



Cooperative learning as a means of forming communicative skills to students

Aprendizaje cooperativo como método de formación de destrezas comunicativas de los alumnos

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ABSTRACT:

The article presents the results of using interactive learning technologies to implement cooperative learning obtained on the basis of the bachelors majoring in "Pedagogical education" study. The study found that the introducing cooperative learning technologies in small groups based on professionally oriented situations will increase the motivation of future university trainers and manifest their personal position thus forming their communicative skills. A set of organizational and pedagogical conditions of realizing cooperative learning was determined and experimentally approved. Criteria, indicators and level of forming university students' communicative skills were developed.

Keywords: cooperative learning, formation of communicative skills, educational process, university students, interactive and ethical skills.

RESUMEN:

En el artículo se muestran los resultados obtenidos del trabajo con los estudiantes de grado en pedagogía usando las tecnologías del aprendizaje interactivo en el marco del aprendizaje cooperativo. El estudio ha demostrado que con el aprendizaje cooperativo y sus tecnologías basando en situaciones aproximadas al entorno profesional en grupos pequeños se posibilitará elevar la motivación de los futuros profesores y manifestar su posición personal formándose así las destrezas comunicativas. Han sido determinadas y comprobadas con experimento una serie de condiciones organizativas y pedagógicas usando el aprendizaje cooperativo. Han sido determinados los criterios, indicadores y el nivel de formación de destrezas comunicativas.

Palabras clave: aprendizaje cooperativo, formación de destrezas comunicativas, proceso educativo, estudiantes universitarios, destrezas interactivas y éticas.

1. Introduction

Modern social economic and educational guidelines of society and the need for humanization and democratization of higher education as a whole raise the requirements for competence of the university graduates as an indicator of the professional activity quality, further personal and professional development, and the level of social activity, culture and thinking. To ensure a high level of competence of higher education institutions graduates one could observe the emphasis on

interactive learning technologies, based on the types of interaction and cooperation among trainers and students, and among students themselves.

The problem of learning effectiveness through interaction and cooperation were considered fundamental, such as the concern of humanity over the ages. We can find the first attempts to solve this problem in the works of prominent philosophers and thinkers of Ancient Greece and Ancient Rome and later in the period of the establishment of the social sciences and the humanities (17-19th centuries) the issue of the effectiveness of interaction and cooperation as a means of training was also raised. Their ideas provided the basis for the theories of group learning by Andrew Bell and Joseph Lancaster, Dalton Plan (Helen Parkhurst), the systems of the Yen-Plan (Peter Peterson), and others.

The idea of cooperative learning (Kessler, 1992), or learning appeared in pairs, where small groups -in the 20's years of the 20th century- it were framed on the concepts of social constructivism (Vygotskiy, 1978) and meta-cognitivism (Flavell, 1979). These ideas were actively used by supporters of pragmatism and subjectivism (Dewey, 1989). However, one could observe the development of cooperative learning technology only in the 70's of 20th century in different countries. At the same time, in spite of diverse and large-scale studies devoted to this issue, today it needs further investigation.

The objective of the article is to reveal the essence of cooperative learning technology, the feasibility of its implementing into educational process by highlighting the effectiveness of such technology influence on the formation of students' communicative skills.

2. Cooperative learning as a pedagogical problem

First of all, we would like to note that the key concepts of cooperative learning were elaborated in detail by three groups of American educators from Johns Hopkins University, Minnesota University (Rogers Johnson and David Johnson in 1987) and Aronson's group from California in 1978, as well as Shlomo Sharan, Tel Aviv University in Israel in 1988.

Today, the technology of cooperative learning and interaction of participants in the educational process are considered in the works by Balan (2015), Dyachenko (2002), Granovska (1994), Karafkan (2015), Kashlev (2004), Kolisnyk (2015), Kolker (2000), Korneshchuk (1998), Polat (2000), Polivanova (2000), Volkova (2006), and others. The essence of cooperative learning is to jointly acquire knowledge and skills at the individual level, on the basis of gaining cooperation experience of students, to solve educational tasks by means of information exchange, questioning, mutual stimulation, and awareness of the responsibility for the learning outcomes not only by students themselves, but also by their group-mates.

