

Learner characteristic	=	≠	■	⦿	Refers to	Implications in instructional design	Some authors
<b>Sensory capacities</b>	☺		☺		Eyesight, hearing, tactile sensitivity and all perceptual responses	Knowledge of sensory and perceptual characteristics becomes important when attempting to fully involve the senses in learning. Common characteristics of sensory capabilities contribute to general principles of instructional message design.	Fleming & Levie, 1993
<b>Human information processing</b>	☺		☺		Encoding and memory of visual and verbal information	Information overload, confusion, and inability to keep up with material being presented are typical student learning problems caused by ignoring human information processing characteristics. Knowledge of information-processing characteristics can not only help the designer avoid problems caused by limits in processing capability, but can also help the designer find solutions to processing-based problems.	Pavio 1971; Miller, 1956
<b>Types of learning</b>	☺		☺		A fundamental fact that people are more or less alike in how they acquire different sorts of learnings such as declarative knowledge, concepts, rules and problem solving	There are some conditions of learning. The similarity in the conditions for attainment of different types of learning is a fundamental building block for instructional design. The principles on which instructional design is based, are largely drawn from a knowledge of similarities among learners.	Robert Gagne, 1985

<p><b>Aptitudes</b></p>		☺	☺	<p>Is an ability related to readiness or facility to learn or achieve. A major division in theory and practice involves general aptitude, a single general (or G) factor, which might be possessed by an individual, versus specific aptitudes, of which an individual person possess many. (Single factor, multiple factor, multiple intelligences, aptitudes and aptitude complexes).</p>	<p>IQ scores (Single factor) can help a designer make inferences about a number of factors that are related, including cognitive strategies and amount of general prior knowledge available to build upon. IQ indices may also help predict which students will need fewer/more examples, be able to interpret analogies, require more/less learning time, need more/less practice, have positive/negative attitudes toward learning, or persevere in learning for short/long periods of time. Tests of multiple factor can help in placement and student selection in careers. Gardner's multiple intelligences and Richard Snow's aptitude-treatment interaction help to combine different instructional methods with learner groups with different aptitudes.</p>	<p>Howard Gardner, 1993; Cronbach &amp; Snow, 1977</p>
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<p><b>Cognitive styles</b></p>		☺	☺	<p>Ragan et al found 11 style dimensions. Of these, four styles- field independent/dependent cognitive style, leveling/sharpening cognitive controls, impulsive/reflective cognitive tempo and visual/haptic perceptual style. Locus of control is a personality variable associated with an individual's perception of the source of major life influences and is frequently associated with style variables.</p>	<p>Refers to the way that people receive and process information. Are useful to instructional designers because they provide information about individual differences from a cognitive and information-processing standpoint. Information about learner's cognitive style can provide insight into not only whether and individual is likely to be able to learn to complete a particular learning task but also why. Information from cognitive style measures is relevant onyx when considered with regard to particular learning tasks. In making an investigation, the designer should look for information about the theoretic construct behind the style, validity and reliability of instruments used to measure, evidence of the independence of styles form one another, independence of the style from general measures of aptitude and intelligence, and the breadth of application claimed.</p>	<p>Ragan et al., 1979; Lefcourt, 1976</p>
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<b>Psychosocial traits</b>		☺	☺	Refers to trait anxiety, trait locus of control and academic self-concept	Instructional accommodations, such as frequent feedback, clear specification of expectations, and over learning, can minimize the negative influence of anxiety on learning. In the case of locus of control, some adaptation can be made to instruction to promote greater learning. One instructional manipulation that can accommodate differences in locus of control is the amount of structure built into a lesson. Designers can accommodate stable differences by either a) making sure that a single instructional treatment or approach can accommodate learners across the range of differences or 2) creating several instructional treatments each of which is adjusted to a narrowed range of characteristics.	
<b>Gender, ethnicity and racial group</b>		☺	☺	Gender, ethnic, or racial group tend to have common experiences because of their group membership that may be quite different from those had by members of other groups.	Designers should consider these to ensure that they include contexts and examples that are relevant and comprehensible to members of all groups represented in the target audience. Cultural factors are important, whether it is a multicultural situation or not.	

