TRENDS AND ISSUES IN INSTRUCTIONAL DESIGN AND TECHNOLOGY

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Application Questions

1. Collect ten goals, objectives, or other student expectation statements from three or four different sources (e.g., textbooks, course syllabi, instructional materials). Using the descriptive information in the chapter, classify each as representative of an integrative learning goal or instructional objective. (Make whatever revisions are needed so that it best fits as either an integrative learning goal or instructional objective.) Then revise each to create a new version of each that is consistent with the other epistemological perspective. You should have each of the ten original statements stated in the form of both an instructional objective *and* an integrative learning goal.
2. Select two instructional objectives and two integrative learning goals from the above activity. For each, identify two or three grounded teaching-learning activities and describe why you believe that they represent grounded design practices.

CHAPTER 6

MOTIVATION AND PERFORMANCE

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Editors' Introduction

As is pointed out in this chapter, motivation refers to a person's desire to pursue a goal or perform a task. Because a person's motivation can be influenced by external events, and because motivation does influence learning and performance, instructional designers usually are concerned about how to motivate learners. In this chapter, John Keller and Brenda Litchfield answer six fundamental questions about motivation and the design of instruction.

This chapter also describes Keller's ARCS (Attention-Relevance-Confidence-Satisfaction) model of motivational design, which instructional designers frequently use to incorporate motivational tactics into instruction. The four categories of motivation described in the model are presented, and the steps in the ARCS design process are displayed.

Knowledge and Comprehension Questions

1. *To integrate motivation into instruction, instructional designers should look at three levels of motivation. Briefly explain each one.*
2. *Describe the three primary categories of influence on performance.*
3. *Summarize the three assumptions about motivation that are discussed in this chapter.*
4. *What is the difference between intrinsic and extrinsic motivation? Give three examples of each.*
5. *Why should instructional designers consider state and trait when developing instruction?*

A concern for motivational design has been a growing trend in instructional design. John Keller's 1979 article, *Motivation and instructional design: A theoretical perspective,* described the lack of attention to motivation in the instructional design literature and introduced an approach for integrating motivation into models of learning environment design. At that time, there were only two well-known considerations of motivation in instructional design. The first and major one was the behavioral literature on reinforcements to shape and sustain behavior. In this theoretical perspective, motivation was generally established by deprivation, that is, by assuming that learners would have some perception of a need or desire that would be fulfilled by the rewards to be gained from learning. The other consideration was a principle embedded in Gagné's (1985) conditions of learning which stated that it is necessary to gain students' attention before they will learn. Certainly, there was a large amount of existing psychological literature on motivation, but neither it nor the previously mentioned areas of research provided an adequate understanding or an approach to integrating motivation in instructional design because it was not integrated into a design process.

Following the publication of Keller's (1979) paper, there was a slow growth in interest in motivation and its integration into instructional and learning environment design, and in recent years, it has grown exponentially. This has resulted from the work of people such as Wlodkowsky (1999) and Brophy (1983, 1998) and the continued work of Keller (1987a, 1999a). These researchers have built holistic models of motivational influences in instruction and learning, and have developed principles and techniques that can be applied and tested for validity. Interest in motivation and learning has also been stimulated and supported by growing numbers of applied and validational studies (Small & Gluck, 1994; Means, Jonassen, & Dwyer, 1997).

Even though there has been this increased activity, it can still be difficult for an instructional design specialist to obtain a quick overview of this literature and its relevance. Consequently, we have formulated six questions that provide a structure for understanding the current situation, the major characteristics of motivation and motivational design, and trends in this area of activity.

Understanding Motivational Design: Six Questions

1. What do I need to know about motivation? Why should I have to know anything about it if my focus is on instructional design and technology?

Effective instructional design does not occur in a vacuum. Employers frequently complain that instructional design and technology graduates who are well versed in the various authoring and graphics applications for designing computer-based and Web-based instruction often produce instruction that is pedestrian—if not actually boring—and not sufficiently effective. To produce high-quality products, instructional designers must be thoroughly grounded in the processes of both motivational and instructional design. Recognition of this is illustrated by several instructional design texts that now include a section on motivational design (e.g., Dick & Carey, 1996; Smith & Ragan, 1999).