Cooperative educational activities are mostly implemented as a model for learning in small groups to achieve a common goal, in other words, it is such an option for the organization of learning process that makes it the most effective one for each student. Pometun (2004) distinguishes the following elements when structuring cooperative learning:

- firstly, the positive interdependence, which means the awareness that the efforts of each member of the group are necessary and indispensable for the success of all and each participant makes his unique contribution to joint efforts, - it creates the responsibility and interest in the success of everyone;
- secondly, the direct personal interaction that stimulates learning activities through support and encouragement of each other, thus providing personal dynamics (Pometun, 2004).

The purpose of cooperative learning is not only to master knowledge, skills and abilities of each student at the level corresponding to his individual peculiarities of this development. Here we have to emphasize the effect of socialization and the formation of communicative skills. The main idea of learning in cooperation is to learn together, and not just do something together. To study together is not only easier and more interesting, but also it means to study much more effectively. Moreover, it is important to note that this applies both to academic achievements of students and their intellectual development, as well as to personal maturity and humanity. Cooperative learning is considered to be the most successful alternative to traditional learning technologies in the pedagogy at the international level (Volkova @ Tarnopolsky, 2013).

To organize the work of small groups in the study of professional disciplines, it is advisable to rely on certain principles of the effectiveness of cooperative learning (according to D. Johnson): positive interdependence (each student must know the material and ensure that it is studied by others); side-by-side support interaction (direct interchange and assistance to others in carrying out tasks); individual responsibility with the help of rating each other by members of the group;

ability to work together (establishing trustful relationships, productive communication, effective conflict solutions); group processing of results (discussion of task effectiveness) (Koshmanova, 1999).

It is necessary to mention pedagogical conditions for students' educational work in small groups:

- permanent "migration" of the group members, which deprives the stereotypes in the work and develops the ability for immediate adaptation of each student;
- the selection of tasks that are of interest to all students and are personal and professionally significant for them;
- tasks "openness", which provides their carrying out at different levels of complexity;
- the atmosphere of continuous collective and individual reflexive monitoring of the success to solve the set of educational tasks;
- changing the position of the teacher from the expert lecturer or the organizer of student training for the *facilitator*, who acts as the "*assistant*" for the students and should support and accompany the process to develop a new student's experience.

Cooperative learning in small groups is expedient in order to: consolidate and update the theory discussed at lectures and seminars; mutual control to assimilate self-developed units of educational information; mutual assistance in the independent study of the fragments of the educational topic; mutual stimulation and mutual evaluation of the development of new personal and professional points and their critical thinking.

The interaction of students during classes on the basis of cooperative learning can be carried out in different ways: *in pairs (dyads)*, *groups (micro groups)*, *teams* whose members have a common task, during free movement in the classroom and regular meetings with one or several students who conduct an interview with members of a group that performs a micro group task, in the process of verbal interchange of particular micro groups or groups in the process of fulfilling the general task of the whole group.

It should be noted that students' interest in creating varieties of work in pairs ("*face to face*", "*brainstorming in pairs*", "*say and switch*"); the use of rotating (changing) triples; work in small groups ("*Aquarium*", "*Let's take a position*", "*Life situations*", etc.).

Aronson et al. (2010), Dansero (2008), Johnson et al. (1994), etc. have substantiated several basic training technologies of cooperative learning: "*teamwork*", "*puzzle*", "*puzzle-2*", "*dyads*". We are going to focus on the essence of these technologies in this article.

Let's start with "*Teaching in a team*". This method was developed at John Hopkins University. Most of John Hopkins's later variants, one way or another, use the concept of this original version. The success of the whole group can be achieved only as a result of the independent work of each member of the group in constant interaction with other group-members when working on the subject being studied. Thus, the task of each student is not only to do something together, but to learn something together so that each team member acquires necessary knowledge, shapes the skills and at the same time, the whole team could know what everyone has properly achieved. The whole group is interested in learning the information by each member, because the success of the team depends on the contribution of each to the overall solution to the problem.

