

## **Second Language Learning as a Socially-Constructed Cognitive Tool for Mediating a Student's Learning Process and the Knowledge About Itself Construction as a Subject of Educational Activities**

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**Abstract.** The advantage of using a uniform system of learning principles in the process of a foreign language studying deals with the fact of considering it as a psychological mechanism of a dynamic component development and self-development in the context of spatial-temporal subject complex. Attention is drawn to the fact that psychological data are of great respect in connection with a second language acquisition because the subject—a foreign language—is the reflection of mental activity on behalf of a human being. The offered model of communication provides for diversity of mutual education relationships instead of strict defining knowledge and ignorance, information originator (subject) and recipient (object). Intensification of internalization from interpsychological to intrapsychological level of a foreign language mastering proves the idea and illustrates another opportunity of social development under the circumstances of intercorrelation with a student and a teacher and vocabulary enrichment. This problem has to do with a highly interactive class identified through the actual experience by a student the socialized active personality development prospect. Necessity of compiling a computer program based on the above-mentioned principles is stressed.

### **1. Introduction**

The study examined in this article involves an overt application of activity theory to classroom language learning. Continuing the theme of scaffolding and learning in the zone of proximal development, special attention should be drawn to four themes: 1) language, cognition, and communities; 2) language-based theories of learning and semiotic mediation; 3) private speech; 4) activity theory (Vygotsky, 1986) [1]. In analyzing the recorded interaction between the students and the teacher, it is shown that instructional conversations are developmentally sensitive to the students' growing ability to use the language required to carry out a specific task. The grammatical learning is achieved as a consequence of their interactions, which is evidenced, among other things, by shifts from other-regulated to self-regulated error correction.

The positive effects of learners verbalizing strategies by N.F. Talyzina (1975) [2] were extended to language learning. The grammatical learning is achieved as a consequence of their interactions, which is evidenced, among other things, by shifts from other-regulated to self-regulated error correction. The positive effects of learners verbalizing strategies by N.F. Talyzina (1975) [2] were extended to language learning. The study shows that overt collaborative verbalization of metacognitive strategies such as predicting, planning, and monitoring can be a more effective means of mediating learning than just instruction in learning strategies alone. All the above-mentioned was used when writing the Textbook (Chernova & Kuznetsova, 2013) [3] in the way of communicative language teaching which is relevant to

activity theory, since, as the theory maintains, different actions, linked to the same goal, can give rise to similar outcomes. The succession and number of exercises help students and teachers as well help in the process of communicative and cognitive activities in an ESL class.

The investigations of a great number of psychologists are devoted to second language learning not as the acquisition of a new set of grammatical, lexical, and phonological forms but as a struggle of concrete socially constituted and always situated beings to participate in the symbolically mediated lifeworld of another culture. According to sociohistorical and social constructionist theories the understanding of thinking, which is being constructed with words, unravels any language as the principal mediational means, and that human learning and development are inherently based on the foundation of social relations. The main idea of the article is to estimate classroom interactions and the foreign language acquisition in the actual classroom practice which allows relating human mental functioning to the cultural, institutional, and historical settings with the help of this computer program [4].

## **2. Background to the Problem**

A foreign language is a tool, which is available through participation in societal contexts. The achievement of this aim is very complicated if you take into account standard theories of language development. Overcoming the dichotomy between the individual and the social in language acquisition studies helps to make use of the interpretive tools of sociocultural theory to investigate the dynamics of classroom foreign language acquisition. Thus, the authors try to show how sociocultural theory can begin to unravel the difficulties of instructional interactions in a classroom. The background to the classroom investigation is provided by five standard theories of language acquisition, such as correlational studies, case studies, survey research, experimental research and ethnographic research with their epistemology and ontology [5].

The references to the classes are empiric but not experiential. Attendance of the classes provides an opportunity to observe and notice the special complexity of the classroom through such research methods as grounded theory, biography, discourse, ethnographies, case studies, narrative inquiry, and analysis. Every opportunity was used in the process of compiling the above-mentioned Textbook in order to show how sociocultural theory can be helpful in better understanding the instructional completeness of the foreign and second language classroom events, including the discursive interactions. It is necessary to follow some principles in the process of career education, such as creative development, the leading role of sociocultural context, cooperative activity and communication as the development motivating force and the means of education, interiorization and exteriorization as development and teaching mechanisms. Exactly, personality characteristics account results in providing new psychophysiological items, which provide a student's initiative in learning and real communication [6].