Another reason for developing competency in motivational design is the trend in our field to move from the perspective of instructional design to the broader perspective of human performance technology (HPT). From this perspective, instructional designers must understand and be able to identify all of the factors that influence human performance and to use a team approach in designing systems for improving performance. For example, training or education is only one influence on human performance. Also important are motivation, social climate, incentives, resources, leadership methods, and the consistency of all these things with organizational goals.

Within this new frame of reference, motivation is critical at three levels. The first is motivation to learn, second is motivation to work, and third is self-motivation. Motivation to learn, the primary focus of this chapter, refers to learners' internal characteristics combined with external tactics and environmental factors that stimulate and sustain learner motivation. To accomplish this requires knowledge of motivational principles, methods for analyzing learner motivation, and methods for designing relevant motivational tactics. This is critical because of the constantly growing amount of training and education that is occurring throughout an employee's career, even after graduation from a formal educational program. Motivation to work is similar to motivation to learn in that it refers to designing work environments that match external tactics and stimuli to the motivational characteristics of the employees. The differences are at the obvious level of work versus instruction, but there are also differences in scope.

The remaining concern is with self-motivation, which has been formally studied (McCombs, 1984), but primarily in school settings. However, this is changing. A current trend in the United States is for employees to take more personal responsibility for learning and development (Cusimano, 1995), which accompanies the development of knowledge management systems in many organizations. With the growing availability of the Internet, intranets, and electronic performance support systems, employees are expected to know how to use these systems effectively and to contribute to the development of corporate knowledge. Consequently, in addition to the importance of motivation to learn and to work, self-motivation for learning has become an important concern, and instructional designers will benefit from having some knowledge of motivation at all three of these levels.

2. What is motivation (and what isn't it — what is it different from)?

Most writers in this field of human performance development (Gilbert, 1978; Porter & Lawler, 1968; Rummler & Brache, 1990) identify three major categories of influence on performance. They can be classified as capability, opportunity, and motivation (Keller, 1999a). Capability refers to a person's knowledge, skills, and aptitudes, which determine what a person is able to do. Opportunity refers to resources and information that are necessary for a person to perform a task. These can include clear statements of goals, instructional content and tests that are matched to the goals, availability of tools and equipment, sufficient time to perform the task, and guidelines for performing the job. Finally, motivation refers to a person's desire to pursue a goal or perform a task, which is manifested by choice of goals and effort (persistence plus vigor) in pursuing the goal.

To design effective learning environments or to develop holistic programs of human performance development, the instructional designer must understand and integrate all three of these influences in relation to their influences on effort, performance, and satisfaction (Keller, 1983, 1999a). The motivational element is particularly important because it pertains to a person's basic decisions as to whether or not to accept responsibility for a task and to pursue a given goal. Without this initiation of behavior, none of the other things matter.

3. What are the assumptions and issues in learning and applying motivational design principles and processes?

Assumptions pertaining to motivational design. Experience has shown that it can be difficult to convince educators and instructional designers to accept responsibility for motivational design and that they sometimes have inappropriate conceptions of their responsibilities for learner motivation. It helps to overcome these obstacles if one understands and accepts three basic assumptions underlying systematic motivational design.

The first assumption is that people's motivation can be influenced by external events. Even though this might appear to be a truism, it runs counter to a frequently held assumption of many teachers and instructional designers who believe that their job is to provide the best-quality instruction they can and it is the student's responsibility to want to learn the material. Ultimately, students do have control over their motivation, but even motivated students will become uninterested if the instruction is boring and disorganized, just as they may become inspired by an enthusiastic teacher. Teacher behavior, instructional materials, and other elements of a learning environment will all affect motivation.

The second assumption is that motivation is a means, not an end, in relation to learning and performance improvement. Too often, educators equate motivation with entertainment and fun; they believe that if learners are truly motivated, they will be smiling

and having fun. Certainly, it is enjoyable when learning is fun, but that is not the primary goal of motivational design. The goal is to have learners engaged in learning or work activities, not just entertained by them.