This method is based on the following principles:

1. The team receives one for all "reward" in the form of a score, promotion, certificate, etc. To do this means to perform one task proposed for the whole group. Groups do not compete with each other, because all teams have their own level and the time to achieve it.
2. Individual responsibility of each student means that the success or failure of the group depends on each member. It encourages all members of the team to follow each other's activities and assist the group mate to assimilate and understand the material studied so that everyone could feel himself ready to be tested by any student outside the group.
3. The level of each student's success means that everyone brings the scores to his group which he gets as a result of improving his own previous results. The comparison, thus, is not done with the results of other students, but with their own, previously achieved results. It gives equal opportunities to strong, middle and backward students in obtaining points for their team, enabling to feel themselves full members and stimulating the desire to raise above their personal level.

The promotion of the whole team and the personal responsibility of each one are essential components of the successful formation of the necessary skills and abilities of each student in the group. It is not enough to give students the task to work together. It is necessary that they have

a really strong interest in everyone's success. In addition, promoting success is much more effective than encouraging students to compare with one another, because in this case, students understand that they need to improve their own results for the whole group.

To organize cooperative learning, the group is divided into teams of 4-5 students with different levels of knowledge. The trainer explains the new material, and then offers the students in small groups to discuss it, master and find all the details. Groups are given a specific task, which is divided into parts (each student performs its own part) or on the principle of "turntables" (each further task is performed by the next student; it does not matter strong or weak). While performing the assignment, each student explains the material controlled by the entire group.

After the trainer assured that the material was clear to all the students, he offers a test to check understanding and accepting. The trainer differentiates the complexity of assignments for strong and weak students. The scores for the tests are grouped and the general evaluation is announced.

The next technology called "Puzzle" is an original and effective way to organize cooperative learning. It was developed by Eliot Aronson and received the name "Jigsaw". Students are organized into teams to discuss the material, divided into fragments or so-called "logical blocks". Each member of the team gets acquainted with the educational material and selects the material of the fragment, which must be studied thoroughly. After self-study of the fragments, students studying one issue, but working in different teams, meet and exchange information as experts on the subject. This is called a "meeting of experts". After the meeting, students return to their teams and teach other members of their team. Those, in turn, report on their parts of the assignment (as fragments of "puzzle" game).

Since the only opportunity to learn the material of all the fragments and thus to know the whole subject is to listen attentively to team partners and make notes in the notebook, hence no additional effort from the trainer is required. Students are interested in their group mates to faithfully fulfill their task because it will affect their overall assessment. Each student individually and the whole team have to report on the topic. At the final stage, the trainer may ask any student of the team to answer any question on this topic.

There is a modification of the above method, called "Puzzle-2" ("Jigsaw-2"). According to this option, the whole team is working on the whole topic, but each member of the team is particularly careful to study one piece of the topic and thus he becomes an "expert" on the given issue. Meetings of experts from different teams are held. Team members teach each other, completing the knowledge gained during their independent work ("puzzle"). At the end of the cycle, all the students pass their individual control stage. All team members get the same score - the average score.

Now let's have a look at Dancero's model "Dyads". The work is directed by a trainer who is a source of information, a motivator and an observer. Groups (usually 4 persons) with common interests of participants are created for a long time. The work in dyads is directed at the development of cognitive abilities, academic and social skills, and others. To this end, co-operative, non-cooperative, individualistic structures are appropriate, depending on the purpose of the class (Johnson et al, 1994; Horton, 2005).

Another possible method of cooperative learning is "Let's take a position". The procedure for this method is as follows:

1. The classroom is placed with the posters at the opposite parts. One poster indicates "agree", the other - "disagree" (or posters indicate polar positions on the problems: for example, "the court is a law enforcement agency" or "the court is not a law enforcement agency").
2. The trainer reports the rules of conduct.
3. The trainer invites each student to become near the posters which slogan he shares.
4. The trainer invites students to substantiate their position.
5. After that, the trainer asks if the students have changed their opinion and if they want to move on to another poster. Each student must justify his change.
6. The trainer invites each of the participants for the most convincing argument of the other party.

