Constructivist Learning Theory, "Good Teaching" and how to Achieve it

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Abstract

Sufficient evidence is provided in the modern scientific and pedagogical literature to support the feasibility and success of the developed core principles use in organization and planning of educational work used by many teachers in the world. Among the modern scientific approaches used by different systems of secondary education, the most popular ones all around the world are based on constructivist theories (Hattie, 2009). Peypert S. is the most well-known theorist of cognitive-constructive course. Peypert drew his attention to both two approaches- behaviorist and constructivist. Complex training involves the integration of material and includes interaction with student's personality as well. The analysis of the psychological and pedagogical literature helped to identify existing modern ways in formation of a constructive model of elementary education. Nowadays Kazakhstan's educational community actively accepts constructivist learning system through an understanding of its content, interpretation and application in practice. In this paper we consider two methods of successful teaching put worth into practice in the Republic of Kazakhstan and implementation of constructivist learning ideas. The first method is the effectiveness of the teacher's activity, his in-activity, the nature and frequency of interaction with his students, where teacher activity is aimed at determining compliance with student requirements. The second approach focuses on the process of teaching, which requires considerably more effort than a formal performance of professional duties. In our study we selected 40 participants from Aktobe and Kostanay regions. Selection of participants was made on the following criteria: age range - 30-39 and 40-50 years old with working experience over than 15 years; an elementary school teacher; teachers of the humanities, teachers of natural sciences and exact sciences. To establish the effectiveness of ongoing research pedagogical research methods have been applied such as analysis of school documents (summaries of lessons, pupil's notebooks, and class journal), survey of teachers and pupils, surveillance; interviews, etc.

1. Introduction.

Today, the main changes in education system rely on a fact of opposition of two basic theories: the theory of the transformation and the constructivist theory. On the basis of these theories education model is defined. Nevertheless, now, both in western and in eastern pedagogical sciences many teachers still consider that the main way of teaching is a direct transfer of knowledge from a teacher to a student. A starting point of the theory of transformation is the understanding that knowledge of the world is static and fixed and has to be accepted as something self-evident. Thus, a teacher transmits knowledge and concepts, accumulated over the centuries. This model of education is called "transformation model".

Constructivist theory which is widely propagated in western education system is based on the position that knowledge is actively constructed by a human mind. New knowledge is constructed on the basis of existing knowledge and ideas. The main purpose of this theory in terms of education is to develop students' ability to think. Perkins distinguishes two concepts: deep and superficial comprehension [1]. He claims that knowledge which results in superficial studying can be easily forgotten. According to Perkin's theory "the deep understanding is connected with already available knowledge. And we do not only accumulate knowledge, but we are capable to understand and apply it when it is required".

Richardson suggest that definition of constructivist pedagogics is "a creation of conditions in a classroom, the organization of activities and use of methods which are based on the constructivist theory of teaching and also statement of the purposes which are aimed at the development of students, their deep understanding of a subject, and also at development of thinking which is necessary for future studies" [2].

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Similar ideas are presented by John Biggs and Catherine Tan in their book “Teaching for quality learning at university: What students do." [3].Biggs and Tang paid main attention to the role of education. They believed in changes of education which would put a student into the center. The main question that should be asked when considering the education is not that *what does a teacher / lecturerdo?* But in fact *what does a student / learner do?* According to this concept, the authors didn’t describe the methods of teaching, rather they concentrated on the joint activities of a teacher and a student (Teaching / Learning Activities). Fedenev and Vogel in their book "Methods of Teaching" compared the two theories, emphasizing the learning process (Table 1) [1].

Table 1. Comparison of traditional and constructivist theories of learning

Traditional behavioral theory	Modern cognitive theory
Education is the accumulation of information and skills.	Education is a holistic process, much more than the accumulation of information.
The teacher can transfer knowledge directly to students.	The student actively constructing their knowledge and comprehension.
Education takes place during the interaction of the teacher and student.	Education is a social process and involves cooperation.
Particular attention is paid to teaching.	Particular attention is paid to training.

2. Research methods

The pilot study was run on pedagogical staff of Aktobe and Kostanay schools of the Republic of Kazakhstan. These cities are located nearby. At the beginning of the experiment, two working groups of teachers were selected, each group consisted of 20 participants (N=40), see Table 2-3.

