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METHODS AND DIDACTIC ASSESSMENT TASKS THROUGH THE PRISM OF SOCIO-CULTURAL THEORY

Cătălina OSOIANU, Nina BÎRNAZ,
Moldova State University

This study examines a range of effective teaching methods in the educational process in accordance with the meaning of socio-cultural theory. The present research, elucidates the defining aspects of the socio-cultural theory proposed by L. S. Vîgotski, highlighting the characteristics of the proximal zone of development and the relevance of scaffolding in the educational process. The relevance of this study lies in identifying the types of scaffolding and, in accordance with these, formulating teaching tasks and adapting effective teaching methods to the evaluation process. The findings of this study suggest that pupils and students develop their thinking and reasoning skills more effectively when the teaching tasks and evaluation methods correspond to the proximal zone of development.

Keywords: *Socio-cultural theory, Zone of proximal development, Scaffolding, Teaching methods.*

METODE ȘI SARCINI DE EVALUARE DIDACTICĂ PRIN PRISMA TEORIEI SOCIO-CULTURALE

Acest studiu examinează o serie de metode eficiente de predare în procesul educațional, în conformitate cu sensul teoriei socio-culturale. Prezenta cercetare, elucidează aspectele definitorii ale teoriei socio-culturale propuse de L. S. Vîgotski, evidențiind caracteristicile zonei proximale de dezvoltare și relevanța schelei în procesul educațional. Relevanța acestui studiu constă în identificarea tipurilor de schele și, în conformitate cu acestea, formularea sarcinilor didactice și adaptarea metodelor de predare eficiente la procesul de evaluare. Rezultatele acestui studiu sugerează că elevii și studenții își dezvoltă mai eficient abilitățile de gândire și raționament atunci când sarcinile de predare și metodele de evaluare corespund zonei proximale de dezvoltare.

Cuvinte cheie: *Teorie socio-culturală, Zona de dezvoltare proximă, Schele, Metode de predare.*

Introduction

Current learning theories have significant implications for teaching because they focus on the development of cognitive processes in pupils/ students. These theories, including constructivism (social constructivism and cognitive constructivism), cognitive theory and socio-cultural theory, share several ideas, the most important of which concern: (1) knowledge building; (2) embedding learning and development in a socio-cultural context [13].

In this context, pupils/students develop their thinking and reasoning skills in the same way that they learn language, gestures, interpersonal behaviors, manners and tastes - through their social interactions with family, school and community. According to L. S. Vîgotski (1978), socio-cultural theory emphasizes that any aspect of a child's cognitive development occurs twice: first socially in interaction with others, and then psychologically or internally. Whatever language and logical structures that children use in their thinking have been learned first through social interactions [13].

Theoretical aspects of the socio-cultural theory proposed by Vîgotski L. S.

Social constructivism is a theory of learning proposed by L.S. Vîgotski in 1968. This theory involves two aspects, first, the theory states that language and culture are the frameworks through which people experience, communicate and understand reality. According to L. S. Vîgotski, language and culture play essential roles in both human intellectual development and how people perceive the world. This means that, learning concepts are transmitted through language, interpreted and understood through experience and interactions in a cultural setting, secondly, social constructivism recognizes the social aspect of learning and the use

of conversation, interaction with others, application of knowledge as an essential aspect of learning and a means to achieve learning goals [1].

Socio-cultural learning theory highlights the psychological and social nature of consciousness, the social origins of the human psyche, and how higher cognitive functions such as reasoning, understanding, planning, and memory develop from social experiences. Human activity is not limited to a chain of reflexes or adaptive behaviors, but also involves a component of interaction with the environment, a component during which the subject is transformed [16].

In this context, Vygotsky L.S. supports the principle that only that learning that contributes to development is satisfactory, on the one hand, and, on the other hand, militates for the principle of unity between intellect and affectivity, because intellectual development is inextricably linked to motivational development [16].

It is also important to mention that the cognitive construction of the person is carried out in interactive contexts, in which the child and the adult engage in a joint activity. The child's knowledge and skills develop precisely because of this cooperation process, which involves „experts” and a „beginner”. The more experienced person provides a framework (or scaffolding) on the background of which the child operates in the direction of a better understanding. In Vygotsky's conception, cognitive development is the result of a double formation, external and then internal, in a movement whose direction is from social to individual, and not vice versa [12].

The socio-cultural theory proposed by Vygotsky emphasizes the social nature of knowledge, by capitalizing on language and cultural elements, emphasizes the importance of interpersonal relationships in the transmission and generation of educational content, emphasizes the role of social interaction in the development of knowledge. Vygotsky offered a new view of the characteristics of learning, interpreted as a product of the quality of adult-child interactions. The psychological concepts promoted by Vygotsky (the scaffolding and the zone of proximal development) allow a resignification of the educator's status. One of the author's approaches is that language helps cognitive development. The use of language as a means of communication and enrichment of the individual cognitive experience, plus the role of culture and group. Knowledge is achieved by 'mental activity' that develops through the use of different forms of language. The construction of individual information is mediated by interpersonal relationship, group activity. Social processes facilitate language learning. A child in a preverbal stage of development has an intelligence seen as a potentiality. As language is acquired and developed, thought processes evolve [11].

