

## A STUDY ON TEACHERS' ATTITUDES TO STUDENT-CENTERED LEARNING IN THE SCHOOLS OF TELAVI MUNICIPALITY (GEORGIA)

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**Abstract:** Dynamics of vibration, described by the equation of motion for a multiphase fluid in the form of the Kh.A. Rakhmatulin model, is considered in the paper. Analytical formulas for the steady-state flow of an incompressible fluid and the pressure distribution in the flow of dispersed mixtures are given.

**Keywords:** cavitation, vibration, end valves of the pipeline, cavitation formation, methods of multiphase fluid, dispersed mixtures, volume concentrations of the corresponding mixture phases, suction pumps.

In Georgia, the lessons after the education reform completely differ from those before the reform. The main ideological difference lies in the organization of the lessons, and their guidelines are also fundamentally different. In particular, a school reform has transformed teacher-centered learning into student-centered one, and the acquisition of factual knowledge has been replaced by the acquisition of dynamic and applicable knowledge.

As a result, building students' functional knowledge and improving their critical thinking skills is considered an important priority in Georgia's National Curriculum. The National Curriculum, in line with educational reforms, sees the person-centered education concept as a means of achieving the goals. The basic principles of teaching / learning are: the formation of knowledge, the provision of deeper learning, the creation of a positive environment in the classroom, an increase in the motivation and interest of the students as well as the consideration of personal and age characteristics (Basiladze, I., Chokhonelidze, N., Kostava, N., Kobuladze, N., 2016).

In general, person-centered learning is an educational process in which students' cognitive activity is crucial rather than just the process of knowledge

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transfer. According to the scientist Jinjikhadze, a "non-traditional tandem" emerges: not a teacher - a textbook - a student, but a student - a textbook - a teacher (Jinjikhadze, 2012).

In a student-centred classroom, a teacher has a great responsibility for how a lesson will be conducted. "A lesson cannot be amorphous, random. Every detail of its content should be considered in the dynamics (Jinjikhadze, 2012)." Thus, a teacher in this process of learning is a source of student activity.

The student-centered learning methods are based on the theoretical views of the American psychologist and teacher John Dewey, who made a statement about the high efficiency of students' self-solution of learning problems. The current education system of the world's leading countries is structured according to such principles and reflects the humanistic approaches in philosophy, psychology, and pedagogy.

**It is well known fact that behaviorists pay great attention to personal development. Humanistic psychology and pedagogy study the personality and individuality of students. The American psychologist Carl Rogers believed that man is constantly in the center of a changing world. Therefore, his views have also become the basis for student-centered learning, with the core values being:**

- For each person, self-perception of external reality is important, which is not fully understood from the outside;
- Self-perception of external reality, which is not fully understood from the outside, is important to each human being.
- An individual seeks self-awareness and self-realization. He /she has an inner need for self-improvement;
- Self-improvement and self-development depend on the interaction with the environment and with others; The external evaluation of a person is important for his/her self-awareness, which is achieved through direct and hidden contacts. (Rogers, 2008)".

It should be noted that in the process of such instruction, teachers are provided with new roles and functions. They are the organizers of a dynamic and positive cognitive activity of students. Professional skills and mastery of teachers are directed not only at monitoring students' knowledge and abilities, but also at diagnosing their learning and cognitive activity.

Obviously, student-centered learning includes differentiated approaches that take into account the level of students' intellectual and individual development.

**Thus, student-centered learning destroys old educational paradigms and sets the following new approaches:**

- the key person in the educational process is a student, not a teacher;
- cognitive activity is more important than just knowledge transfer or teaching;
- for a person's development, thinking, discussing, and researching together are the most important skills, not memorizing, revising, and reproducing (Jinjikhadze, 2012).

In Georgia, ideas for active learning began to develop in the 1950s, focusing on a student and his/her academic achievements and having many followers,

but the education system existing in the Soviet Union somehow hampered its formation. However, in modern education reforms, it can be said that active, student-centered learning takes precedence.

**Scientists hold the same view on the topic, that student-centered learning, which maximizes students' cognitive abilities, simultaneously provides them with both knowledge and general and transferable skills. The content areas of the National Curriculum of Georgia are also aimed at achieving similar results. For example, according to the plan, math education helps students develop the following basic skills:**

- critical thinking; the ability to find alternative ways and justify the correctness and effectiveness of the decision, as well as to explain and substantiate the conclusions drawn on the basis of generalizations or deductive reasoning;

- the ability to identify and formulate the problem even in non-standard situations (for example, if the mathematical procedure necessary to solve the problem is not explicitly stated);

- to critically evaluate the results obtained on the basis of the context and to investigate the marginal cases, and much more (National Curriculum, 2018).

Classifying the possible situations is a very interesting process, which implies that learning problems can be organized and solved by either teachers or students for active learning purposes. As different teaching practices confirm, at the beginning of active learning or considering the age of students, the role of the teacher in the classroom can be presented in large doses. At higher levels of education, however, students' activity comes to the fore as they engage in this type of education and raise and identify problems.

It has been proved that the students' thinking in the classroom can be stimulated by the following factors:

- incompatibility of information
- surprise
- guess
- refutation
- irrelevance
- uncertainty (ambiguity)
- problematic narration
- heuristic conversation
- demonstration
- problematic tasks, and much more.

