

de Jong, T.; de Hoog, R. & de Vries, F.
 Coping with complex environments: the effects of providing overviews
 and a transparent interface on learning with a computer simulation
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Purpose of the study	Hypothesis	Participants	Instruments and Data Analysis	Design and Procedures	Findings
<p>The aim of the study is to investigate the influence of two representation aspects of simulation environments on the way of interacting with a simulation and on resulting test performance.</p>	<p>The researchers expected that by means of the "dashboard interface" they would be able to stimulate the exploratory behavior of learners and thus help to surmount the problem of passiveness.</p> <p>The researchers also expected better learning results with the "dashboard interface" based on direct, task-embedded, feedback and also higher efficiency in learning with such interface.</p>	<p>53 first year psychology students were assigned to the five different conditions. The participants of each condition ranged between 8 to 14</p>	<p>The study was designed as an experimental design.</p> <p>The log files were used for assessing the exploratory behavior of the subjects.</p> <p>Students were assessed in a performance measure by means of two questions.</p> <p>A test of 17 multiple choice questions was also used.</p>	<p>The representation aspects are: a) giving learners additional navigation support by providing them with separate overviews of input and output, and b) the type of interface: a conversational vs. a direct manipulation interface. Four treatment configurations were formed in addition to a control group.</p> <p>Students received a brief introduction and instruction and the participants spent 45 minutes working in a tutorial plus a simulation.</p>	<p>Providing navigation support in the form of overviews did not raise the participants' scores. To the contrary, subjects in the experimental conditions showed a tendency to have a lower score at the test as well as made fewer iterations in the simulation. Researchers found that overall the number of participants' iterations was related to test performance.</p> <p>In addition, overviews did not influence the interaction pattern of learners.</p> <p>However, the "dashboard interface" group displayed a higher rate of manipulation (i.e. about ten times as high as in the conversational group).</p>