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ABSTRACT

This paper presents a model for those interested in the design and/or research of instruction in the affective domain. This model is an integration of current theories and models in the affective domain. It is a broad and comprehensive model which represents the hierarchical structures and interactions of affective and related cognitive factors, including attitudes, beliefs, values, anxiety, motivation, attributions, confidence, and interests. The first section of the paper provides a theoretical framework of research in the affective domain; three figures depict taxonomies of the affective domain. Constructs of interest to those who work in the affective domain are defined in the second section. The third section describes the Model of Learner-Instruction Interactions in the Affective Domain; a diagram shows the interactive relationship of instructionally important factors (e.g., attributions, confidence, attitudes, motivation, and values). Applications and limitations of the model are discussed. Implications of this model and ways that researchers and designers can contribute to the model are also considered. Contains 12 references. (DLS)

The Affective Domain: A Model of Learner-Instruction Interactions

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Abstract

As instruction is now being designed with more regard to affective outcomes, the importance of a model to help the process has increased. Krathwohl, Bloom, and Masia (1956 & 1964) and Gephart and Ingle (1976) laid the groundwork for working in the affective domain. Keller (1983) proposed a model for the interaction of learners and instruction focusing heavily on the affective domain. Martin and Briggs (1986) later published a landmark book to help those in the field of Instructional Technology with the process of integrating the affective and cognitive domains. Using these sources as a starting point a more comprehensive model for instruction in the affective domain was synthesized. This paper therefore presents a model for those interested in the design and/or research of instruction in the affective domain. This model is an integration of current theories and models in the affective domain. It is a broad and comprehensive model which represents the hierarchical structures and interactions of affective and related cognitive factors, including attitudes, beliefs, values, anxiety, motivation, attributions, confidence, and interests.

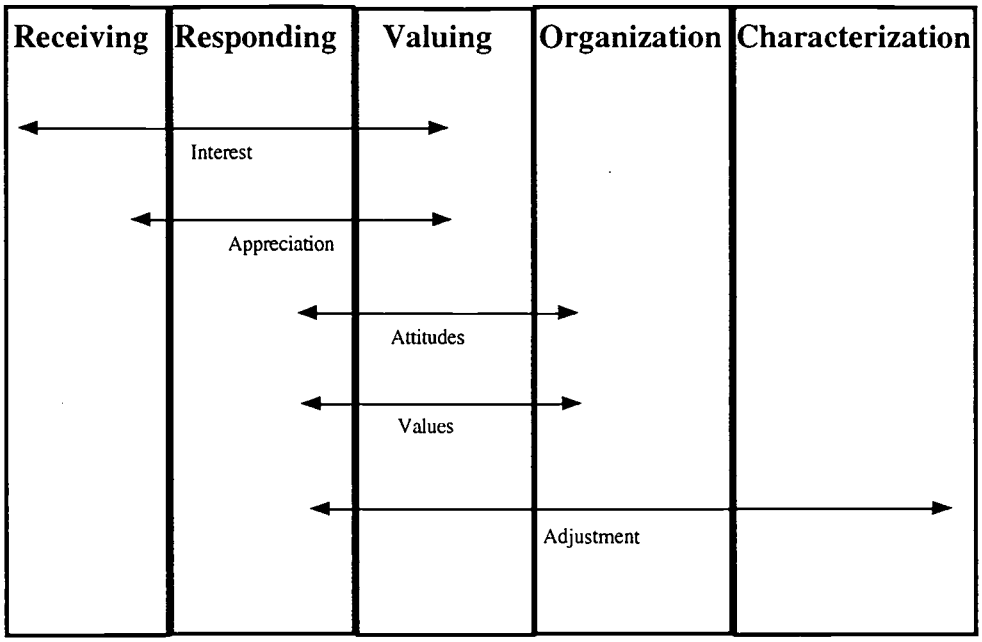
Theoretical Framework

Krathwohl, Bloom, and Masia (1956) developed one of the first taxonomies of educational objectives for the affective domain (see Figure 1). Krathwohl, Bloom, and Masia (1964) then added such affective constructs as attitudes, appreciation, and valuing within the hierarchy for the affective domain (see Figure 2). This enhanced taxonomy, however, had many gaps and did not contain many other important affective domain constructs.

Figure 1. Krathwohl et al.'s Taxonomy of the Affective Domain
(Adapted from: Krathwohl, D., Bloom, B., & Masia, B. (1956). Taxonomy of educational objectives. Handbook II: Affective domain. New York: David McKay.)