The third assumption is that systematic design can be used to predictably and measurably influence motivation. Instructors sometimes, maybe often, believe that to be motivating, one must have charisma and wit. On the contrary, there are fundamental characteristics of motivation, and processes for influencing it, that can assist teachers in having motivating instruction regardless of their personal styles. The models to be mentioned in this chapter illustrate this.

The point to remember from these assumptions is while people are ultimately responsible for their choices and other aspects of personal motivation, the design of learning and performance environments will have positive (or negative!) influences on motivation.

Issues in the study of motivation. There are many issues to consider in the study of motivation and development of motivational principles. Among these, three are found frequently in the literature that are particularly relevant to having a solid conceptual foundation for the study of motivation. First is the distinction between intrinsic and extrinsic motivation. Second is the distinction between motivational characteristics as states or traits and how this influences design decisions. Third is the overall conceptual frame of reference for motivation. Some researchers view motivation as being within the affective domain, while others see it as a composite construct having both cognitive and affective elements.

Intrinsic versus Extrinsic Motivation. In what ways can motivation be considered to have intrinsic or extrinsic elements? Generally, there is a consensus among researchers on the distinction between intrinsic and extrinsic motivation. According to Deci (1975), intrinsic motivation occurs when one engages in a task for which there is no apparent reward except the pleasure of engaging in the activity (Deci, 1975; Stipek, 1998). In contrast, extrinsically motivated individuals engage in tasks for rewards associated with successful accomplishment. Naturally, there can be a mixture of the two elements in a given situation, but there can also be conflicts such that extrinsic rewards reduce one's intrinsic motivation for learning. Some researchers reported the detrimental effect of extrinsic motivation on intrinsic motivation (Deci, 1972; Lepper & Green, 1978). Others reported that extrinsic motivation, when carefully prescribed, can be used to build learners' intrinsic motivation (Kruglanski et al., 1975). Despite the inconclusiveness of this research, there are specific tactics that promote intrinsic motivation, and others that provide guidance for the effective use of extrinsic rewards (Stipek, 1998).

Trait versus State. Motivational characteristics, like other psychological characteristics, have been conceptualized as both traits and states (Brophy, 1983; Keller, 1983; Rotto, 1994). A state is a condition brought on by a situational stimulus or process, whereas a trait is a stable psychological need or drive. Berlyne (1965) indicates that

curiosity, for example, can be a trait, but it also has state characteristics; that is, people differ in their stable, trait-level degree of curiosity, but some situations will awaken state curiosity more than others. Rotto (1994) made the same point in regard to intrinsic motivation, and virtually all motivational characteristics have both trait and state features.

This issue has implications for instructional design. Similar to ability, which is considered to be a stable trait and not likely to be changed by specific episodes of instruction, motivational characteristics that are traits will not easily be changed. In these situations, the instructional designer's goal would be to identify the relevant traits and design motivational tactics to accommodate them. But it is reasonable to assume that because many elements of motivation are at the state level, they will be influenced by immediate situational factors and will change from time to time during a period of instruction (Visser & Keller, 1990). Therefore, motivational design models must accommodate both the stable trait and changeable state aspects of motivation and incorporate means for identifying them during audience motivation analysis to be able to respond to both.

Affective versus Cognitive Domain. Does motivation belong only to the affective domain, or does it relate to the cognitive domain as well? Some theorists have considered motivation as contained within the affective domain (Martin & Briggs, 1986; Tennyson, 1992). A slightly different position was taken by Briggs (1984), who discussed motivation as an independent area from affective domain, an area to be intensively studied.

However, if motivation is defined as an internal determinant of the force and direction of effort that drives a student to learn (Keller, 1983), then motivation must be viewed as having both affective and cognitive components. For example, attributional theories of motivation (for example, Rotter, 1966; Weiner, 1974) are primarily cognitive. These theories focus on people's interpretations of the causes of outcomes, combined with the value they attach to the outcomes, as a major influence on whether people will pursue given goals. However, emotions, which are an affective component, must also be considered because of their influence on motivation and behavior (Astleitner, 2000).

