

Interactive Teaching and Learning: A Constructivist Approach

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The world is rapidly changing – it has become extremely complex and unpredictable, and new challenges, risks, and threats are emerging. And how does the modern education system respond to the changing world? Traditional education can no longer withstand the pressure of time.

Traditional Education: A Teacher-Centered Approach

Many adults have little memory of what they were taught at school or even in college. This is largely because they were passive participants in the learning process, and the knowledge that was given to students made little sense to them.

In traditional education, the teaching model is quite simple: there is a teacher, a student, and a certain knowledge transmitted from the teacher to the student. Such a model represents a teacher-centered approach since the teacher is the main acting body and everything in the classroom happens around the teacher or with their participation. A teacher is a knowledgeable person and has unquestioned authority. Students, of course, can ask questions, but only within the framework of the established regulations and with the approval of the teacher. A good teacher can successfully convey the necessary portion of knowledge to the students. It's not good if the teacher doesn't know something within the framework of their subject, and it's embarrassing if they admit it. The teacher is also the embodiment of justice: good students receive high grades and deserve praise from them, while poor students get failing grades and criticism. Let the students memorize and remember the material, the main thing is that they show that they have mastered the knowledge if they are asked about it. There were times when sticks or hands were used, but everything, as they say, was for the benefit of the student – so that they could acquire the knowledge they were entitled to.

What's Wrong with the Traditional Model of Knowledge Acquisition?

Certainly, there have been and continue to be many wonderful teachers who inspire their students with their personal qualities and knowledge. But overall, in the modern world, the traditional, teacher-centered model of teaching and acquiring knowledge has been found to have many shortcomings. It turns out that even those who have learned the necessary volume of knowledge often forget a lot. And most importantly, the knowledge gained in school or college often does little to help in life and professional activity, especially in complex, unpredictable, non-standard situations, in an environment that requires creative thinking and innovative approaches. In a traditional classroom, students are relatively passive, and the lack of motivation negatively affects their learning. All kinds of formal knowledge assessments evoke a formal attitude towards education. And multiple-choice tests, instead of developing creative thinking, narrow it down to a rather dull task of choosing between given answer options. Critical thinking of a schoolchild or student often raises suspicion among teachers and administration who are geared towards the traditional way of learning.

But the time in which humanity lives and the tasks it now faces increasingly require fundamental changes in the process of teaching and learning. People are increasingly realizing that to cope with new challenges, it is necessary to be active and creatively solve complex problems. To be successful in the 21st century, many countries have begun a serious search for new models of education, including more effective methods of teaching and learning. Perhaps the well-known example is Finland. Finnish achievements and innovations in education are now widely recognized, and the country is considered one of the best in the world in terms of the quality of school education.

In Finnish schools, primary attention is paid not to the grades of students, but to the development of their critical thinking, problem-solving skills, and practical application of knowledge in life. In Finland, all students are treated equally, “good” and “bad” students are not distinguished, their individual differences are considered, and schoolchildren are encouraged to work together in

groups. There are no grades in the lower classes, and in the upper classes, a mainly oral evaluation is used, as well as more flexible and lenient grading systems (for example, twice a year schools send reports and evaluations of children's studies home to parents). There are no exams, except for one that is held before completing school education. Recently, even the division of the educational process by subjects has been abolished: the educational process is now built around specific themes and project completion. For example, problems of climate change, globalization, or immigration. This helps to create a big picture and prevent fragmentation of knowledge.

The position of teachers plays a big role in the success of Finnish schools. The profession of a teacher in Finland is one of the most prestigious and well paid. There is high competition among university applicants who want to become schoolteachers. To teach in comprehensive schools, Finnish teachers must have a master's degree. Teachers are not tortured with various tests and assessments of their knowledge: they are trusted. They are not distracted by extraneous matters. Teachers try to involve all students without exception in discussions and group activities. They are least concerned about assessing students' knowledge and punishing poor academic performance. Many fields works and excursions are organized.

But how can we achieve high learning outcomes and maintain interest in learning among students without grades and punishments for unsatisfactory performance and bad behavior? One of the approaches gaining popularity worldwide in the teaching and learning process is called constructivism, or socially determined constructivism. The Finnish system of school education is largely based on this approach.

Constructivism in Education: From Monologue and Instruction to Dialogue and Construction

Humanity has always been seeking effective systems of teaching and learning, and such searches continue to this day. The works of Jean Piaget¹, Lev Vygotsky², Jerome Bruner³, and many other scholars have contributed to the development of the constructivist paradigm in education (Bada 2015; Bransford, Brown, Cocking 2000; Brooks and Brooks 2001; English, Keinonen, Havu-Nuutinen, Sormunen 2022; Taber 2011; Taber 2019).

Socially determined constructivism posits that knowledge is actively constructed through social interaction – through dialogue between the teacher and the student, as well as among the students. However, the role of the teacher is changing, and now he or she does not act as an instructor, but rather as a mentor and facilitator of the student's knowledge development.

The constructivist approach is centered not on the teacher, as in traditional education, but on the student – it is a student-centered model. In the process of learning, teachers also become learners: for them, each lesson is an exciting process of joint learning, a common journey into the world of knowledge. The volume of modern knowledge is so colossal that even the best specialist cannot know everything. And when answering a difficult question, the teacher can now openly and without embarrassment admit that they do not know the answer but will be happy to make joint efforts with the students to learn. A good form of such search is working on a group project, on some specific problem. And it is important that this problem is significant and meaningful for those who are learning. It is also crucial that new knowledge is built on the basis

¹ Jean Piaget (1896-1980) was a Swiss psychologist known for his work on cognitive development in children. He proposed that children go through four stages of cognitive development, each marked by distinct changes in their thinking abilities. Piaget believed that children actively construct their understanding of the world through their experiences and interactions with their environment.