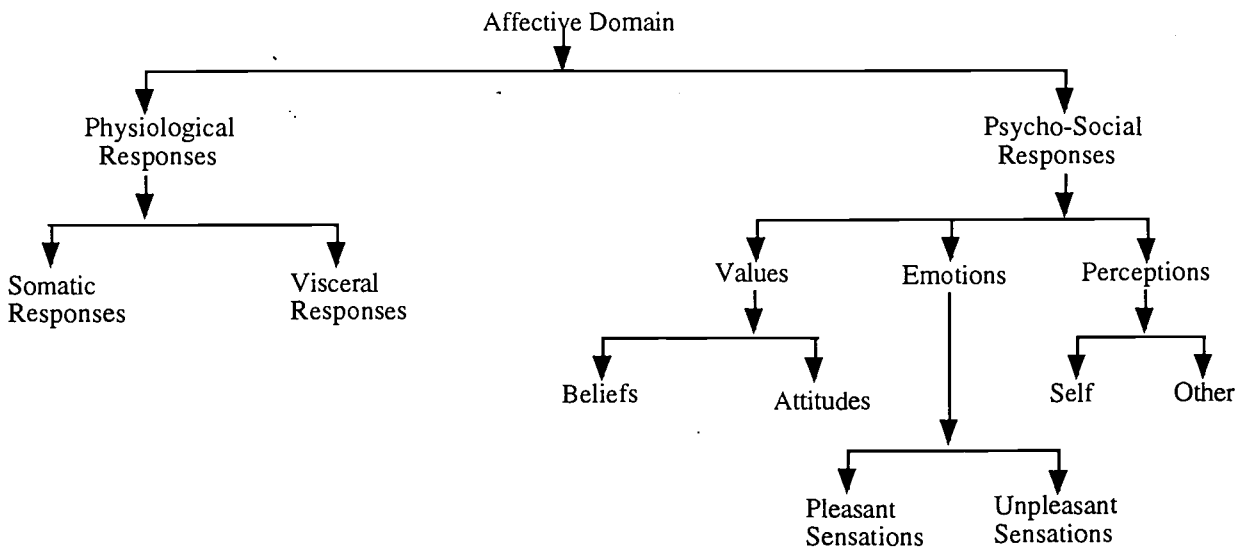
Level	Definition	Meaning
1.0 Receiving	Being aware of or attending to something in the environment.	I'll read an article about proper professional behavior, but I won't promise that I'll like it.
2.0 Responding	Sufficiently involved to the subject that one seeks it out.	I agree to attend several optional faculty meetings.
3.0 Valuing	Showing some definite involvement or consistent commitment.	I attend and participate in all faculty meetings.
4.0 Organization	Integrating a new value into one's general set of values, giving it dominance among one's priorities.	I volunteer to take a leadership role in the the faculty government.
5.0 Characterization	Acting consistently with the new value.	I help to restructure the faculty governance to improve its effectiveness.

Figure 2. Range of constructs in Krathwohl et. al.'s Taxonomy continuum.
(Adapted from: Krathwohl, D., Bloom, B., & Masia, B. (1964). Taxonomy of educational objectives. Handbook II: Affective domain. New York: Longman.)



Gephart and Ingle (1976) proposed a broader descriptive taxonomy of the affective domain (see Figure 3). While this model encompassed more of the affective domain, it still omitted several concepts usually placed within or linked to constructs in the affective domain (such as motivation, confidence, and attributions) and is limited in use for researchers and designers of instruction.

Figure 3. Taxonomy of the Affective Domain by Gephart and Ingle
{Adapted from Gephart, W. J. & Ingle, R. B. (1976). Evaluation and the affective domain. *Proceedings of the National Symposium for Professors of Educational Research.* Phoenix: ERIC}



Keller (1983) presented a macro-model for the relationship of motivation, performance and instructional influence. Keller (1983) also developed a model for the design of motivating instruction. This model was later

named ARCS -- an acronym for its four categories of attention, relevance, confidence, and satisfaction. Keller integrated the works of Bandura (1977) in self-efficacy, Weiner (1979) in attribution theory, McClelland (1976) in motives, and a number of other theorists into this model.

Building on the body of literature regarding the Affective Domain, Martin and Briggs (1986) published an award-winning book on integrating the affective and cognitive domains. The authors presented an instructional design model using audit trails for integrating the two domains. Later, Bohlin, Milheim, and Viechnicki (1993) integrating factor analyses of data from the motivational needs of learners with the macro and ARCS models presented by Keller, proposed a prescriptive instructional design model for motivating instruction-learner interaction. While this model had some promise for designers, it did not entirely provide for the needed more comprehensive coverage in the affective domain.

In addition, many other researchers outside of educational settings have provided some insights into how affective constructs might influence learners. Spielberger (1966) and Tobias (1979), for example, have performed significant work in the area of anxiety.