A group of scientists regards Instructional Conversations as a mediational tool for ESL development (D. Wood, J. S. Bruner, and G. Ross) [7]. The whole idea is based on Vygotsky's supposition that the origins of learning, development, and human action comes back to conversation and the semiotic mediation that those provide the novice. Vygotsky's instrumental method in the form of Instructional Conversations comprises two important aspects of language and learning. On the interpsychological plane, any language serves as psychological tools of communication and sharing cultural meanings. On the intrapsychological plane, they affect learning and cognitive development. Any experienced ESL teacher must be able to make a classroom episode be conversational, under the circumstances of attention to coherence, distributed turn taking, focus on new information, spontaneity and unpredictability. These conversations can be admitted instructional because the discussion is being shaped toward a curricular goal that in its turn builds or activates background knowledge in students [4]. Direct instruction or modelling are used to promote more complex language expressions, at the same time, questions help students to expand, elaborate or restate their statements and replies. Instructional conversations give an

opportunity of students' socializing into language learning in rich contexts in order to facilitate language growth and development. Being operationalized as a verbal attempt of self-regulation during problem-solving tasks, that is, the result of stress that accompanies constructing meaning in L1 or L2, the private speech is distinguishable from the interpersonal communication. J. Smith's study contributes significantly to understanding the intersubjective nature of teaching, to realizing connection between speaking and thinking, and pedagogical importance of thinking mediation through student's private speech in the process of the problem-solving talk [8].

To illustrate the given data, we would like to show the screen shot, presenting the available materials on the development of interpersonal relations ending in internalization growth.

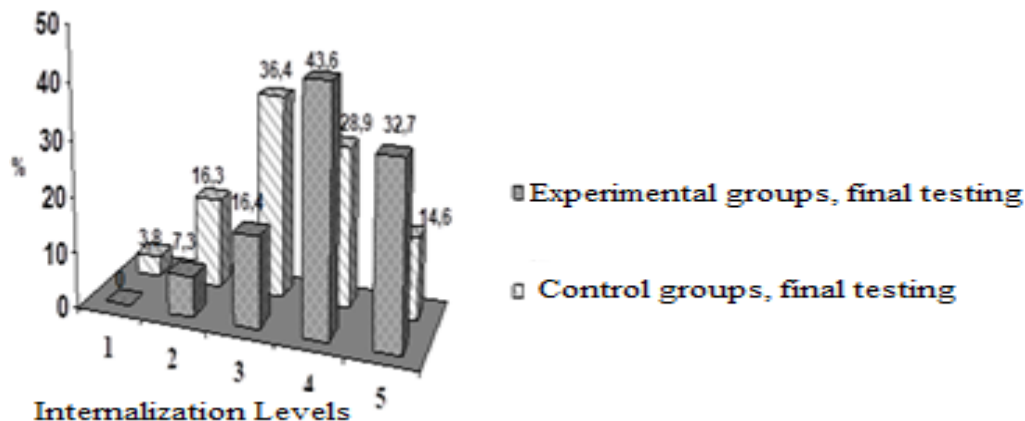


Figure 1. Diagram of Internalization Growth from Interpsychological to Intrapsychological Level of a Foreign Language Mastering.

Dark columns present the experimental groups, and light-color columns present the control groups. It proves the idea and illustrates another opportunity of social development under the circumstances of intercorrelation with a student and a teacher and vocabulary enrichment.

### 3. Methods of Research

Current models of input, output, and interaction are insufficient as a framework for analyzing classroom talk. The question of instructional conversations was explored within the frames of a PhD study, compiled by N.A. Chernova. The motivation for the study was the following observation. It turned out that instructional conversations usually arose with fairly advanced ESL learners. The question remained puts forward the idea of having an instructional conversation in a beginning foreign language class. Limited linguistic resources are not available for a topically coherent, extended, and meaningful conversation. The following data were received. If a teacher followed a predictable pattern a) setting up the vocabulary practice exercise; b) completing textbook exercises using the new vocabulary; and c) spontaneous questions and comments by students and teacher embedded within the practice exercise, conversational communication was out of the question [4]. The possibility of such conversation depended on management talk and extension activities, which show features of it most consistently and impressively. In this case instructional conversations were possible in elementary classes (19% of the total vocabulary practice) and pre-intermediate (34%) foreign language classes.

The computer program kept track of the following items: self-dependence, activity, social direction, self-government, reflection and level of knowledge. When designing the software, the main goal was to achieve an adaptive graphical interface, with the aim of user-friendly interaction with the application. As a logical architecture and functional model to reflect the capabilities of the mathematical model of Krasilnikov V.V. (hereinafter referred to as the mathematical model) and its algorithm, we chose the

technology of Windows Presentation Foundation (WPF) high-level programming language C# and design the architecture through the basics of object-oriented analysis. The objective is to make a chart of precedents using the unified modeling language UML (Unified Modeling Language) [9].

Using the above-mentioned diagram, we are going to reflect the scenarios of a user (actor) work analyzing the input data [10]. The arrows show the dependencies between the use-case and the actor. The application has 2 user groups: students and lecturers. The user "Lecturer" manages the data of the user "Student", with the ability of controlling test results, adding and removing accounts.

