

Methodology for Developing the Communicative and Speech Skills of Bilingual Children Aged 5–6 And the Binkom-5/6 Pedagogical Assessment Protocol

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Abstract: This article examines the improvement of a methodology for developing the communicative and speech skills of bilingual children aged 5–6. Communicative and speech skills are conceptualized as an integrated set of receptive-semantic, lexical-grammatical-expressive, dialogic-pragmatic, narrative-discursive, and strategic-bilingual components. The pedagogical conditions for development are specified on the basis of the child's individual language profile, authentic communicative needs, graduated pedagogical support, continuity between the preschool educational organization and the family, and multi-source observation. An improved model based on these conditions and its integral component, the pilot version of BINKOM-5/6 (Pedagogical Assessment Protocol for Bilingual Children's Interactive Communicative Skills), are presented. The protocol comprises 24 original tasks grouped into six modules, a 0–3 scoring rubric, and an S0–S4 pedagogical support code. A statistical approach that accounts for the group-by-time interaction is also described for evaluating the effectiveness of the methodology.

Keywords: Bilingual children, communicative and speech skills, pedagogical assessment protocol, BINKOM-5/6, dialogic speech, graduated pedagogical support, preschool education.

Introduction: Today, as migration and multilingualism expand, a growing number of children are being raised in regular contact with two or more languages. Under these conditions, the task of preschool education is not to ensure equal proficiency in two languages. Rather, it is to support children's ability to use their language repertoire in different communicative situations, cooperate with an interlocutor, and overcome communication difficulties. Contemporary research explains bilingual development as a dynamic process associated with the quantity and quality of exposure to each language and the range of interlocutors (Hoff & Core, 2013; Thordardottir, 2011). Therefore, instead of assessing the communicative and speech development of bilingual children aged 5–6 against monolingual criteria, developing and assessing it through a system of communicative actions observable in pedagogical situations has become a pressing scientific and

methodological issue.

Natural bilingual environments involving Uzbek–Russian, Uzbek–Tajik, and Uzbek–Kyrgyz language contact exist in major cities and regions of Uzbekistan. In such settings, children's communicative experiences are not uniform. Some children hear both languages concurrently within the family, whereas others encounter the second language regularly only in a preschool educational organization. A pedagogical methodology should therefore not treat bilingual children as a single homogeneous group; it must take into account their language biographies, functional language dominance, and everyday communicative contexts.

Local studies have examined the lexical, dialogic, and bilingual characteristics of children's speech as separate areas of inquiry (Qurbonova, 2014; Shamsiyeva, 2022; Komilova, 2025; Mirkasimova, 2025). However, these

studies draw on different scientific constructs. A comprehensive methodology that considers the communicative and speech skills of bilingual children aged 5–6 through the combined lens of individual language profile, dialogic-pragmatic activity, and strategic bilingual management, while also converting these dimensions into indicators measurable through pedagogical observation, has not yet been sufficiently developed. This article presents research findings intended to address this gap.

RESEARCH AIM, OBJECT, AND METHODS

The aim of the study is to improve the methodology for developing the communicative and speech skills of bilingual children aged 5–6 on the basis of individual language experience, meaningful interaction, and graduated pedagogical support. This aim is pursued through the development of a pilot version of BINKOM-5/6 (Pedagogical Assessment Protocol for the Interactive Communicative Skills of Bilingual Children Aged 5–6).

The object of the study is the process of developing the communicative and speech skills of bilingual children aged 5–6 in preschool educational organizations. The subject of the study comprises the content and pedagogical conditions of this development, the improved model, and the mechanisms of pedagogical assessment based on BINKOM-5/6.

The study employed a theoretical and comparative analysis of national and international sources; a review of regulatory documents; the BINKOM-PROFILE parental language-biography questionnaire; structured pedagogical observation; BINKOM-5/6 interactive communicative tasks; the Multilingual Assessment Instrument for Narratives (MAIN) for comparative assessment of narrative production; expert evaluation; inter-rater reliability analysis; and descriptive and inferential statistical methods.

