

# STUDENT CENTRED LEARNING

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## **Definition(s)**

There are several ways that student-centered learning can be described, and they all lead back to the same basic idea, the student. First, student-centered learning can be defined as a discipline that involves the interaction of a team of students that experience creative learning to be used in the real world (Thornburg, 1995). Thornburg (1995) also mention that students are essential to the classroom, just like a team member is essential to a game. He says that teachers are part of the definition of student-centered learning, but they are not the main attraction. The students are the focus, and the teacher is the one who can assist among small groups of students. Eaton (1994) describes student-centered learning as the opposite if "teacher-centered". Another way of looking at student-centered learning is that the goals of a system (school) should meet the goals of the students (Harmon, & Hirumi, 1996). Next, the definition that naming students as "partners" with teachers in education can be part of the student-centered learning process (Alley, 1996). Lastly, Csete and Gentry (1995) use the term "learner controlled instruction" instead of a student-centered approach. Learner controlled instruction can be termed as when the learner has some control in the type of instruction that is given. The control factors can range from "procedures" to "time restraints" to "evaluation". The point is that each student's needs are different and in student-centered learning and learner controlled instruction the learner can decide how and what they want to learn, to function in the real world.

## **Methods and Materials used in Student-Centered Learning**

Harmon and Hirumi (1996) mention that first research and development is essential when implementing student-centered learning. Research and development helps with predicting the cost and the effectiveness of the approach on the system. The idea is that the research and development will increase students' future accomplishment.

The first approach of student-centered learning that will be discussed is a teaching method called the Learning Cycle. A study was done with fifth grade students learning about sound. There were some students who were taught using the Learning Cycle, and some students were taught using the textbook approach. To see which method produced a greater understanding of sound the students were randomly selected, and an interview method was used in both groups to see what the students previously knew about sound. Then, in the

instruction part of the procedure an instructor was used in both methods. In the Learning Cycle approach there were three phases: "exploration, concept introduction and concept application". During these three phases the students worked together in-groups while discussing their ideas and using manipulatives to act out the concepts. Also, the teacher would act as a facilitator, while the students discussed their ideas, and created more ideas and situations to figure out. During the lessons, the students were in active control and they could lead the lesson with their ideas and conclusions. The students were very excited to work together and the groups encouraged some of the students to share their ideas more willingly (Barman, & Barman 1996). Dinan and Frydrychowski (1995) mention that an adequate size of a groups for student-centered learning can be five to six heterogeneous (academic ability, gender, etc.) students. The students wanted to participate in the discussions, and they could direct their comments when they wanted. In contrast, in the textbook approach the teacher would lecture and the students would listen. As a result, the students that were taught using the Learning Cycle approach could explain the sound phenomenon more accurately, and they had a better understanding of the ideas. In this study, the Learning Cycle is an one example of a student-centered learning method that is effective for all levels of students (Barman, & Barman, 1996).

Another student-centered learning method was with an organic chemistry group of high school students. Dinan and Frydrychowski (1995) had their heterogeneous groups of five or six students (the students formed the groups) decide on a relative weights of the grading scale. Then all of the groups came together to come to a decision on the grading scale, as a class. This way the students had control, and everyone had a voice, at some point. Then the teacher gave the assignment, and each group got a "learning guide" with specific readings, a problem, and objectives the students needed to achieve. The student got to right to work after receiving the assignment, and the teacher acted as the facilitator. When the learning guides were done, the teacher gave the students mini tests and examinations that were open for discussion and rebuttal. Also, evaluations were given for each member of the group concerning others in the group. One of the evaluations is actually part of the student's grade at the end of the semester. The results of this process were successful because the students could handle the responsibility. The students also motivated each other in their groups and they learned to handle conflicts and problems that came up when working with others. Lastly, friendships were formed with students from different backgrounds. Also, this method was positive for the instructor. The students came to class, and they were prepared to learn. In conclusion, of this study, the students were to learn chemistry in a more effective manner while learning responsibility and friendships in a student-centered learning, team atmosphere (Dinan, & Frydrychowski, 1995).

Another procedure and tool to student-centered learning is Notebook Programs. These tools are portable computers that take the place of the three ring binders, and they are used in the classroom and at home. For some students, learning is right at their fingertips. Once again the students are enthusiastic about having the control of looking up information. Using this technology has shown to increase critical thinking, problem solving and higher level thinking skills, with students, while they work on the lessons or do their research. The teachers now have more time to aid in instruction and provide more one-on-one assistance. Also, when the Notebook program technology, versus not using the programs, is used in student-centered learning, the teachers have seen better work and more accomplishments with the students, (Heasley, 1999).

Harmon and Hirumi (1996) point out that when setting up the distance learning, student-centered environment, the instructor should be involved in the "developing, implementing and the evaluating" of the material to be presented. Harmon and Hirumi (1996) go on to say that in student-centered distance learning, the students are no longer viewed as "empty vessels" that the teachers just fill up with knowledge and information. In contrast, they mention that there is a two-way system in student-centered distance learning, where the students are taking in the information with interaction from the teacher and other students. Then the students relate the material to what they already know and construct their own innovative ideas.