These previous models and theory structures are fairly comprehensive, however they individually lack the scope of the enough of the affective domain to help designers of instruction and research. There is a need, therefore, to synthesize and integrate a new more comprehensive instruction-learner interaction model for the affective domain. The importance of such a comprehensive model is that it would provides designers and researchers with a means for considering a greater number of affective variables when planning the research and design of instruction. Such a model also, hopefully, would provide a starting point for discussions regarding the relationships of various affective and linked cognitive constructs, as well as providing a framework by which instruction and research in the affective domain might be planned. This paper is an attempt to begin the creation of such a model.

Constructs

There are a number of variables important to those who work in the affective domain. Following are several definitions of some of the constructs that are in the Model of Learner-Instruction Interactions in the Affective Domain.

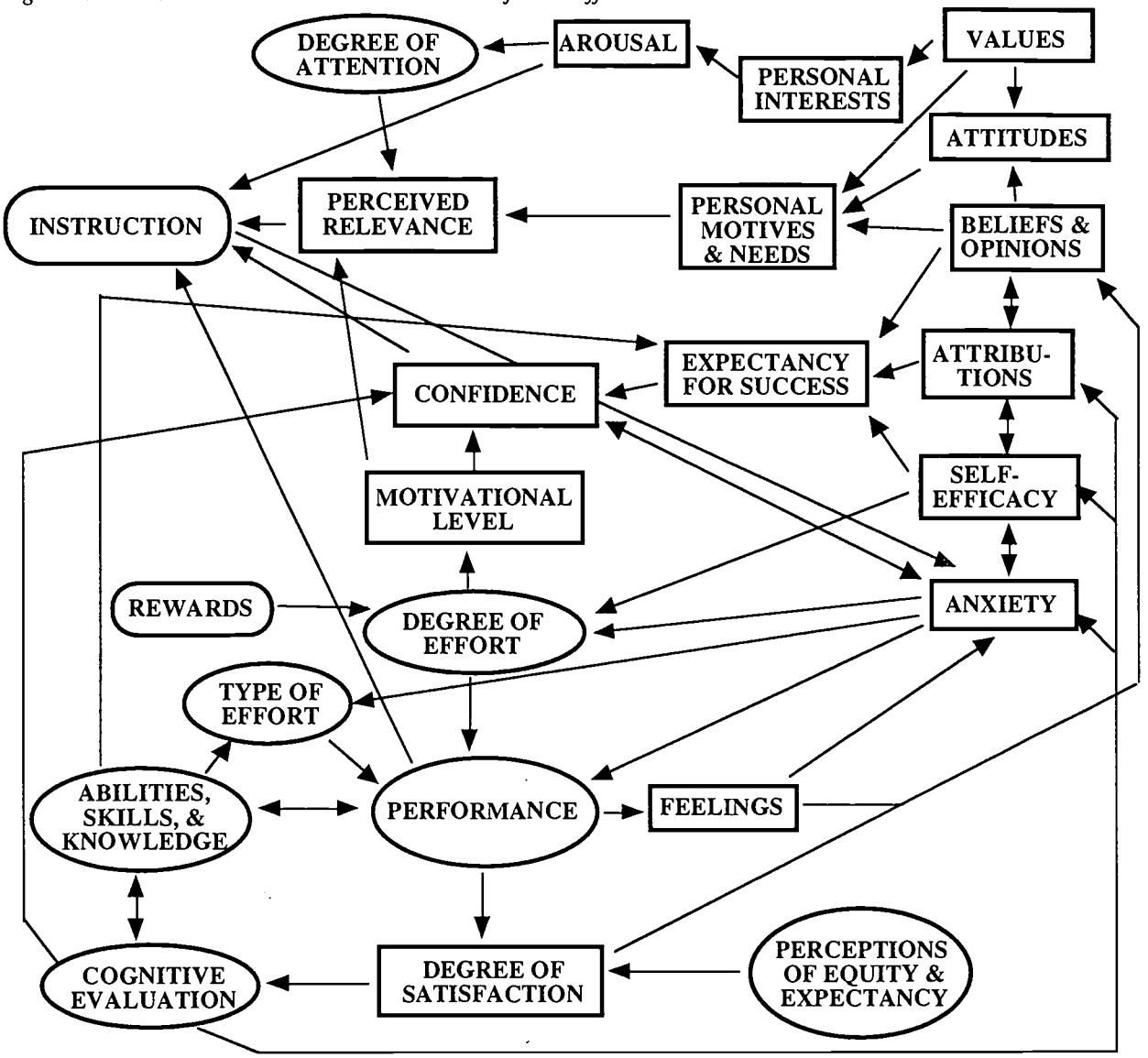
1. anxiety - an emotion described as the degree of fear or dread toward an object or situation
2. arousal - the level of stimulation being experienced by an individual which influences the level attention in that situation at that time
3. attitude - internal state or learned predisposition toward or against something or a set of things that have a some influence over an individuals choices
4. attributions - sets of inferences that one makes about the causes of success or failure related to ones behavior
5. beliefs and opinions - a set of convictions that one has accepted based upon ones experiences and interpretations of those experiences
6. confidence - the state of positive emotions and cognitions related to ones ability to successfully complete an expected task
7. expectancy of success - ones perceived likelihood of achieving a positive outcome in a given situation
8. interests - a set of preferences or tendencies toward some idea or object usually related to a stimulation of curiosity
9. motivational level - the degree of effort and the direction of that effort as to experiences or goals one approaches or avoids
10. motives - learned goal-directed tendencies which are directed by drives
11. perceived relevance - the degree to which a given situation is perceived by an individual as correlating with his or her needs and motives
12. satisfaction - a feeling that can be described as the extent to which the outcomes of a situation match ones expectations and perceptions of equity
13. self-efficacy - the degree of conviction that one has the ability to successfully cope and complete the behaviors necessary for the desired outcomes in specific situation
14. values - groups of attitudes organized around a central idea related to the perceived worth of that idea