² Lev Vygotsky (1896-1934) was a Russian psychologist who is best known for his sociocultural theory of cognitive development. He believed that children's cognitive development is shaped by their social interactions and cultural context. Vygotsky emphasized the importance of social interaction, collaborative learning, and the role of language in cognitive development.

³ Jerome Bruner (1915-2016) was an American psychologist who made significant contributions to the study of cognitive psychology and educational theory. Bruner believed that people learn best when they are engaged in a process of discovery and exploration, and that education should focus on helping learners to construct meaning and understanding for themselves.

of students' existing knowledge, experience, and attitudes. Otherwise, students will not be able to learn.

Everyone has their own idea of the world and the events taking place. Teachers should learn about students' conceptions and their views of the world/issues. To explore what students already know, the teacher encourages the students to ask questions, including to each other, and elaborates on their views. When the teacher says from the very beginning what is right and what is wrong, that is, imposes their own views on students, this suppresses the students' independence and critical thinking. Instead, a constructivist teacher encourages and supports discussion for collaborative learning.

In a constructivist class, learners are active and liberated, they can freely discuss, express themselves, their attitudes towards the discussed issues, bring their personal experience into the learning process⁴. The teacher avoids closed questions that require only a "yes" or "no" answer but uses open-ended questions that encourage the student's thinking activity and make sense of the learned. And all of this happens in group interaction, in the mode of social interaction and active dialogue.

Each lesson in the constructivist spirit represents an attempt to solve problems. In joint problem-solving activities, the problem should be interesting, meaningful, and represent a certain challenge. Lectures retain their significance, but constructivist teachers saturate them with interactive elements.

⁴ We can refer to such forms of joint learning as discussions, exchange of ideas and observations; debates; analysis of cases and events; role-playing and simulations; group projects and presentations; joint problem-solving with the use of brainstorming and other problem-solving techniques; collaborative work on puzzles and paradoxes; experimentations; fieldwork; Socratic dialogues in nature (and while walking); excursions; watching documentary films or movies with further discussions; theatrical performances.

For the constructivist class, it is of great importance to the learning environment: it should be collaborative, supportive and respectful. Creating such an atmosphere that encourages students to think and explore is one of the most important tasks of a teacher.

In a constructivist education, students and teachers create a learning community. Members of the community have a high motivation to learn, and a desire to jointly seek answers and make discoveries.

Social constructivism can be a valuable methodology for constructing knowledge in online education. Many modern online classes aim to create an interactive learning community. In terms of communication intensity between the teacher and students, as well as between the students, online classes can even surpass traditional classes: members of the online learning community can constantly interact with each other through messaging, video or voice conferences, discussions of various articles, books, or cases. Learning groups on social networks, such as Facebook, can also work on the same interactive principle, helping their members construct knowledge together.

Constructivist learning encourages critical thinking, independence and responsibility of students, their ability to express their own opinions, and use multiple modes and channels of learning such as a sensory sphere, visual images, and body language. The teacher motivates the students to be active, not to be afraid to use previous knowledge and life experience. The opportunity to speak freely, express one's own opinion and have critical thinking helps to avoid the groupthink effect, that is, the pressure of the group on the participants.

Constructivism does not exclude the assessment of learning outcomes, but such assessment takes into account the student's participation and progress in the learning process. It is very important that the process of learning is filled with meaning for the learner, and the knowledge has value for them. Mechanical learning and memorizing material are contrary to the spirit of constructivism.

Constructivism in education requires teachers to have new skills and abilities. This includes the ability to encourage students' independent work and develop their critical thinking and creativity, engage them in collaborative activities, and create a stimulating atmosphere for learning. A teacher is no longer simply imparting knowledge but helping students to develop it, acting as a mediator in the learning process. The important task of teachers is to make the process of learning understandable and meaningful.

Nowadays, teachers must constantly learn and conduct research, otherwise, they will not be able to organically fit into the knowledge community. If a teacher is not good communicator, they will not be able to motivate students, engage in innovation, organize an exciting and meaningful learning process for their students, and will not be able to be a successful and important member of the learning community.

A teacher is a leader in the learning community, but their leadership is not authoritarian, does not aim to assert their own vision and understanding of the world, and does not suppress students' independent thinking. The teacher's leadership appears through engagement, motivation, nudging, and support of the students.

Constructivism in education promotes an individual approach to students. It is believed that each student is a unique individual with their own personal, cognitive and emotional characteristics, and even their own style of learning. An effective learning community cannot be built without respect for individual differences of the members.

In conclusion, I would like to point out the main elements or starting points of the socially determined constructivist approach to education:

1. Constructivism in education represents a student-centered approach.
2. Learning is an active process.
3. Knowledge is constructed.

4. Knowledge is constructed in social interaction, in a dialogue between the teacher and students as well as between students.
5. Students acquire new knowledge on the basis of their existing knowledge, experience, attitudes and worldview.
6. Students' motivation and understanding as well as the meaningfulness of knowledge are essential for their learning.
7. Teachers act primarily as facilitators and mentors; they need to create a cooperative and supportive atmosphere and encourage independence, initiative, critical thinking, and creativity in the students.
8. Small groups are especially effective for the constructivist learning process.

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