Another approach of the psychologist Vygotsky refers to the fact that social factors contribute to cognitive development. Through „collaboration, the child develops more than if he worked alone”. The pupil „is stronger, smarter than in his individual activity” when he collaborates with those around him with a higher level of development [6].

An important concept in sociocultural theory is known as the zone of proximal development. The zone of proximal development provides a conceptualization of how the child's developmental potential can be understood. Vygotsky (1978) defined the zone of proximal development as the distance between the actual level of development determined by independent problem solving and the level of potential development determined by solving problems under the guidance of an adult or in collaboration with more capable peers [8].

In this context, the child's capacities are first manifested in an inter-individual relationship, when the social environment provides the child's guidance (a process described by Bruner as a relationship of assistance or collaboration between the child and the adult), and only then the individual activities are triggered and controlled, as a result of a process of interiorization. The author invoked thus considers that each higher psychic function occurs twice during the child's development: first in a collective activity directed by the adult (as an interpsychic function) and only secondly as an individual activity, as an inner property of the child's thinking (as an intrapsychic function). The most eloquent example in this regard is that of language. This semiotic instrument of utmost importance in cognitive development appears first as a means of communication between the child and the adult (or entourage), and then it turns into an internalized language, passing through a phase of egocentric language [12].

Stages of the Zone of Proximal Development

There are three distinct stages in which a student can develop their skill set. For learning to take place, it is essential that the teacher understands the essence of these stages, in which the student is involved [5].

1. *Tasks that the student can't accomplish.*

Tasks that are outside the student's zone of proximal development are those that cannot be performed even with the help of an expert. If the task does not fall within the proximal development zone of the student, then it is necessary for the teacher to identify tasks appropriate to the level of qualification of the student.

2. *Tasks that the student can perform with assistance.*

When a student is close to mastering a set of skills needed to perform a task, but still needs the guidance of an expert (teachers, peers, support teacher, etc.) to do so, it is considered to be in their zone of proximal development. In this situation, an expert can use various techniques to help the student better understand the concepts and form the skills necessary to perform an individual task.

3. *Tasks that the student can perform without assistance.*

At this stage, the student is able to perform tasks independently and has the necessary skill set. When a pupil has reached this stage, the teacher can increase the level of difficulty of the tasks to find the next proximal zone of student development and to encourage further learning [5].

Based on Vygotsky's theory of socio-cultural learning and the zone of proximal development, Shepard (2005) points out that scaffolding is a strategy that teachers use to advance learning in the zone of proximal development [9].

In this context, scaffolding involves both structural and procedural supports that guide and enable students to work within their own proximal zone of development so as to develop their full intellectual potential [2].

The scaffold describes the process of transition from teacher assistance to independence in student activity. This answers the common question about the student's proximal zone of development: If a student can perform high-level tasks with only assistance, then how can this student perform tasks at the same level independently? [15].

Donato (1994) states that scaffolding is a concept coming from cognitive psychology. He confirms that during social interaction, a more capable participant, through the use of language and other supportive conditions, can help the student advance to a higher learning mechanism with their knowledge and skills. In education, scaffolding is an instructional structure through which the teacher shapes the learning strategy or task and then transfers this responsibility to the students [15].

The use of the supportive scaffold facilitates, helps and accelerates student learning. „When teachers and peers use scaffolding in cooperative learning, the learning improves". In this context, the question arises how capable the teacher is to determine how much help is needed, in order for the student to complete the task in an independent way and to be successful as when the task was carried out with the help of the teacher [15].

1. According to Van de Pol, there are three types of scaffold classifications [10]:

2. Describing and providing different means and techniques of support for teachers: modeling, adjusting, calibrating the required level of support, providing feedback, training (demonstrating), questioning and cognitive structuring (decomposition) of the problem being solved.

3. Description of the teacher's functions within the joint action with the student: recruitment - reducing the student's action in „degrees of freedom", maintaining the direction, marking critical features, controlling the student's frustration and, finally, demonstrating a model of the correct action.

4. Identifying the link between the means offered and the goals/intentions that the teacher sets [10].

Because scaffolding is such a dynamic intervention, harmoniously adapted to the student's progress, the support provided by the teacher during the scaffolding depends very much on the characteristics of the situation, such as the type of task and the student's responses. Scaffolding is therefore specific to learning situations, with each situation requiring adaptation of certain techniques [17].