These are the rules of the game "Let's take a position":

1. Talk one by one. Do not interrupt.
2. Do not argue with each other. Bring new evidence or ideas.
3. You can go from one poster to another at any time, indicating the reasons for changing your position. Listen to the arguments and ideas of others. Be prepared to name those which they liked

most.

Micro group and individual forms of work allow quickly and promptly to change pedagogical tactics under various conditions. The choice of the number of students depends on their level of preparation, the specifics of the tasks and the material being studied.

The following varieties of assignments as task-reflection, problem-reasoning, task-search, problem-solving are emotionally positive, and their implementation is carried out through cooperative learning. For example, students can be offered several fragments of different texts, based on certain philosophical statements that make the students analyze, express their own thoughts, understandings, opinions and positions.

The trainer selects excerpts from texts of different ages that contain thoughts about the norms of life and human cohabitation (for example, such a passage from the works by Komenskiy (2000): "*Our life is a road or a crossroads, similar to the Pythagorean "U". Its first path is wide, the second - narrow. The first is the road of debauchery; the second is the path of virtuosity. Follow the path of goodwill, patience to exaltation, to the level of honor. People are created for mutual help and support, so they must be human. Be nice and gentle, polite and correct in your manners and behavior, holy and truthful in your speech. Love, then you will be loved. Envy, which wants evil to others, eats itself*") (Komenskiy, 2000, p. 23-30). Students are expected to analyze this passage and comment on the reasons for it.

However, everything said above is only the *variety of techniques* (though based on the teaching experience). There are no exact scientifically proved data concerning the issue in question with regard to the development of cooperative learning of present-day Ukrainian university students majoring in Pedagogy (future university trainers).

Therefore, to suggest some recommendations as to that development, a special practical study is required to demonstrate clearly what the actual situation now is with the formation of future university trainers' cooperative learning (what benefits of these techniques actually are and what are the prospects of their implementation in academic process). Only after having determined that level, it is possible to give some recommendations as to further work and research in that direction. Such a study has been conducted by us and it is discussed in the remaining parts of this article.

3. Methodology of the study

The study was conducted at Alfred Nobel University, Dnipro, Ukraine. Cooperative learning was implemented during 2016-2019 at the time of studying the subjects "*Psychology of Higher School*", "*Pedagogy of Higher School*", "*New Technologies of Organization of Educational Process in Higher School*" among students of the specialty 011 "*Educational, Pedagogical science*". To carry out the study the control group (CG) (144 students) and the experimental group (EG) (148 students) were created. The results of both groups are scheduled to be compared at the end of the experimental study. But it was necessary to divide students into an EG and CG at the experimental stage of research (discussed in this paper) to make sure that students from both groups start participating in the experiment with equal initial levels of their communicative skills.

The control group worked under the traditional curriculum. The implementation of these technologies was aimed at forming the communicative skills for students, which we define as *an integrative property of a person, a set of communicative actions, based on a thorough theoretical, practical and technological preparation that allows using communication knowledge and skills creatively to reflect and transform professional communication of a higher education establishment trainer*. They focus on what the person acquires in the process of external (practical, pedagogical, communicative) activity, while developing internally under the influence of external factors.

Taking into account the views of the researchers dealing with the problems of professional communication, revealing the psychological, deontological and ethical issues of the trainers' activities, we identified the main groups of communicative skills: communicative and linguistic, interactive, moral and ethical (Table 1).