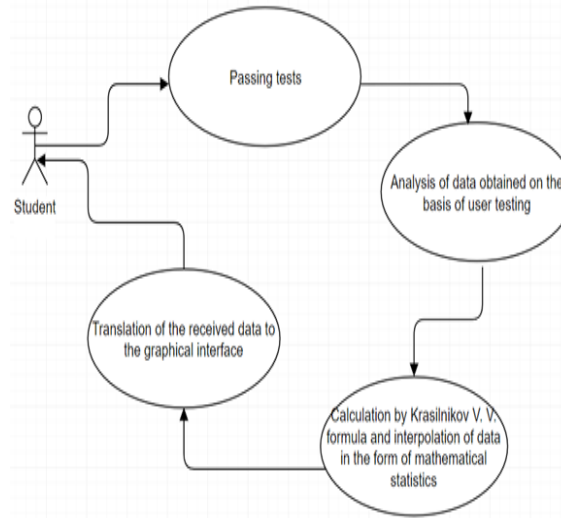


Figure 2. User Case Diagram.

The study was conducted with the first-year students of the Naberezhnye Chelny Institute (the branch of Kazan Federal University) in groups with a high level of language proficiency. The experiment was conducted in the second semester. By this time a student can already use the specific vocabulary in spontaneous dialogues. The study shifts the governing concept of learning away from the acquisition metaphor toward the participation one. The participation metaphor finds evidence for learning in an individual’s growing and widening activity.

#### 4. Results of the Study and Discussion

An initial analysis was conducted to determine whether the significant improvements in personality characteristics accounted for providing new psychophysiological items and a student’s initiative in learning and real communication. The positive results of the control test could open up new avenues for research. The analysis showed that the «Experimental” group made notable progress in all items in comparison with the ascertained. The “Control” group made unremarkable progress only in a series of individual issues.

The received ascertaining indices of elasticity coefficient in the «Experimental” group show level of knowledge is greatest dependent on activity (66%) and social direction (66%). Reflection takes the third place (19.5%). The fourth place goes to self-dependence (12%) and the last one is self-government (2.7%). The “Control” group presents the same ascertaining indices of elasticity: social direction (63.2%), activity (54%), reflection (14%), self-dependence (13%) and self-government (9.3%). Observations clearly show the first level of internalization for students of both groups, when they need a constant teacher’s participating in the learning process.

The control test indices are found to be in good correlation with the ascertaining indices in the “Control” group: social direction (70%), activity (43%), reflection (25%), self-dependence (22%) and

self-government (12.6%). The «Experimental» group test indices result in establishing a new scheme of level of knowledge greatest dependence on self-government (69.2%), reflection (57.2%), self-dependence (53%), activity (24%) and social direction (4.6%).

Table 1. The Influence of Factor Markers on the Achieved Results in the “Experimental” Group after the Experimental Investigation.

	x1	x2	x3	x4	x5	x6	x7
<i>D</i> =	1,317	1,810	0,830	0,967	2,924	31,034	24,761
<i>σ</i> =	1,148	1,345	0,911	0,984	1,710	5,571	4,976
<i>Mean</i> =	4,255	4,164	4,455	4,400	0,886	-5,590	-3,630
<i>β</i> =	-0,041	0,086	0,124	-0,135	0,821	-3,009	2,693
<i>t</i> =	0,104	0,076	0,171	0,430	0,046	0,692	0,572

The following factor markers are calculated: x1 – self-dependence, ascertaining test; x2 - activity, ascertaining test; x3 – activity, control test; x4 - self-dependence, control test; x5 - social direction; x6 - self-government; x7 – reflection. Design procedure parameters are presented in the following columns: D – factor markers dispersion;  $\sigma$  - factor markers mean quadratic deviation;  $\beta$  - standardized regression coefficient;  $\ell$  - elasticity coefficient. The comparison of quantitative indicators on the basis of the ascertaining and control tests proves the idea of increasing three items, such as reflection (+37.7%), self-dependence (+41%) and self-government (+66.5%), while level of knowledge greatest dependence on activity (-42%) and social direction (-61.4%) is decreasing.

In other words, students are taking part in a collaborative dialogue. Communicative collaboration is based upon the active and purposeful agent on the part of a student. The authors offer the following model of ESL classes: 1) self-directed activity comprising self-dependence, activity, social direction, self-government, reflection → 2) reflective, problem-solving orientation in SLA class → 3) internalization of social interactive process in the zone of proximal development with the English language as a cognitive tool for the individual → 4) the second language mediated process of an agent formation in learning and professional activities. Observations clearly show how the interaction in the zone of proximal development changes with time (in this case in the course of one year) and at last it is used as an instrument of mediation [11].

## 5. Summary

This model allows to be sensitive to students’ needs and abilities and support the overpowering and transformative agency embodied in the learner. It has to aim at positive attitude stimulating the best possible progress and achievements [12]. When working in a classroom, it is important to arrange the teaching process based on the strengths of the students developing their confidence and ability to work and study independently and in a team. The sociocultural context of the teaching process contributes to the development of the students’ identity within the society. The diversity of sociocultural contexts used during the classes has to teach them to think critically and creatively, solve problems and recognize the advantages. These approaches applied during the teaching process provide students not only the knowledge and skills, but also emotional comfort and sufficient self-esteem.

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