by the teacher, a reading puppet, or a child who performs the teacher’s role;

• **Independent naming** – reading a phrase which has been selected, drawn, or taken out of a box.

**CONCLUSION**

Bilingualism may positively influence the development of a child’s cognitive functions as long as he/she knows at least one language on a par with his/her peers’ linguistic competence. Experts in this area of study often put forward a theory that bilingualism will contribute to the child’s intellectual development only when “(...) both languages are accorded equal status, when there are no defensive reactions against one language which the child feels is the ‘worse’ one (), when the parents are able to arouse their child’s respect for cultural heritage and one’s own language” (Laskowski 2007:79).

Despite the fact that psychologists who specialise in a child’s cognitive functions try to depict linguistic and non-verbal skills as two distinct and individual dimensions of the intellect, even they admit that a proper understanding and use of language allows us to see and understand the world in its totality.

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