According to researchers Kang, Thompson & Windschitl [9] five prominent types of scaffolding are highlighted:

(a) Scaffolding: merging text with drawings;

(b) Scaffolding: contextualization of the main phenomenon;

(c) Scaffolding: provision of the observation sheet;
(d) Scaffolding: use of the evaluation grid;
(e) Scaffolding: providing incomplete sentences.

Scaffolding: merging text with drawings. This type of scaffolding involves students explaining main phenomena using both text and drawings. Such tasks are carried out on posters, where students reproduce models that reflect relationships between the components of a system. For example, „Graphically represent the carbon cycle in nature”.

Scaffolding: contextualization of the main phenomenon. Assessment tasks require students to explain general phenomena, scientific ideas, the representation of which is found in the textbook. For example, „Why do the seasons change?” „Why do the descendants of some and the same parents look different?”

Table 1. Example: Observation sheet.

Observation sheet
Earthworm

- Body size _____
- Body color _____
- Number of segments (approximate) _____
- Particularities of the dorsal part _____
- Particularities of the ventral part _____
- Mode of travel _____

Conclusions on the belonging of the earthworm to the phylum

Ringworms _____

Scaffolding: provision of the observation sheet. The observation sheet is a teaching aid that students turn to while building their response. There are two types of observation sheets. The first considered as a „simple observation sheet” is a list of scientific concepts/terms presented in a table. The second, called an „explanation observation sheet”, which asks students to explain several aspects of the main phenomenon, as well as relationships between ideas, observations, models. For example, „Describe the structure of the body and movement to the earthworm, based on the observation sheet (table 1)”.

Scaffolding: use of the evaluation grid. The evaluation grid is a tool to measure student acquisitions and contains a set of criteria and a grading scale (e.g.: often, rarely, never or points are given on a certain scale, e.g. from 1 to 5).

For example, „Assess, according to the evaluation grid (table 2.), a colleague’s plant cell model”.

Table 2. Example: Evaluation grid.

Evaluation grid	
The plant cell model	
The cell contains all the main components specific to plant cells	2 points
The cell contains some main components specific to plant cells	1 point
The cell does not contain a cell wall	0 points

Scaffolding: providing incomplete sentences. The incomplete sentences proposed by the teacher prompt the students to focus on the message and complete the sentence with the missing information. There are two types of incomplete sentences. Some focused on focus and some focused on connecting. Incomplete focus sentences require students to focus their attention on the main phenomenon and explain it by fill-

ing in the missing words/phrases. For example, „When blowing through a straw in lime water, I noticed that it_____. I know this phenomenon because _____." Connecting-focused incomplete sentences require students to make deeper connections between key components of scientific explanation, such as evidence and reasoning. For example, „Evidence concerning the origin of man, comes from _____."

In this context, we propose didactic evaluation methods suitable for the types of scaffolds (table 3.)

Table 3. Didactic methods of evaluation in correspondence with the types of scaffolding.

Types of scaffolding	Didactic evaluation methods. Characteristic
Scaffolding: merging text with drawings	***The „portfolio"*** is a complex and flexible evaluation tool, which contains and structures an „archive", a collection, a set of information related to performance, theoretical and practical skills, which determine a student's academic progress [apud. 3]. This tool represents a collection of products of the student's activity, structured and signified accordingly. The portfolio provides a complete picture of the student's progress over the time frame for which it was designed, by reference to criteria formulated at the time of design. It allows the investigation of students' products, which usually remain uninvolved in the evaluative act, representing an incentive for carrying out the whole range of activities. The portfolio can be part of a summative assessment, providing not only specific information, at a certain moment of the student's acquisitions, but even information regarding the evolution and progress recorded by him over time, along with important information about his concerns [apud. 3].
Scaffolding: contextualization of the main phenomenon	***The „6 WHY?" method*** it is taken from the British didactic and consists in preparing the answers for six consecutive questions „why?", hence the title of the method. By using the „6 why?" method. a question is asked, and from the question follows the answer, and then - a question from the previous answer, and so it continues up to 6 questions and 6 answers. Each question must begin with „why?", and the answer follows with: „because/ because/ because". The mentioned method is dynamic and engaging. The discussion proceeds from the initial topic, reaching a relevant end. Formulating an argument, no matter how valid and correct, can provoke a contradictory discussion and the person launching the argument must be prepared [19]. Technique „6 Why?" challenges students to prepare an argumentative speech, while the speech is not truncated with the expression of questions. Students who have communication skills will know how to organize these responses into a coherent and persuasive text, highlighting the main phenomenon [4].
Scaffolding: provision of the observation sheet	***„Observation"*** represents a method of direct knowledge, which allows the understanding of a reality by perceiving the concrete facts of its manifestation. In the framework of systematic and independent observation, a direct research action of reality prevails, by directing learning in didactic sequences designed at the level of interaction between intuitive knowledge and logical knowledge. This method capitalizes on the classic scientific research model by means of inductive and deductive reasoning, which ensures the direct investigation of objects, facts, events, relationships, correlations. The pedagogical function of this method aims at the formation/development of the spirit of objective research of objective, natural and social reality, based on criteria of scientific rigor assumed at psycho-pedagogical and social levels appropriate for each school level. The effective realization of this function requires the stimulation of the spirit of observation, evaluable in terms of a general pedagogical aptitude, at levels of superior cognitive competence, which engages the operationality and flexibility of thinking [18]. As a rule, this method involves the use of an observation sheet that facilitates the learning process and develops observation skills.