The Model

The Model of Learner-Instruction Interactions in the Affective Domain (see Figure 4) shows the interactive relationship of instructionally important factors (such as attributions, confidence, attitudes, motivation, and values).

Constructs which interact with others are clearly shown with directional arrows. The model uses the following representations: (a) predominately affective variables are represented by rectangles; (b) predominately cognitive or behavioral variables are represented by ovals; and (c) external variables are represented by boxes with rounded corners. In addition, the model also shows those constructs which are dependent upon others, by using arrows to show the direction of influence.

Figure 4. An instruction-learner interaction model for the affective domain



Applications

There are several ways that this descriptive model can be used. First it can be used as a model for the planning of instructional interventions. Let's consider an instructional designer who is working with an audience that has some degree of debilitating math anxiety. Using the model (see Figure 4) it can be seen that anxiety can be affected by:

- cognitive evaluations related to ones abilities and knowledge in mathematics (for example "I don't understand how algebra works" or "I have never understood how to do formal proofs in geometry.")
- confidence related to the specific instructional strategies (for example the lack of visual aids for a very visually dependent learner, or individual work for a learner who needs to "discuss" ideas with peers before trying them).

- previous outcomes or results of instructional interactions (for example "I have never done well in algebra" or "I failed the last test even though I studied six hours".

The designer can therefore begin to examine ways to assess the needs of these learners to decide the best course of action for intervening in the debilitation of the anxiety.

Another use of the model might be for a researcher investigating affective variables. Research involving the construct of learner confidence, for example, can be identified to have effects from (see Figure 4) anxiety, attributions, self-efficacy, the specific instructional environment, abilities, skills, and knowledge. This model does not make any attempt to predict which effects are the strongest, for those are determined by the specific individual case. The model does attempt to be very inclusive so that many potential factors can be considered.

Third, Some constructs are directly determined by others (such as attitudes by beliefs or confidence by attributions). The model, therefore, suggests that if teachers (for example) want to change the attitudes of students, then they should work on the underlying beliefs of that attitude. For example, if I want to change a student's attitude toward using computers, then I should examine the beliefs of that student toward the use of computers in general and/or related specific beliefs (such as the belief about the uses of computers or beliefs about ones efficacy in using computers).

A fourth way that this model can be used is to examine how instruction might affect specific affective variables. For example, let us consider the construct of anxiety. Using the model, we can see that instruction does not directly link to anxiety, but it does connect through several indirect paths. One such path is through performance and the related feelings of the performance. Another is through performance and cognitive evaluation of ones improved abilities and knowledge (directly or through changes in self-efficacy or attributions). A third possibility is by providing instructional strategies that improve confidence levels about success in the instruction.

Limitations

This is not an instructional design model. It does not have an entry point to begin the process of designing instructional interventions. In order to design instruction using this model, one would have to also use an ID model of some type.

This model is not a prescriptive model. It does not directly provide strategies for instructional designers or researchers. As a descriptive interaction model, it merely describes suggested theoretical relationships among behaviors, affective constructs, and related cognitive factors. Users must have some knowledge of the nature of these variables to make appropriate inferences.

Implications

Much of the research into the affective domain has been rather fragmented, each concentrating on one or two affective constructs. The lack of a global vehicle to gain insight into the larger picture has represented a significant deficiency in making the affective domain accessible to practitioners and theorists. This paper is an attempt to begin to fill that gap, by providing a model that can help provide descriptive information on affective constructs. It is hoped that this model can increase the knowledge base of those practitioners and theorists interested in instruction and research in the affective domain.

We now have the opportunity to begin directing more of our focus and efforts into applications and research within this important arena. Researchers and designers can help to contribute more data to this model in a number of ways. They can help specifically if they:

- validate the theoretical connections in the model with research results;
- add prescriptions for specific variables based upon both research and best practice experience; and
- provide information about the best ID models for integrating inferences made from the use of this model.

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