These issues are present in much of the literature of motivation, but simply possessing knowledge of them is not sufficient for motivational design. Motivation is a complex internal construct embedded in experiences, expectations, and perceptions. What is motivating to one person might not be motivating to another. How, then, can instructional designers hope to approach the challenge of motivational design systematically? There are two major requirements of an answer to this question. The first is to understand the major elements of human motivation; the second is to employ a design process that assists one in diagnosing a learner's motivational requirements and prescribing appropriate tactics. The next two sections of this chapter provide a brief introduction to major concepts and theories of motivation and give an overview of design approaches.

4. What are the major characteristics of motivation, in particular the characteristics that will be useful for me to know?

There are many characteristics of human beings that must be considered in understanding motivation. For example, people differ in the amount of curiosity they bring to a situation, their desires to be competitive in pursuing challenging goals, and their beliefs as to whether success and failure result from luck, personal effort, or ability. The full array of motivational literature can be daunting to one who wishes to acquire an adequate understanding of how to influence people's choices and efforts. Syntheses such as those provided by Keller (1983), Keller and Burkman (1993), Wlodkowski (1999), and contemporary textbooks (Brophy, 1998; Petri, 1991; Stipek, 1998) are helpful, but one is still faced with a broad spectrum of concepts, theories, and research.

However, there is a somewhat limited list of concepts representing the major thrusts in motivational research, and these can be synthesized into higher-level categories, making them even easier to remember. In 1983, Keller listed twelve motivational concepts that, combined with principles of behavior analysis and management (Jenson, Sloane, & Young, 1988; Skinner, 1954), continue to represent most of the primary areas of motivational research (Table 6.1).

The theories in each of these subgroups have certain key features in common. Each concept in part A of Table 6.1 is an attempt to explain how certain types of goals become important to people and influence their behavior. Maslow (1954), for example, indicates that there is a hierarchically organized set of needs that explain the basis of human motivation. Other theories focus on specific motivators such as curiosity arousal (Berlyne, 1965), need for achievement (McClelland, 1976), and the need for personal competence (White, 1959). In other words, each of these theories addresses some aspect of the question of what the important goals, needs, or values are that motivate a person.

In contrast, all of the theories in part B of Table 6.1 are concerned with the question of expectancy for success. Any time people attempt to accomplish goals, they have personal, subjective opinions about their probability of succeeding. Each of the theories in

TABLE 6.1 Representative motivational constructs and categories

A. Value-Related Concepts	*B. Expectancy*-Related Concepts
Self-actualization (Maslow, 1954)	Attribution (Weiner, 1985)
Need for achievement (McClelland, 1976)	Personal causation (deCharms, 1976)
Sensations seeking (Zuckerman, 1978)	Locus of control (Rotter, 1966)
Competence (White, 1959)	Learned helplessness (Seligman, 1975)
Reinforcement value (Rotter, 1972)	Self-efficacy (Bandura, 1977)
Curiosity (Berlyne, 1965)	Expectancy for success (Fibel & Hale, 1978)

this group explains causes or effects of various types of success expectancies. For example, attribution theory (e.g., Weiner, 1985) explains how a person's tendency to attribute successes or failures to such causes as luck or task difficulty, as opposed to effort or ability, will affect the person's motivation to persist in trying to accomplish easy versus challenging goals. Self-efficacy (Bandura, 1977) explains how a person's belief in his or her capabilities to achieve desired goals affects expectancy for success. Each of these theories has unique aspects, but they can be aggregated into one category because of their shared focus on expectancies.

It is possible to aggregate both of these groups of concepts and theories into a single, macro-level theory that is called expectancy-value theory. This theoretical perspective has several specific formulations (Petri, 1991), but all of them contain the same basic assumption that motivation, or behavior potential, is a function of expectancies and values. It purports that human beings will be motivated to achieve a goal if (l) they have a positive expectancy for success and (2) the goal has positive value for them. People have multiple needs and goals, so the goals with the highest resultant motivation are the ones that will receive the most effort.

