

Search Stage	Search behaviours indicative of learning, or increasing domain expertise
<div>Query (re)formulation</div>	<div> <div>F0B7</div> <div>Increase in the <i>number</i> and <i>specificity</i> of query terms</div> </div> <div> <div>F0B7</div> <div>Increase in number of synonyms</div> </div> <div> <div>F0B7</div> <div>Decrease in number of reformulated queries</div> </div>
<div>Search Engine Results Page (SERP) examination</div> <div>(Source Selection)</div>	<div> <div>F0B7</div> <div>Increased clarity in relevance criteria = increased ability to distinguish between relevant and non-relevant results</div> </div> <div> <div>F0B7</div> <div>Decrease in the number of search results viewed (supported by Mao et al. (2018), contrasted by White et al. (2009))</div> </div> <div> <div>F0B7</div> <div>Decrease in the proportion of partially relevant results viewed, and increase in the number of relevant results viewed</div> </div> <div> <div>F0B7</div> <div>Average time for assessing a search result decreases</div> </div>
<div>Content Page examination</div> <div>(Interaction with sources)</div>	<div> <div>F0B7</div> <div>Increase in the amount of information-use from viewed content pages in the learning outcome artefact (summary, project report, exam answers, etc.)</div> </div> <div> <div>Knowledge Assimilation</div> <div>: addition of new information to existing knowledge structure</div> </div> <div> <div>F0B7</div> <div>Focus on factual and specific information</div> </div> <div> <div>F0B7</div> <div>Refining output with factual information</div> </div> <div> <div>F0B7</div> <div>Revisiting content pages for information initially overlooked</div> </div> <div> <div>Knowledge Restructuring</div> <div>: large changes or replacement of concepts and their relations in knowledge structure</div> </div> <div> <div>F0B7</div> <div>Focus on background and conceptual information; notes taken on themes and ideas</div> </div> <div> <div>F0B7</div> <div>Ideas are related and combined for a focus, in the outcome</div> </div> <div> <div>Knowledge Tuning</div> <div>: small changes in scope and meaning of concepts and their relations in knowledge structure; no replacements</div> </div> <div> <div>F0B7</div> <div>Focus on procedural and specific information</div> </div> <div> <div>F0B7</div> <div>Identification of information to support and refine focus</div> </div>
<div>Overall search session</div>	<div> <div>F0B7</div> <div>Decreased time per search session</div> </div> <div> <div>F0B7</div> <div>Decrease in variability of search tactics</div> </div> <div> <div>F0B7</div> <div>Increase in the diversity of websites visited within a subject area (increase in the average number of unique top-level websites on a SERP or across clicked documents)</div> </div> <div> <div>F0B7</div> <div>Increase in focus of exploration (e.g., the degree to which a SERP is covered by a single topic)</div> </div> <div> <div>F0B7</div> <div>Search path is more ‘branchy’ – returning to a previously visited point and then following a new unexplored direction) (White et al., 2009)</div> </div>