Scaffolding: use of the evaluation grid

The „project” is an interactive method used in summative assessment, which facilitates effective communication between students, being characterized by a theoretical, practical, creative, active and effective character. The project can be carried out at the teacher's request by the students as a moment of activity or synthesis at the end of a didactic unit after the completion of the teaching and learning of thematic concepts. Thus, the teacher will evaluate, through the project, the knowledge, skills and abilities of the students accumulated after each unit, including verbal expression [7].

Project evaluation grid:

Evaluation criterias	Score awarded
Compliance with the structure proposed for the elaboration of the project.	0 points - lack of the proposed structure. 1 point - partial compliance with the structure. 2 points - making the product according to the established structure.
Integration of informational content through graphic organizers, suggestive images.	0 points - lack of graphic organizers and suggestive images. 1 point - organizing the content through graphic organizers and images inappropriate to the topic. 2 points - content organization through graphic organizers and images adapted to the topic.
The relevance of the project (utility, interdisciplinary connections, etc.), the connection between the proposed subject for the project and the product.	0 points - the product is irrelevant, there is no connection with the topic proposed for the project. 1 point - the product is partly relevant, it shows interdisciplinary connections. 2 points - the product is relevant, totally related to the subject proposed for the project, the interdisciplinary nature is visible.
Demonstrating knowledge of the project's content through the clear and captivating presentation of a coherent, logical speech, within 5-7 min.	0 points - the speech does not have a perceptible structure, it is presented unclearly and has no cohesion between ideas, lexical errors are committed. 1 point - the speech contains distinct ideas, explicitly formulated, according to the elaborated project, the presentation lasts more than 7 minutes. 2 points - the speech contains distinct ideas, explicitly formulated, according to the elaborated project, the presentation falls within 5-7 minutes.
Formulating appropriate answers to the questions asked by colleagues and the teacher in accordance with the presented project.	0 points - the answer to any question asked by colleagues and the teacher is missing. 1 point - formulating the partially correct answer/only for some questions asked by colleagues and the teacher. 2 points - formulating the correct answers to all questions asked by peers and the teacher.

„Four-step argument”.

Purpose of use: Formation of the skills of expressing opinion, position in a particular problem.

As a result, we get a profoundly reasoned assessment. In the case of controversial issues, the technique allows an analysis of different opinions to determine the extent to which they are convincing [14].

Algorithm of use:

Scaffolding: providing incomplete sentences.

The structure of the argument	Formulating the argument
Thesis (statement)	The thesis should be short, a simple affirmative sentence.
The explanation (the premises)	Write down 2-3 statements, intended to reveal the essence of the thesis. Arguments are punctuated by meaningful formulations: because, the fact is explained by..., considering the fact that...
Evidence (supporting evidence)	According to the presented topic, references to certain aspects are selected in order to illustrate the launched thesis. Several pieces of evidence can be used to support a thesis.
Conclusion	Strengthening the hypothesis, by resuming it in a nuanced way, if the argumentation demonstrated the thesis stated initially or contradicting the hypothesis, if the argumentation demonstrated the respective hypothesis. Various persuasive words are used: surely, obviously, clearly, therefore, therefore, in conclusion, etc.
Conditions: Necessarily respecting the proposed structure: thesis, the explanation, evidence, conclusion. Stimulating the search for more evidence (not less than 2-3) to support a thesis [14].	

Conclusions

Referring to the socio-cultural theory, we emphasize that the tasks and teaching methods of assessment in accordance with the scaffolding types must be used in the context of the students' proximal zone of development in order to provide the possibility of highlighting the students' real abilities. Therefore, pupils/students develop their abilities to think and reason effectively through interaction and socialization in the educational process.

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Data about the authors:
Cătălina OSOIANU, PhD student, Doctoral School of Humanities and Education, Moldova State University.
E-mail: osoianu.oc@gmail.com
ORCID: 0009-0003-4443-3334

Nina BÎRNAZ, PhD, Associate Professor, Moldova State University.
E-mail: ninabernazz@gmail.com
ORCID: 0000-0002-2543-6949

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