Even though expectancy-value theory has proven to be satisfactory as a macro-theory to synthesize many of the micro-theories of motivation that explain the internal, psychological factors of motivation, it does not provide a holistic view of motivation and performance. It is also necessary to consider the influences of behavioral and emotional consequences on motivation and how all of these motivational elements are related to learning, as in Keller's (1983, 1987a, 1999a) systems model of the effects of motivation, learning, and environment on effort, performance, and satisfaction.

Not all concepts listed in Table 6.1 represent currently active areas of research. Without question, the most active are self-efficacy and attribution theory, with a recent elevation of interest in competency motivation. However, some of the other areas, such as curiosity, would benefit from renewed interest, especially in relation to designing instruction for web-based instruction and other distance learning and multimedia environments.

With respect to new developments, there has been a relatively recent growth of interest in the concepts of flow (Csikszentmihalyi, 1990) and learned optimism (Seligman, 1991). In addition, there are studies of motivation embedded in theories, models, or problem areas related to learning and design. These include research on (a) self-regulation, which has become a popular area of research because of its presumed relation to studying successfully in decentralized learning settings (Schunk & Zimmerman, 1994); (b) constructivism (Duffy, Lowyck, & Jonassen, 1993), which attempts to build learning environments fostering the development of self- and group-generated knowledge and concepts; and (c) continuing motivation, which was first introduced by Maher (1976) more than two decades ago.

Given this array of motivational concepts and theories, why is it important for instructional designers or human performance technologists to know something about them? Several writers offer lists of tactics for designers to choose and apply (for example, Keller, 1987b; Keller & Suzuki, 1988; Stipek, 1998; Wlodkowski, 1999). But without knowledge of the underlying concepts, designers are not likely to choose appropriate tactics for a situation or to adapt them to fit a situation's unique requirements. Judgment is required to know which motivational tactics will be effective and feasible on the basis of learner needs, development costs, and implementation issues. Therefore, in addition to understanding the concepts of motivation, designers will benefit from a systematic process to aid in analysis and design, as described in the following section.

5. How can I apply this knowledge of motivation in the context of instructional design and human performance technology?

The effort to build applied models of motivation is not new, but the emphasis has changed. The early models tended to focus on one specific motivational characteristic, for example, Alschuler's work on developing the achievement motive in children (Alschuler, 1973; Alschuler, Tabor, & McIntyre, 1971).

The concepts and processes in these models can be useful to an instructor who wishes to encourage development of these characteristics, but instructors would not normally attempt to be responsible for formally changing learners' personalities. Instructors will more typically be concerned with how to create learning environments that motivate learning. To do this, one has to estimate the learners' motivational characteristics and then design the learning environment to match their motivational requirements. This implies that one must work holistically with motivation and not be limited to one or two specific motivational characteristics.

There are two well-published models of motivational design that are holistic: the time-continuum model of Wlodkowski (1999) and Keller's ARCS model (1984). Wlodkowski's model contains categories of motivational tactics and prescribes when to use them during an episode of instruction. The question of how many tactics or specifically what kinds of tactics to use in each of the six categories is left to the teacher's judgment.

The ARCS model is similar to Wlodkowski's (1999), but differs in two important ways. Tactic selection in the ARCS model is done systematically from its sets of categories and subcategories. The major categories provide a macro-level frame of reference, while the subcategories (see Table 6.2) provide guidance for more specific subsets of motivational tactics. The second difference is that the ARCS model is a problem-solving approach. Selection of tactics is based on a systematic design process, including an analysis of audience motivation, which provides a basis for selecting appropriate tactics, both number and type.

The full application of the ARCS design process has ten steps (Figure 6.1) and integrates well with lesson planning and instructional design processes. The process begins with information about the lesson or course to be enhanced, the teacher (if it is an instructor-led course), and the students. It then proceeds to analysis of the audience and current materials for the course. On the basis of this information, the designer or teacher can write motivational objectives, select or create motivational tactics, and then develop and test them.

