Integrating Self-Directed Learning and Contextualized Tutoring — A Research Agenda for Educational Reform

Gerhard Fischer

Presentation, L3D Meeting, April 21, 2004
Objective: Beyond Binary Choices

♦ Jerome Bruner: “students need enough freedom to become cognitively active in the process of sense making, and students need enough guidance so that their cognitive activity results in the construction of useful knowledge”

♦ basic assumption: self-directed learning and tutoring both have their strength and weaknesses

♦ objective / vision: integrating the two approaches including
  - providing support mechanisms for self-directed learning and
  - contextualizing tutoring to the task at hand and
  - supporting this approach with effective media, technologies, and human infrastructure,

◊ powerful learning environments can be constructed fitting the needs of the learning societies of the future
# Some Distinctions and Complementarities

<table>
<thead>
<tr>
<th></th>
<th>Tutoring</th>
<th>Self-Directed Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>strengths</strong></td>
<td>focuses on organized body of knowledge; pedagogically and cognitively structured</td>
<td>focuses on real interests, personally meaningful tasks, high motivation</td>
</tr>
<tr>
<td><strong>weaknesses</strong></td>
<td>possibly limited relevancy to the interests of the learner or the task at hand</td>
<td>coverage of important concepts may be missing; demand driven, unstructured learning episodes; lacking coherence</td>
</tr>
<tr>
<td><strong>planning versus situated responses</strong></td>
<td>advanced planning of learning goals and content; problem selected by the teacher or system; prescriptive</td>
<td>learning needs arise from situational context; problem is based on personal goals of the student; permissive</td>
</tr>
<tr>
<td><strong>importance over lifetime</strong></td>
<td>in progression from k-12 school to university to lifelong learning, need for tutorial guidance decreases in importance</td>
<td>from k-12 school to university to lifelong learning, self-directed learning increases in importance</td>
</tr>
<tr>
<td><strong>some unique research challenges</strong></td>
<td>presentation of organized bodies of knowledge; responsiveness in the teacher-defined context to individual differences</td>
<td>task identification; context awareness; need for large number of situation-specific tutoring episodes</td>
</tr>
</tbody>
</table>
Organizers/Speakers, Speakers, and Discussant

Organizers/Speakers
- Sharon Derry, University of Wisconsin-Madison
- Gerhard Fischer, University of Colorado

Speakers
- Allan Collins, Northwestern University
- Ken Koedinger, Carnegie Mellon University
- Mitchel Resnick, MIT Media Lab

Discussant
- Roy Pea, Stanford University