

Teaching/Learning Strategies/Approaches

The Learner-centred Environment

Teachers who appear to be integrating the use of computer technology most effectively in their classrooms have made a significant departure from what has been the traditional approach to teaching and learning, based in the "technical rational" view of teaching. It involves a switch to a learner-centred strategy. Again, the respondents from France most often mentioned organizing the learning environment in their classrooms around such approaches, although other literature indicated the adaptation of such practices in North America as well. Specific mention was made of sessions of autonomous work, student contracts, constructivism, Freinet and the development of cross-curricular projects.

Autonomous Work

One teacher reported organizing his teaching around periods of autonomous work of one to three hours duration depending on factors such as the students' ability to apply themselves on that particular day. The arrangement appears similar to using a centre approach in that there are a number of activities from which the students choose, one of which involves use of the computer. A due date is established in advance, ten days for example, and the students are encouraged to work wisely and efficiently, or else face the prospect of more work to complete at home. During these sessions, the teacher offers various types of support such as guidance in the use of time and resources and provides assistance to those in need.

Contracts

A number of sources from France mentioned employing student "contracts", generally, decided upon on a weekly basis. A plan would be made regarding what each student would be responsible for completing at the end of that time period, and arrangements would be made to ensure access to the appropriate resources, a setup somewhat similar to the use of autonomous work periods mentioned above.

Cross-curricular Projects

The development of cross-curricular projects structures learning on a whole language approach, helping to avoid the segmentation of curriculum. Learning founded in an inter-related manner, appealing to various modes of learning and expression, makes it more meaningful to the learner as well as more likely to be retained.

Constructivism

Constructivism is based on this cross-curricular project approach. The premise is that learners construct or interpret their own reality based on their perceptions or experiences. The teacher is charged with designing an environment in which the learner can construct and share this knowledge, in a meaningful and authentic context. (see Appendix C for on-line sources of information)

Freinet

The Freinet method of teaching is a system which places high value on democracy, freedom of expression, communication, and work that is meaningful for the student. It was developed by the French educator Celestine Freinet and appears most popular in Europe. The child is perceived as being of the

same nature as the adult, thus the teacher and the students participate with equal rights in developing an appropriate learning environment, based again, on group efforts. (see Appendix C for on-line sources of information)

Common Element

The common element of course, is that the students become more responsible for their own learning, developing their awareness of the availability of a variety of resources and their ability to access them. The teacher's role changes from that of a purveyor of knowledge, "the sage on the stage", to a facilitator, "the guide on the side", (Armstrong, 1995) who helps the students learn in a more personally relevant manner. The computer becomes one of the tools that helps in the discovery, the organization and the sharing of this learning. This is consistent with the observed trend towards using computer technology as a tool as opposed to a tutor. The value of this teaching/learning method is recognized in the US Department of Education report, mentioned previously.

The following excerpt from the Executive Summary of that report, provides an excellent synopsis of the key features of this approach as well as the perceived benefits. It also reinforces the assertion observed in the introduction of this paper concerning the metamorphosis of the nature of the classroom as we have come to know it. Cooperative group work is seen to be an essential element in the successful exploitation of technology in the classroom.

The Vision: Technology-Supported Constructivist Classrooms

The model of constructivist teaching that motivated our research design has student involvement in complex, meaningful tasks or projects at its core. Once a commitment is made to structuring the classroom around such projects, nearly every other aspect of pedagogy must change as well. Projects with real-world relevance will nearly always be multifaceted, incorporating both higher-order skills, such as design, composition, and analysis, and more basic skills, such as the mechanics of writing. They will also nearly always be multidisciplinary in nature and will require extended periods of time to complete. The very complexity of the task will make it advantageous to have students work on them in groups, resulting in a greater emphasis on teamwork and collaborative skills. Heterogeneous roles will tend to emerge as students tackle different portions of the project. Teachers will design the overall structure for project activities and provide the resources that students need to do them, but students will have much more responsibility for their own learning and for producing finished products that meet high standards. Teachers will function as roving coaches, helping individual students or groups over rough spots and capitalizing on the "teachable moment" within the context of the students' engagement in their work. In short, when instruction is organized around complex, authentic projects, there are strong pressures to break away from the discrete academic disciplines, repetitive drill, short periods of instruction, and teacher-led lessons that have been the hallmarks of American education for so many years. (Means and Olson, 1995)



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