Both Wlodkowski's and Keller's models have elements of prescription, but in different ways. Wlodkowski's approach is prescriptive in that it tells the teacher what types of tactics to use at each stage of an instructional episode. With the ARCS model, prescription does not occur until after an analysis of audience motivation has been conducted. This analysis (Keller, 1987c) produces the prescriptions for tactics. In the strictest sense of the word *prescription,* both models are more heuristic than prescriptive. That is, they provide guidance for the selection and application of motivation tactics, but personal judgment is

TABLE 6.2 ARCS model categories and subcategories

Attention	
Perceptual arousal:	What can I do to capture their interest?
Inquiry arousal:	How can I stimulate an attitude of inquiry?
Variability:	How can I use a variety of tactics to maintain their attention?
Relevance	
Goal orientation:	How can I best meet my learner's needs? (Do I know their needs?)
Motive matching:	How and when can I provide my learners with appropriate choices, responsibilities, and influences?
Familiarity:	How can I tie the instruction to the learners' experiences?
Confidence	
Learning requirements:	How can I assist in building a positive expectation for success?
Success opportunities:	How will the learning experience support or enhance the students' beliefs in their competence?
Personal control:	How will the learners clearly know their success is based upon their efforts and abilities?
Satisfaction	
Intrinsic reinforcement:	How can I provide meaningful opportunities for learners to use their newly acquired knowledge/skill?
Extrinsic rewards:	What will provide reinforcement to the learners' successes?
Equity:	How can I assist the students in anchoring a positive feeling about their accomplishments?

required of the teacher or instructional designer with respect to selecting and creating activities that represent the tactics.

6. What are the trends or future directions in motivational research and application to learning environment design?

There are several currently popular areas of research, such as attribution theory and self-regulation, that are mentioned throughout this chapter. In addition to these construct-specific areas of research, there has been a growth of interest in several other areas of motivational research in recent years. First, within the domain of training and human resource development, there has been increasing interest in human performance technology (HPT) (see, for example, Chapter 9 in this book). This is leading instructional designers to be more concerned about motivation in the workplace (Keller, 1999a) and self-motivation (McCombs, 1984). This multilevel set of concerns is likely to grow in importance because of the growing number of organizations adopting HPT.