STRUCTURAL COMPONENTS OF COMMUNICATIVE AND SPEECH SKILLS

Within the study, communicative and speech skills were specified as an integrated construct comprising five components. The receptive-semantic component refers to the ability to understand heard or visually presented content and identify semantic relationships. The lexical-grammatical-expressive component denotes the ability to express an idea using lexical and grammatical

resources appropriate to the situation. The dialogic-pragmatic component encompasses initiating communication, observing turn-taking conventions, and responding appropriately to an interlocutor. The narrative-discursive component concerns the ability to structure an event through meaningful connections among its beginning, action, and outcome. The strategic-bilingual component refers to purposeful use of paraphrasing, clarification, requests for assistance, or resources from the second language when linguistic or comprehension difficulties arise.

These five components are intended to measure not merely a child's knowledge of linguistic units, but the ability to mobilize available resources to achieve a communicative goal. Language biography is not treated as an outcome component. It is regarded as a background factor that explains individual variability and as a means of differentiation. Using the same five components across the theoretical, methodological, and experimental stages ensures the consistency of the research construct.

PEDAGOGICAL CONDITIONS FOR DEVELOPMENT

The development of communicative and speech skills was enhanced through the integration of several pedagogical conditions. The first condition is consideration of the individual language profile, including each child's daily experience in both languages, range of interlocutors, and functional language choices. The second condition is the creation of authentic communicative situations. A linguistic unit is acquired not in isolation, but while accomplishing a specific task. The third condition is graduated pedagogical support from S0 to S4. This approach is based on consistently reducing the amount of assistance as the child becomes more independent.

The fourth condition is continuity between the preschool educational organization and the family. Children gain a substantial part of their communicative experience in the family environment; therefore, a system of brief activities for parents was developed. The fifth condition is the maintenance of multi-source pedagogical observation. A child's performance is assessed not on the basis of a single task, but through a body of behaviors observed across different types of activity. These conditions are integrated into a unified management cycle that forms the basis of the model

described in the following section.

AN IMPROVED MODEL FOR DEVELOPING COMMUNICATIVE AND SPEECH SKILLS

The developed model consists of five blocks. In the goal-oriented block, the final outcome is not defined as equal proficiency in two languages. Instead, the aim is to increase the child's independence in initiating communication, responding appropriately to an interlocutor, explaining content coherently, and repairing communication breakdowns. The diagnostic-conceptual block turns BINKOM-5/6 results into a source for methodological decision-making. Assessment is not limited to control points at the beginning and end of the intervention; it also guides the process itself.

The content block links the five theoretical components to the six practical BINKOM-5/6 modules: DIALOG, INFO, PRAGMA, REPAIR, STRAT, and NAR-TRANSFER. The procedural-technological block divides the process into four stages: diagnostic-adaptive, modeling, interactive-productive, and transfer of acquired skills to a new situation. In the outcome-reflective block, the total score is not treated as the principal measure. Instead, the component profile and the change between baseline and final assessment are taken into account.

The model blocks do not operate in a strictly linear sequence. They are connected through a feedback loop. The initial profile and BINKOM-5/6 results influence the selection of subsequent tasks and the amount of support, while observation during the process modifies the content of the next session. In this way, diagnostic information is translated directly into pedagogical decisions.

BINKOM-5/6 PILOT PEDAGOGICAL ASSESSMENT PROTOCOL

The diagnostic-conceptual block of the model is implemented through BINKOM-5/6, the Pedagogical Assessment Protocol for Bilingual Children's Interactive Communicative Skills. The protocol consists of six modules, each containing four original tasks, for a total of 24 tasks. The DIALOG module measures communicative initiative and semantically connected responses; the INFO module measures the ability to obtain missing information by asking questions; and the PRAGMA module assesses the selection of a speech act

appropriate to the situation. The REPAIR module evaluates the identification and resolution of misunderstandings; the STRAT module evaluates communication strategies used in the presence of a lexical gap; and the NAR-TRANSFER module assesses the ability to explain the content of a story to a new interlocutor.

