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experience based activities(Jonassen, 1991). The important application of the constructivistic view of learning is theprovision of instruction in relevant contexts. Learning should occur most effectively incontext. The context becomes an important part of the knowledge base associated with thatlearning. Brown, Collins and Duguid (1989) stressed the distinction between authentic andschool activities. When authentic activities are transferred to the classroom, the context ischanged and the tasks become classroom tasks instead of real tasks. As a result, they state,conceptual and problem-solving knowledge acquired in school remains largely unintegratedor inert for many students. Learning should be adjusted to the situation in which it takesplace. Instruction should provide for a relevant context. The contributions of the symposium elaborate on the changes in instructional design theoriesand how the changes influenced the actual design of instruction. The results of the researchaddresses the effects of the instructive environments, both retention and transfer.

THE INSTRUCTIONAL DESIGN, STUDENT ACTIVITY, DISCOVERY LEARNING AND TEACHING TO SOLVE PROBLEMS

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Summary
Recently traditional instructional-design theories and models, which are developed frombehavioral learning theories and from general educational problem-solving models, arecriticized. The traditional theories and models were too analytic and unable to teachintegratedwholes. The analysis of the subject matter or the target behavior of the students usuallyresulted in different outcomes of instruction such as facts, concepts and principles. For eachof these categories a further analysis was made and the components of the outcomes wereformulated such as attributes and relations. The results of the analysis were used to designand sequence the instructive frames. The emphasis was on the presentation of information orexternal conditions for learning rather than on what the student should do. Thereforetraditional or first generation instructional design was only seen as a tutorial approach whichsupposed the students to be passive and which was insufficient to design the teaching ofproblem solving activities. This paper will try to link the knowledge of human problem solving with recentdevelopmentsin instructional design. It will address the issue of the analysis of the target objective, howdetailed this should be done and how the resulting components can be used to formulatequestions and problems which stimulate the student's activity, enhance the formation ofcognitive networks or schemata and in some situations lead to discovery of problem-solvingprocedures. The tutorial approach will be compared with an experiential approach that fordifferent types of content can realise continuous transactions with subject matter. Attentionwill be paid to understanding and applying knowledge in solving complex problems.