Tapscott (1999) refers to the students who use the technology at the N-Geners or students that are part of the Net Generation of student-centered learning. Although Tapscott speaks highly of the computer as a learning resource, he also mentions how "the most potent force for change is the student themselves" (Tapscott, 1999). He goes on to discuss how these days children are surrounded by all sorts of technology such as computers in the home, video games, CD - Roms, and the Internet, etc (Tapscott, 1999). Also, Alley (1996) discusses how there Integrated Personal Access Systems available to students with a computer, along with Web page software and a two way video system (Alley, 1996). These technologies are very different from the ones the teachers knew when they went to school like the iron and a VCR. In fact, the Internet is a great way for students to use virtual realities to explore museums or an operation in session. Students may get hesitant when they can't figure out a certain program, but they seem to stay at it and continue to learn about everything from money and geography to sports and famous people. Students need this exploration on their own, so they can develop their critical thinking and social skills at the same time. Studies have shown that with a student-centered learning Web-based class, the students scores higher on the assessments The group idea with student-centered learning is also involved with these NetG students because they are able to work together and "e-mail" each other. The technologies that are used have also created another

level of education. The students can now account for their own learning. The students can be flexible in the fact that they can determine how and when they learn (Tapscott, 1999). New and faster ideas and innovations in technologies have helped promote student-centered learning by allowing the student to research the problems and solutions, and the teachers are consistently there for the students as help agents (Harmon, & Hirumi, 1996). When students are given a device like technology, they can guide themselves in the direction of learning (Tapscott, 1999). This student-centered learning with technology has proven in this study to improve learning. Lastly, as these programs become more popular in the world the student will be able to deal with a tool that continues to grow in us, in the real world...aka... the child's future (Heasley, 1999).

### **Limitations and Concerns with Student-Centered Learning**

There are some limitations and concerns that researchers have found with student-centered learning. The concerns and limitations are not necessarily negative or positive. First, there is the actual words "student-centered learning". When these words are used, does it mean that we are ignoring the teacher? A classroom needs to consist of both teachers and students to function effectively, in any school. The way a classroom utilizes the saying student-centered learning is what makes a successful environment for the students (Eaton, 1994). Next, another concern is when students are involved in the student-centered approach with one teacher and then a more textbook approach with another teacher. The students need to be flexible because not every teacher has the same classroom. It may take adjustment from one process to another, but the main objective is for the students to learn the information. Hopefully, the non-student-centered approach, if used, does not delay the understanding of information (Barman, & Barman, 1996).

Another concern with the student-centered learning approach is when technology is used. People question whether the computer will be "safe" in the hand of the students. Schools are questioning whether they will have to have IT people on duty to help with the problems. This will also cost money. Schools have been finding solutions by having a rental system or other systems that the school create. Moreover, the students are taking on responsibility with technology when the student-centered learning approach is used (Healy, 1999). Another concern with technology is if students are becoming dependent and then frustrated when using technology. Also, educators and parents want to know if students are losing social skills and not listening to parents because they are always on the computer (Tapscott, 1999). Tapscott (1999) implies that people should not worry. Students are fine. They are interacting with others, and their attention span has not declined. Then, on the technology side Harmon and Hirumi (1996) report how when trying to infuse distance education in the

student-centered environment there are issues like trying to keep up with "the best" hardware and software, not enough support for technology, and not enough training and time for the instructors. As a result of these issues, the approaches to teaching need to work together as a system, and distance education is a way for the system to be successful in a student-centered learning environment (Harmon; Hirumi 1996).

Lastly, a concern that some educator and parents may have when the student-centered learning is discussed is that the teachers themselves may not be familiar with that type of instruction because they were not exposed to the process when they were in school. Therefore the teachers are intimidated by the approach. Proper training and experience can help to solve this concern. The teachers have to be dedicated to learning the procedures (Dinan, & Frydrychowski, 1995).

### **Summary of Shifts and Trends to Student Centered Approach**

There have been many shifts when implementing the student-centered classroom. The main shift which has been mentioned is that the center of the classroom is not the teacher anymore, it is the students (Thornburg, 1995). Tapscott (1999) says that educators are examining student's learning styles and they are evaluating material that will not only involved the teacher, but the student, as well. The teacher's role can be more of a facilitator, and the students can "access, interpret, organize, apply, and transfer information to solve problems" (Harmon, & Hirumi 1996). Alley (1996) discusses how recent social factors, and learning functions in the brain can have an effect on the "sage-on-stage" to the "learner on-stage" model in education (Alley, 1996). Next, it used to be where all of the teacher's lesson were linear, but now with the student-centered approach students can learn in a non-linear fashion by using interactive, discovery methods. The use and improvements of technologies like the computer, multimedia programs (Thornburg, 1995), and distance learning (Harmon, & Hirumi 1996) are also shifts from the teacher-centered approach to student-centered approach. The students now like to learn because of the technological influences in the schools (Thornburg, 1995). As a result of these strategies to student-centered learning, school is not just a small period in a child's life, it is "lifelong learning", and each student can learn what is important to them (Thornburg, 1995).

In conclusion, the shift to schools using the student-centered approach lets students take on a proactive role by working with others, using a variety of resources, and learning and evaluating skills on a continuous basis that they can use throughout life (Alley, 1996).