Each task is scored from 0 to 3. A score of 0 is assigned when no communicative action occurs, while a score of 3 is assigned when the child achieves the goal independently and appropriately for the situation. In addition, an S0–S4 support code is used to record the type and degree of assistance with which the child achieved the outcome. Parallel Forms A and B of the protocol were developed to reduce the effect of memory for task materials during reassessment of the same child. The child's natural communicative behavior during the week is also recorded using the BINKOM-OBS naturalistic observation form.

The protocol was not designed as a narrative production test that replicates MAIN (Gagarina et al., 2019). MAIN is retained as an independent comparative measure of narrative ability and serves as a source of external convergent evidence for BINKOM's NAR-TRANSFER module. The Uzbek version of MAIN was prepared by Ch. Abdumazhitova and A. Amanov. The content validity of BINKOM-5/6 is evaluated in stages through expert appraisal, cognitive piloting, inter-rater reliability analysis, and convergent evidence from MAIN.

The protocol currently remains a pilot pedagogical assessment protocol. Transforming it into a nationally normed test will require a larger and regionally diverse sample, age-based stratification, and separate studies to establish diagnostic cut-off values.

METHODOLOGICAL TECHNOLOGY FOR COMMUNICATIVE AND SPEECH DEVELOPMENT

A 16-week developmental program was designed on the basis of the model. The program begins with initiative and listening, then progresses systematically through filling information gaps, pragmatic adaptation, collaborative storytelling, repairing misunderstandings, bilingual strategy use, and transferring acquired skills to new situations. A given skill is activated repeatedly across different activities rather than practiced in only one exercise, including dialogic book reading, role-play, information-gap tasks, and collaborative storytelling.

The primary observation indicator is specified in advance for each activity. This procedure helps the educator maintain a clear focus on the change being observed. The developmental materials do not exactly replicate the post-test tasks; otherwise, practice effects could be confounded with the effect of the methodology.

STATISTICAL APPROACH TO EVALUATING THE EFFECTIVENESS OF THE METHODOLOGY

The primary statistical question for evaluating the effectiveness of the methodology is not a simple between-group difference at post-test. Rather, it concerns the difference in change over time between the experimental and control groups. Therefore, the group-by-time interaction is treated as the main parameter. Because the data are hierarchically nested within children and groups, a mixed-effects statistical model is planned, with age and degree of language exposure included as covariates.

For each main effect, the estimate, standard error, 95% confidence interval, and effect size are to be reported together (Lakens, 2013). When multiple module indicators are analyzed, the Holm correction procedure may be applied to control the family-wise Type I error rate (Holm, 1979).

Reducing BINKOM outcomes to a single total score is considered methodologically limiting. The module profile, the level of support required, and naturalistic behavior recorded in BINKOM-OBS should be interpreted together for pedagogical purposes. Pedagogical significance is discussed separately from statistical significance. Even a small statistical effect may have practical value when accompanied by a child's newly demonstrated initiative in authentic group communication.

CONCLUSION

The findings of the study show that the communicative and speech development of bilingual children aged 5–6 should not be viewed as the attainment of equal outcomes in two languages. Instead, it is interpreted as a dynamic system of capacities for understanding and expressing meaning, cooperating with others, and managing communication difficulties in authentic interaction. Distinguishing five components of communicative and speech skills and linking them to pedagogical conditions ensured the theoretical

consistency of the methodology.

The improved model, the BINKOM-5/6 pilot pedagogical assessment protocol, and the 16-week developmental technology enable preschool educational organizations to plan targeted pedagogical work with bilingual children, conduct systematic observation, and individualize instruction. The pilot status of the protocol indicates that it has not yet reached the level of a fully standardized test. Large-scale norming, percentiles by age and language pair, and external validity remain priorities for future independent research.

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