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# The Domains of Learning : comprehensive taxonomy of educational objectives

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## OVERVIEW :

This Paper reviews the known literature and finds there are five *Domains of Learning* that together offer a full comprehensive coverage including all aspects of learning as educational objectives. Teaching and assessment has historically focused on the *Cognitive* and to much less extent the *Affective* aspects - where these are easier to measure. There are however many other aspects such as learning how to learn in the *Metacognitive Domain*, and controlling interactivity and group composition in the *Environment*, as well as coping with massive data resources in the *Management Domain*. This Paper summarises the evidence and then gives a range of aspects in each domain. The five *Domains* provide an effective and efficient Framework for a full syllabus covering all the types of learning needed for modern critical lifelong learning.

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## *Literature Survey*

In earlier works (Bloom, 1956), three domains were recognized as *Cognitive* (knowledge), *Affective* (feelings), and *Psychomotor* (skills). These overlap to some extent, and knowledge and skills can be treated together here. The *Metacognitive Domain* was not considered by the researchers led by Bloom in the 1950s, but has become well recognized afterwards. A revised taxonomy was published by Anderson et al. (2001) that includes the *Metacognitive Domain*. With the development of computer-mediated communications, various technological barriers to learning have been reported and media literacies or interactivities have been identified as an area important to learning particularly in open and distance education, but also in blended and e-learning, and all these constitute the *Environment Domain*.

Four *Domains* were identified by Hartman (2001). These were the *Cognitive*, *Affective*, *Metacognitive*, and *Environment*. They share overlapping characteristics – for example, prior knowledge within *Cognitive* is also a basis for academic interest in *Affective*, and in understanding in the *Metacognitive*, as well as being part of resources in the learning *Environment*. And for example learning style, while largely in the *Affective Domain*, is also in *Cognitive* in prior educational experience, in *Metacognitive* in awareness, and in the *Environment Domain* as a task-dependent variable. The *Cognitive Domain* covers the aptitude, prior knowledge and skills necessary for performing a task or test. *Affective* covers the motivation, attitude

and decision to initiate performance, the *Metacognitive* is understanding how the task is performed, and the ability to self-monitor, evaluate and plan own learning, and the *Environment Domain* is defined as the social or physical forum in which learning occurs.

Student surveys have confirmed these four *Domains* are involved as facilitating learning or as the case may be as barriers to learning. Rezabek (1999) found that barriers to learning in distance education could be categorized as situational, institutional, or dispositional. The first two are in the *Environment Domain*, and the third is in the *Affective*. Garland (1993) found a fourth category of epistemological barriers concerning the technical difficulty, prerequisite knowledge and academic interest or relevance, and this category would be in the *Cognitive Domain*. And Leggett & Persichitte (1998) found a fifth category concerning student support and study skills, which would be in the *Metacognitive Domain*.

### *The Case for a Management Domain*

The *Management Domain* covers an evolving field, and is being established to bring into account the knowledge and skills to be learnt by students in the newly emerging learning society and knowledge-creating society using the Internet since 1991. Learners are faced with an information overload in most cases - with electronic access through the Internet to libraries, news-groups, blogs, email, voice-over-internet chat, as well as face-to-face meetings, print, radio, television, and so on. Learners must develop coping strategies and skills, in order to filter this massive amount of information to obtain appropriate material in a suitable quality for assimilation and learning.

The student has to spend time and effort to judge the quality, validities and reliabilities of the incoming information. Time management is included here, since this is an overarching influence on the information management skills. Reading and writing communication skills are also within this *Management Domain*. There are a host of literacies included here. The student function in this Domain is to imagine and then access information (or if necessary to design research to collect data to generate this information), search, evaluate and select appropriate information, and then to construct knowledge. The student needs to interact with ideas, data, information, and prior knowledge - preferably within a regulated system as opposed to a chaotic situation. The student needs to interact with other individuals, resources and organizations. Overall, this *Management Domain* involves learning efficient and effective communication processes.

### *The Barriers to Learning*

There are many reports in the literature on the various barriers to learning (Bloom et al, 1956 ; Anderson et al, 2001 ; Hartman, 2001 ; Rezabek, 1999 ; Garland, 1993 ; Leggett & Persichitte, 1998). Students report finding the content too difficult, or the language poses a problem, or that their own computer skills are inadequate. These together with other barriers or aspects to be learnt and surmounted during their studies are listed in TABLE 1 below and categorised according to domain.

TABLE 1 : Barriers suggested from the Literature

Domain	Barrier
1. COGNITIVE	content too difficult, illiterate
2. AFFECTIVE	low interest, not fun, no motivation
3. METACOGNITIVE	slow feedback, low self-esteem
4. ENVIRONMENT	no space, competing family duty
5. MANAGEMENT	no time, no library, coping stress

The five *Domains of Learning* are summarised in TABLE 2 with their respective coverage related directly to the above Barriers reported by students learning.

TABLE 2 : The Domains of Learning according to Barriers to be Overcome

Domain	Barrier
1. COGNITIVE	aptitude knowledge and skills
2. AFFECTIVE	motivations and group orientation
3. METACOGNITIVE	self-reflection on learning
4. ENVIRONMENT	social physical and virtual forum
5. MANAGEMENT	coping storing and retrieval

The *Domains of Learning* can be expanded as ;-

*Cognitive Domain* : the aptitude, prior knowledge and skills necessary for performing a task or test, and the content knowledge and reflective critical thinking skills to be learnt

*Affective Domain* : the motivation, attitude and decision to initiate performance, including the will to reduce own autonomy in order to achieve group tasks

*Metacognitive Domain* : understanding how the task is performed, and the ability to self-monitor, evaluate and plan own future learning, and the willingness to help others to learn

*Environment Domain* : the social or physical forum and virtual or augmented reality in which learning occurs, including any group characteristics

*Management Domain* : coping critically with massive amounts of information to obtain appropriate material in a suitable quality for learning, and time management

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This Paper is available online at  
<http://www.open-ed.net/library/domains.pdf>

The Domains of Learning are also reported in a presentation at  
<http://www.open-ed.net/library/domains.ppt>

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