Table 2. Quantitative and qualitative indicators of the teaching staff involved in the pedagogical study (Aktobe)

	Work experience		Pedagogical category			Number of winners (pupils)	Methodological manuals	Number of articles	Advanced training courses	Experts
	15-20 years	21-30 years	Highest	I	II					
Primary teachers	3	5	3	3	2	5	8	8	8	2
Teachers natural and exact sciences	2	2	2	2		3	4	4	4	2
Teachers of social and humanitarian disciplines	3	1	2	1	1	2	4	4	4	1

Table 3. Quantitative and qualitative indicators of the teaching staff involved in the pedagogical study (Kustanay)

	Work experience		Pedagogical category			Number of winners (pupils)	Methodological manuals	Number of articles	Advanced training courses	Experts
	15-20 years	21-30 years	highest	I	II					
Primary teachers	4	4	2	2	4	4	8	8	8	1
Teachers natural and exact sciences	1	3	1	1	2	2	4	4	4	2

Teachers of social and humanitarian disciplines	2	2	2	1	1	3	4	4	4	2

3. Results of study

The data analysis of pedagogical staff show existence of their pedagogical activity, the developed authority both among colleagues and among pupils. Participants according to their age features testify to the sufficient level of pedagogical skills and their positive relation to the conducted pedagogical research.

The pedagogical research took place in 2014-2015 academic year. We used Sadyryn's and Yakovlev's questionnaires "Interaction of a teacher and pupils during a lesson", "The differentiated approach to pupils at a lesson" and "Implementation of requirements of problem teaching in a lesson". The results of conducted research showed division of all participants into two groups (see Figure 1).

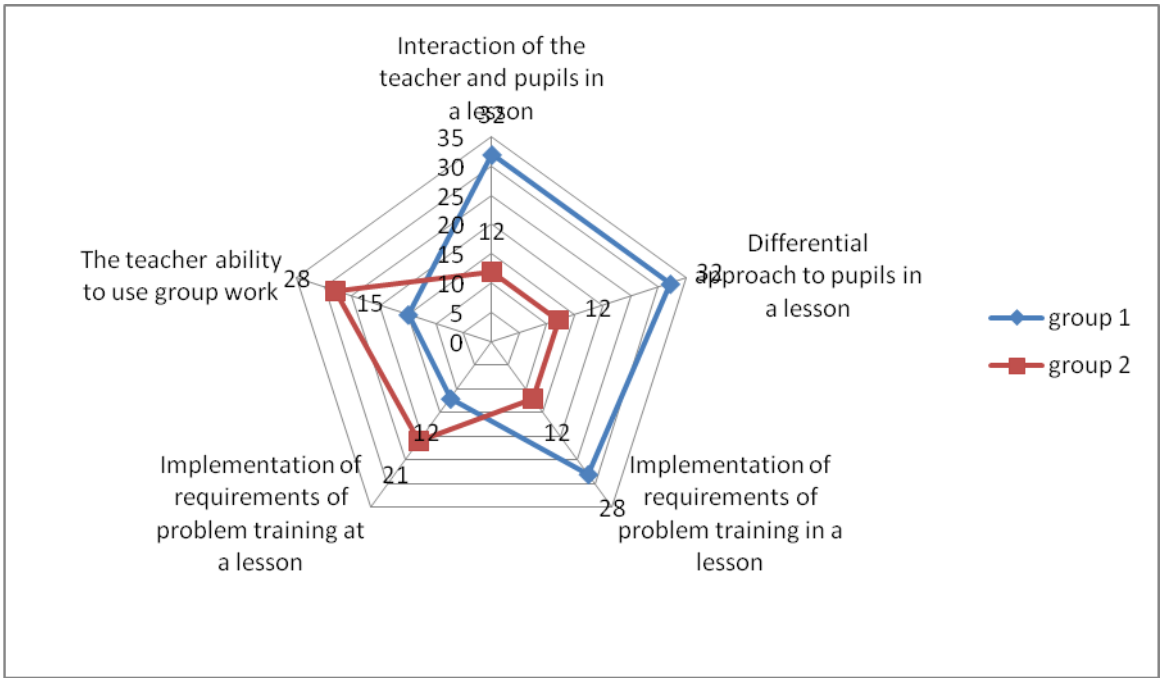

Figure 1. Results of pedagogical diagnostics (web)

- First: the effectiveness of the teacher's work, his activness, the nature and frequency of interactions with his students, in which the actions of a teacher are aimed at determining compliance with the requirements of the practice, which includes 4 primary school teachers, three teachers of natural science and exact sciences, and 5 teachers of the socio-humanitarian;

-The **second** approach focuses on the process of teaching, which requires considerably more efforts than a formal conscientious performance of professional duties. This group included 12 primary school teachers, 5 teachers of natural sciences and exact sciences, and 4 teachers of socio-humanitarian subjects.

