

Table 6.1 Learning theories and potential e-learning applications

<i>Theories</i>	<i>Approach</i>	<i>Main characteristics</i>	<i>Potential e-learning applications</i>
Behaviourist	<ul style="list-style-type: none"> <li>• Behaviourism</li> <li>• Instructional design</li> <li>• Intelligent tutoring</li> <li>• Didactic</li> <li>• Training needs analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Focuses on behaviour modification via stimulus-response pairs, controlled and adaptive response and observable outcomes</li> <li>• Trial and error learning</li> <li>• Learning through association and reinforcement</li> </ul>	<ul style="list-style-type: none"> <li>• Much of current e-learning development represents little more than transfer of didactic approaches online, the 'web page turning mentality' linked directly to assessment and feedback</li> </ul>
Cognitive	<ul style="list-style-type: none"> <li>• Reflective practitioner</li> <li>• Learner-centred</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on internal cognitive structures; views learning as transformations in these cognitive structures</li> <li>• Pedagogical focus is on the processing and transmission of information through communication, explanation, recombination, contrast, inference and problem solving</li> <li>• Useful for designing sequences of conceptual material that build on existing information structures</li> </ul>	<ul style="list-style-type: none"> <li>• Salomon's notion of distributed cognition (Salomon, 1993) could lead to a more shared knowledge structure between individual and surrounding information-rich environment of resources and contacts</li> <li>• Development of intelligent and learning systems, and the notion of developmental personalised agents</li> </ul>
Cognitive constructivism	<ul style="list-style-type: none"> <li>• Active learning</li> <li>• Enquiry-led</li> <li>• Problem-based</li> <li>• Goal-based</li> <li>• Cognitive-apprenticeship</li> <li>• Constructivist-based design</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on the processes by which learners build their own mental structures when interacting with an environment</li> <li>• Task-orientated, favour hands-on, self-directed activities orientated towards design and discovery</li> </ul>	<ul style="list-style-type: none"> <li>• Useful for structured learning environments, such as simulated worlds; construction of conceptual structures through engagement in self-directed tasks</li> <li>• The concept of toolkits and other support systems that guide and inform users through a process of activities could be used to good effect to embed and enable constructivist principles</li> </ul>

			<ul style="list-style-type: none"> <li>• Access to resources and expertise offers the potential to develop more engaging and student-centred, active and authentic learning environments</li> </ul>
Social constructivism	<ul style="list-style-type: none"> <li>• Dialogic</li> <li>• Argumentation</li> </ul>	<ul style="list-style-type: none"> <li>• Emphasis on interpersonal relationships involving imitation and modelling</li> <li>• Language as a tool for learning and the joint construction of knowledge; as a communicative or cultural tool, used for sharing and jointly developing knowledge and as a psychological tool for organising our individual thoughts, for reasoning, planning, and reviewing</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple forms of asynchronous and synchronous communication offer the potential for more diverse and richer forms of dialogue and interaction between students and tutors and amongst peers, as well as the use of archive materials and resources for vicarious forms of learning</li> <li>• Different online communication tools and learning environments and social fora offer the potential for new forms of communities of practice or facilities to support and enhance existing communities</li> </ul>
Experiential	<ul style="list-style-type: none"> <li>• Experiential learning</li> <li>• Action-based</li> <li>• Problem-based</li> <li>• Enquiry-led</li> </ul>	<ul style="list-style-type: none"> <li>• Experience as foundation for learning</li> <li>• Learning as the transformation of experience into knowledge, skill, attitudes, values and emotions</li> <li>• Reflection as a means of transforming experience</li> <li>• Problem-based learning a focus</li> <li>• Experience: problem situation, identification and definition</li> <li>• Theory formation and test in practice</li> </ul>	<ul style="list-style-type: none"> <li>• Asynchronous communication offers new forms of discourse, which are not time-bound and hence offer increased opportunity for reflection</li> <li>• Archive and multiple forms of representation of different communications and experiences offer opportunities for reflection</li> </ul>

<i>Theories</i>	<i>Approach</i>	<i>Main characteristics</i>	<i>Potential e-learning applications</i>
Activity-based	<ul style="list-style-type: none"> <li>• Activity-based</li> <li>• Systems thinking</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on the structures of activities as historically constituted entities</li> <li>• Action through mediating artefacts within a framework of activity within a wider socio-cultural context of rules and community</li> <li>• Pedagogical focus is on bridging the gap between historical state of an activity and the developmental stage of a person with respect to that activity</li> <li>• Focus on organisational learning, or on modelling the development of learners in response to feedback</li> </ul>	<ul style="list-style-type: none"> <li>• New forms of distribution and storage, archiving and retrieval offer the potential for development of shared knowledge banks across organisations and forms of organisational distributed cognition</li> <li>• Adaptation in response to both discursive and active feedback</li> </ul>
Situated learning	<ul style="list-style-type: none"> <li>• Collaborative learning</li> <li>• Reciprocal teaching</li> <li>• Vicarious learning</li> </ul>	<ul style="list-style-type: none"> <li>• Take social interactions into account and learning as social participation</li> <li>• Knowledge is a matter of competences with respect to valued enterprise; participating in the pursuit of this, i.e. active engagement</li> </ul>	<ul style="list-style-type: none"> <li>• Shift from a focus on the individual and information-focused learning to an emphasis on social learning and communication/collaboration</li> <li>• Networking capabilities of the web enable more diverse access to different forms of expertise and the potential for the development of different types of communities</li> <li>• Online communication tools and learning environments offer the potential for new forms of communities of practice or can facilitate and enhance existing communities</li> </ul>