<p><b>Development processes</b></p>	<p>☺</p>	<p>☺</p>	<p>☺</p>	<p>Piaget saw intellectual development as a process as being the same for everyone. He described development as an essentially adaptive process involving the interplay of two processes: assimilation and accommodation. Vigotsky emphasizes interactions with the sociocultural environment and the role of language as a primary tool of intellectual adaptation. Chomsky's theory of language development hold that a propensity or talent for the structure of language is in a sense wired to human brains. Maslow's hierarchy of needs describes types of human needs: a) physiological needs, b) safety needs, c) love and belonging needs, d) esteem needs and e) the self-actualization need.</p>	<p>Piaget's ideas have been used to suggest generative, inquiry-oriented instructional strategies for helping people achieve these capabilities. Vygotsky's theory is useful for constructivists in thinking about the design of learner-centered and context-sensitive learning environments. Knowledge of these processes is useful when designing for a target population, for whom, regardless of their levels development, share a common process which governs their changing developmental states - cognitive, language, psychosocial, and moral. It is useful for the designer to analyze the population and therefore some sense of how learning activities, examples and content may be cast. Knowledge of the dynamics of development can assist in understanding learners' cognitive structures and, consequently, can assist designers in developing ways in which learners can be assisted to make desired changes. These involves determining learners' current state of knowledge and identifying prerequisite knowledge that must be acquired for a learner to move on to the next stage of development.</p>	<p>Piaget, 1969; Vygotsky, 1978; Chomsky, 1965; Maslow, 1954</p>
<p><b>Values and beliefs</b></p>	<p>☺</p>	<p>☺</p>	<p>☺</p>	<p>Vary among learners because of their own unique experiences</p>	<p>In order to make learning relevant and meaningful, it is important that the designer obtain information on these values, beliefs and interests in order to actively avoid offending.</p>	
<p><b>personality states</b></p>	<p>☺</p>	<p>☺</p>	<p>☺</p>	<p>anxiety, locus of control and academic self-concept</p>	<p>Measurement instruments to assess anxiety, locus of control and academic self-concept should be used to asses the target audience if they suspect that the context or the content may negatively affect these states</p>	

<p><b>developmental stages</b></p>		☺		<p>Stages of intellectual development identified by Piaget, which reflect an increasing capacity to engage in certain kinds of abstract thought. These stages of development are sensomotor, preoperational, concrete operations and formal operations. Erikson describes eight stages of psychosocial development in terms of the psychosocial crisis: trust versus mistrust, autonomy versus shame, initiative versus guilt, competence versus inferiority, identity versus identity confusion, intimacy versus isolation, generativity versus stagnation, integrity versus despair. Also, moral development suggested by Kohlberg says that people generally develop in their morality through stages.</p>	<p>An instructional designer who neglects to consider state of intellectual development can make fundamental errors in assuming that learners will be able to benefit from instruction that is impossible for some of them to comprehend or in assuming that learners possess a level of development beneath their actual attainment and subsequently fail to sufficiently challenge them or promote cognitive growth. An understanding of the stages of moral development can be quite helpful to designers, particularly as they design for attitude objectives, instructional management strategies or instruction in psychosocial content areas. In general, individuals in the same cohort tend to have similar interests, motivations, relationships to peers, feelings toward authority and role models. Designers should consider these characteristics when selecting examples, creating relevancy statements, and making grouping decisions.</p>	<p>Inhelder &amp; Piaget, 1958; Erikson, 1968; Kohlberg; 1969</p>
<p><b>prior knowledge</b></p>		☺		<p>Every person has a storage house of knowledge, which varies with age, culture, age and many other factors, and can be called general world knowledge. Visual literacy is an example, culture also influences learners ability to decode visual messages</p>	<p>Instructional designer might be better served by looking at major capabilities not as representatives of stages of development but rather as reflections of accumulated learning. We have to specify lower-level learnings that are prerequisite to achieving a capability of a higher order such as an intellectual skill. We have to be aware that just because something has been taught does not mean that it has been learned.</p>	