The methods and type of work was defined according to their age. The students and teachers selected the main qualities of a successful teacher.

Table 4. Quality of successful teacher

According to first group of teachers	**According to second group of teachers**
Enthusiasm	Enthusiasm
Knowledge	Knowledge

Accurate purposes	Pedagogical approach
Feedback	Honesty, objectivity
Kindness	Openness for communication with pupils
Availability	Teaching level adapted to students' level of knowledge
A variety in teaching	A variety in teaching
Honesty, objectivity	

Ramsden, P., identified factors towards the success of an educational process in his work names "The Lectures at Uppsaile University". We will consider the following issues [4]:

- Socio-psychological climate;
- Motivation;
- Reflective teaching;
- Activation of the students.

Therefore, the teacher's task is to choose the best methods for successful teaching among which are:

- Project work;
- Case-based learning;
- Problem-Based learning;
- Peer tutoring;
- Games-Simulation;
- Role-playing game;
- Distance learning.

It is impossible to claim that some methods are better than others and we have to exclude, for example, all theoretical lessons and replace them with practical and laboratory works. First of all the teacher has to find an optimum set of methods which will answer the course purpose. And the most important here is to remember that active training is more effective than passive one.
Psychologists (Biggs and Tang, 2003) claim that to activate the students it is necessary to use more various methods [3]. According to researchers in the field most of people perceive / remember / understand:

- ✓ 10% from this that they read;
- ✓ 20% from this that they hear;
- ✓ 30% from this that they see;
- ✓ 50% from this that they see and hear;
- ✓ 70% from this about what they speak with others;
- ✓ 80% from this that they use and apply;
- ✓ 95% from this to that they teach others.

The assessment plays an important role in educational process. There are two main forms of an assessment defining-forming and total. In pedagogical sources huge attention is paid to the forming assessment - feedback. It is also one of the most effective methods of educational activity which helps in noticing errors in understanding of students and in correcting them. Such assessment doesn't influence on the result at the end of a course and therefore doesn't cause fear or alarm in students.
Lewis Elton defined that the assessment in general has some negative consequences [5]. According to him, pupils generally concentrate on those aspects and questions on which they will be estimated. In other words, they study only that course of material which will be asked at examination. Therefore it is extremely important to agree on requirements of examination with the purposes and the maintenance of a course, i.e. thus to formulate control or examination tasks that they reflect the objects set for a course. The major aspect about which the teacher has to remember is an assessment of various levels of knowledge.
As a result, a norm-sample of the constructive personality we will present the definitions created by teachers of each group:

- A constructive personality is a person vigorous, purposeful, susceptible to teaching and constructive criticism; aimed at positive results in any sphere of professional activity; he is sociable, sustained and capable of taking responsibility for decision-making and their realization; he is stress-resistant and presentable;

- A constructive personality is a person who has knowledge how structurally (almost productively) change laws so that they fix the most rational organization of activity, promot the statements and ensure the rights and freedoms of a person, integrate into the European and world space.

4. Conclusion

Thus, the constructivist theory of teaching is the most acceptable for Kazakhstani schools, it answers to all criteria of educational policy requirements in Kazakhstan. Results of the conducted pedagogical research testify that teachers of Aktobe and Kostanay schools possesss the most important criterias of successful teaching such as:

- Efficiency teacher's activity, his activeness, character and frequency of interaction with pupils.
- Teaching process which demands considerably bigger efforts than formally conscientious execution of professional duties.

At the same time, it should be noted that a consensus of all members of both working groups that there is no unified method which is perfect and approachable in all educational situations. On the contrary, more productive is the choice of suitable methods and variability during educational process. The optimum method has to be picked up for each educational situation. Changing a view of the theory which is the cornerstone of education a teacher has to remember constantly that the training/doctrine (learning) is the main process and a pupil is the central figure in education. And the main function of a teacher consists not in transferring of knowledge, but in creation of conditions for their formation.

5. References

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