Table 1
Groups of communicative skills,
their components and criteria

Groups of communicative	Assessment criteria
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skills	
Linguistic	mastering professional terminology and standardized speech structures
	goals setting, choice of content, means of communication during professional interaction
	the ability to use language tools in accordance with the purpose and situation of communication
	planning and selection of relevant questions
	owning an optimal fluency, proper use of pauses and logical accents in messages
	awareness of a culture of speech, which involves meaningfulness, relevance, accuracy, logic and consistency, correctness and clearness, diversity and expressiveness of speech
	having a command of voice, that is, the ability to change the tone, force, rhythm and volume of the voice according to the purpose and conditions of the communication
	non-verbal communicative signals understanding
Interactive	selection of influence methods (personal example, explanation, persuasion, request, appeal, etc.) on communication participants
	feedback during interaction, owning attention (internal and external)
	self-control, self-regulation in any situation
	adjustment or change of communicative behavior if necessary
	establishing a contact with a student or a colleague
	settlement of conflict situations
	careful observation of partner's non-verbal reactions
	analysis and adequate assessment of own communicative activity during professional interaction
Moral and ethical	following the principles and rules of professional ethics and business etiquette
	awareness of own moral mistakes and the ways to correct them
	establishment of tolerant relationships during professional interaction
	creating a therapeutic climate
	demonstration of readiness and desire to listen to the interlocutor
	understanding the interlocutor's attitude to what he tells, and the very situation of communication
	demonstration of understanding of feelings of another
	empathy of the partner's status
	finding the necessary moral support for the interlocutor's words and arguments

The indicators to check the formation of each skill are selected: the level of skills, the level of their application in the varieties of professional communication, the attitude to modeling the diversity of professional communications.

We have highlighted the levels of communicative skills formation based on the mentioned indicators.

High level. The students fully possess the skills mentioned above, demonstrate the level of their formation in their educational activities, modeling different types of communication, strategies and tactics of interaction with various entities (group mates, trainers, employers), and positively related to modeling the diversity of professional communications.

Sufficient level. The students do not fully possess the skills mentioned above, they experience difficulties in educational activities, modeling different types of communications, strategies and tactics of interaction with various entities (group mates, trainers, employers), need to be encouraged to participate in modeling the diversity of professional communications.

Low level. The students show low level of formation of these groups of abilities, they experience significant difficulties in educational activities, modeling different types of communication, strategies and tactics of interaction with various entities (group mates, trainers, employers), they do not show enough activity in modeling a variety of professional communications.

Through observation of students' activities during cooperative learning in small groups, the trainers had to capture the ability indicating their intensity and systematic character.

The selected constituents, indicators, tools and procedures for the study allowed conducting it in practice and obtaining the required results for drawing conclusions, thereby solving the tasks set above.

4. Results and discussion

The level of forming communicative skills of each group was carried out by the scores system. The change in the levels of forming the groups of communicative skills for students of control and experimental groups is presented in Table 2.

With regard to the dynamics of formation levels of each group of students' communicative skills from each group, then we can state the following. In the process of diagnosis, it was found that in the control group the number of students having the high level according to all groups of skills is 22.3% (compared with 19.4%), then in the experimental group - 43.2% (compared with 20.9%). The increase was accordingly (+2.9 and +22.3).

Table 2
Change in levels of forming the groups of communicative skills for students of control and experimental groups

The level of skills formation	The group of students			
	Control groups (144 persons)		Experimental groups (148 persons)	
	Experiment stage			
	Confirmatory	Control	Confirmatory	Control
Communicative and linguistic skills (in %)				
High	18,1	19,4	20,9	41,7
Sufficient	42,4	41,7	45,3	48,0
Low	39,5	38,9	33,8	10,3
Interactive skills				

High	16,6	18,8	18,2	39,1
Sufficient	43,8	45,8	41,9	47,1
Low	39,6	35,4	41,9	13,8
Moral and ethical skills				
High	19,4	22,3	20,9	43,2
Sufficient	37,5	41,7	33,8	41,9
Low	43,1	36,0	45,3	14,9

This is due to the introducing into the educational process the cooperative learning technologies in small groups, which, based on professionally oriented situations, provided the manifestation of the personal position of future teachers during the interaction in the systems "student - student", "trainer - student".

5. Conclusions

The article reports the results of the final stage of the research devoted to studying and implementing cooperative learning into academic process of all university students and future university trainers in particular.

To summarize, the use of specific technologies of cooperative learning in small groups during the organization of students' educational activities significantly enriches the traditional university forms of lecture and seminar training with innovative creative methods, techniques, different kinds of activities and adds them a problem-heuristic character. It contributes to the enhancement of cognitive activity of students, the increase of their own professional level of awareness, development of emotional and value attitude to future professional activity. In addition, these techniques as components are included into almost all methods of modeling the professional activities for the university students.

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