**Using special psychological methods, a teacher consciously creates situations that make students to think. For example, he/she can do the following:**

- formulate different opinions on the same topic;
- give the whole class the opportunity to look at the problem from different angles;

- create classroom challenges and then encourage students to find solutions to the problems, etc. (Bochorishvili, 2017).

What steps are needed to create an active, student-centered learning environment? Students have to complete the following tasks:

1. identify the problem; briefly describe the problem (interpret a chart, a formula, a table) using the WH-questions -what? how? when? where? why?- and present it in a convenient form, for example, orally and /or visually;
2. collect relevant information and resources related to the problem and mobilize knowledge; At this stage, information about the problem is selected, and what is known and what needs to be solved is determined;
3. identify the possible causes of the problem;
4. consider various strategies and methods for solving the problem; Then choose the best way to solve the problem and make a plan.

It is particularly important for the teacher to follow these steps as they determine how well the next task is done and whether students and teachers are able to achieve the desired result.

As can be seen, the teacher plays the role of a facilitator in the implementation of student-centered learning. In the wake of the gradual cognitive development of the students, the involvement of the teachers decreases at first glance, but their role in the classroom is never insignificant. On the contrary, the effort of a teacher in preparing such a lesson increases as it requires a lot of work from them. Therefore, we found it very important to study the attitudes of teachers towards a student-centered learning organization.

The study we planned was conducted from February to March 2019 with the participation of 55 respondents from 10 schools in the municipality of Telavi. We used quantitative research to make the study results representative (a representative sample of respondents scientifically substantiates the distribution of survey results for general consolidation, so we can view the respondents' answers as an opinion of general consolidation). The selection of respondents was random, intended for a survey among science teachers of Telavi municipality secondary schools.

55 out of 110 science teachers from the town Telavi itself and the villages of the Telavi municipality were selected. The survey was conducted with 95% reliability.

**As mentioned above, the survey was carried out both in the schools of town Telavi itself and in the village schools of Telavi Municipality, which allowed us to systematically investigate and understand the problem. The research was diagnostic and analytical in character. For this purpose, we used a structured questionnaire based on the attitude/interest model (SoC questionnaire) by Fuller (Fuller, 1969), Hall and Hord (Hall & Hord, 2006). The questionnaire consisted of ten provisions related to student-centered learning, the main purpose of which was to study science teachers' attitudes to student-centered learning. The questionnaire used a five-point Likert scale so that the teachers had a wide choice to show their attitudes to each of the survey's provision/ question. The agreement of the provisions with the gradation was as follows:**

- 5 - At present this provision is fully in line with my opinion;
- 4 - At present, this provision is basically in line with the opinion;
- 3 - At present this provision partly corresponds to my opinion;

2 - At present, this provision almost does not match my opinion;

1 - At present this provision does not at all correspond to my opinion.

As can be seen, there is a small difference between the answers to paragraphs 5 and 4, and we believe that we can arithmetically summarize the percentages of teachers' responses to these questions to reveal their common position. For example, 75.9% (53.7% + 22.2%) of respondents are in favour of the first provision: "I would like to know how to plan and conduct student-centered learning". High readiness is expressed by the teachers to the second provision: "I would like to know where to get advice for the planning or implementation of student-centered project lessons" with a total of 72.2% (40.7 + 31.5) . And, 77.8% (53.7 + 24.1) of the surveyed teachers feel that "further information on the effective planning and implementation of student-centered instruction is desirable".

Regarding the fourth and the fifth provisions, "I reflect on the impact of teaching on students through modern methods " and "I find it interesting to see how using different approaches and methods can contribute to students' success", a large number of teachers - 81, 4% (44.4 + 37%) and 94.4% (64.8 + 29.6%) respectively- expressed full support, which was quite adequate, given the 15-year education reforms and the requirements of modern education system.

Effective implementation of student-centered learning, with its own pros and cons, is a long, varied and tedious task for teachers. Therefore, according to teachers' responses, the majority of them seek collaboration and exchange of experience with colleagues, expressing a high willingness to respond to the following research provision: "I would like to work with colleagues during lesson planning in terms of applying modern teaching methods" - with a total of 88 9% (63 + 25.9%).

As can be seen, the theoretical willingness of teachers to engage in a student-centered educational process is very high, but if we turn to the practical part of the attitude, their high potential is still visible, but it gradually decreases; 75.9% (42.6+ 33.3%) of teachers are in favour of the provision: "I think a lot about where to find materials related to the concept of student-centered learning and I have no idea how to use the materials available to me in student-centered instruction; 68.5% (42.6 + 25.9) of teachers support the provision: "When planning a lesson, I take into account the interests of students". Finally, it is worth noting that the percentage of teachers using various learning strategies is very low : "Project-based learning is my strongest side" - 14%; "Problem-based learning is my strongest side" - 13%, and "Inquiry-based learning is my strongest side" - 19%.

Thus, the attitude of science teachers towards person-centered educational processes is quite positive, and their responses to the questionnaire provisions confirm their full support. Although the activity of teachers in creating an active academic environment is not as high in percentage as their desire to participate in this process, their motivation to participate in it and to lead active, student-centered learning is obvious. That seems logical; On the one hand, current

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reforms in the education system influence the direction of the education process and lead to reforms, on the other hand, in some way, they force the teachers to change their mentality in this way. For this reason, teachers are convinced of the need for such processes and develop a positive attitude towards professional activities that meet current needs.

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