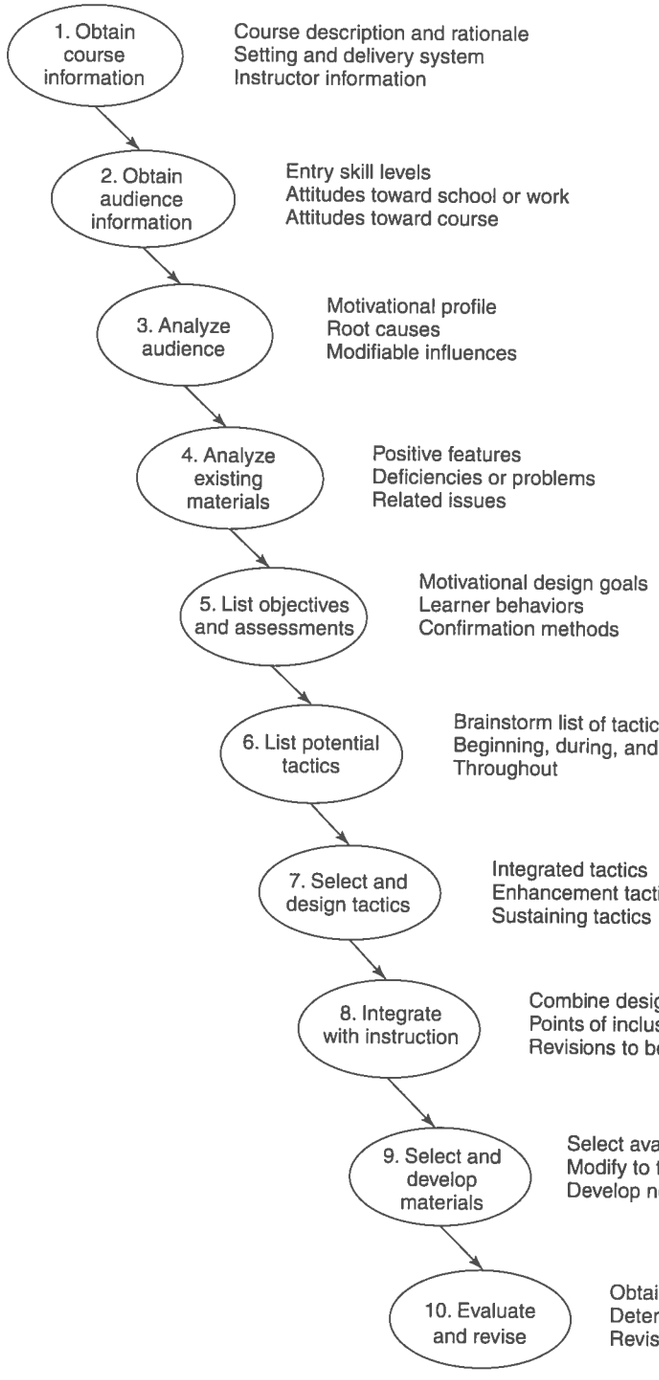

FIGURE 6.1 Steps in Motivational Design

Second is the role of motivation in the constructivist approach to learning environment design, which promotes learners' self-development of insight and knowledge structures. Within this approach, motivation tends not to be singled out as a specific area of emphasis but is embedded in other concepts. For example, there is a strong emphasis on the principle of *authenticity,* which refers to developing learning activities and tests that are closely related to, or preferably located within, a real-world context. This principle would be an element of relevance in the ARCS model and is also related to classical research on transfer of learning, in which transfer is enhanced when the learning environment closely resembles the application environment (Travers, 1977).

Third, within the field of instructional design and human performance technology, there is growing interest and research on motivation in web-based instruction, computer-based instruction, and distance learning. In most distance learning contexts, the noncompletion rate is extremely high, and learner motivation problems are generally considered to be a primary cause. However, the number of formal studies is fairly small, though growing (Visser, 1998). With respect to computer-based instruction, Song (1998), building on the work of Astleitner & Keller (1995), demonstrated how one can produce motivationally adaptive, computer-based instruction. He embedded motivational self-checks in the lessons. On the basis of the learner's responses, the computer determined the amount and type of motivational tactics to use in the subsequent segment of the lesson.

Fourth, there is a growing interest in understanding the affective components of motivation, especially in regard to emotions (Astleitner, 2000). There is no doubt that emotions are highly related to approach and avoidance behaviors, but there is little research on how to understand and systematically influence this aspect of motivation in regard to motivation to learn. Astleitner's (2000) FESAP model provides a conceptual structure and application guidelines that appear to be a promising development in this area.

Fifth, a challenge in motivational design, as well as in instructional design, is how to make the design process quick as well as effective. A full-featured design process that includes all the relevant levels of analysis, design, development, formative testing and revision, and validation can be quite time-consuming. Within the mainstream of model and tool development in instructional design, there is a strong concern about how to reduce the cycle time from project initiation to completion. The same thing is true in motivational design. Recently, Keller and Suzuki (Keller, 1999b; Suzuki & Keller, 1996) introduced a simplified approach to motivational design that has been applied and validated in two additional contexts internationally (Keller, 1999a; Song, 1998; Visser, 1998). In this model, teachers or instructional designers are provided with a simple matrix that guides them through a shortened analysis and design process.

Conclusion

Even a casual comparison of today's instructional design and educational psychology literature with that of fifteen years ago illustrates a dramatic growth of attention to motivational factors in learning and performance. As with any field of research on human learning and performance, there is much to be learned, but there is also much that has been learned. In the past, motivation was generally regarded as being too elusive and changeable to encompass in a holistic theory or model of explanation and prescription. However, several areas of research and development have shown that it is possible to build valid, systematic approaches to understanding and influencing learner motivation, and this contributes significantly to the larger pictures of learning environment design and human performance development.

Certainly, the field of instructional design can benefit from current research and practices in motivation. Inasmuch as what causes someone to learn is never a precise science with easy-to-follow guidelines, incorporation of motivational techniques is essential to maximize learning. As was stated earlier, motivation is an internal construct embedded in personal experience and expectations. Instructional designers must not only be fully cognizant of the entire range of motivational methods and models available, but also must know how to integrate them into a variety of instructional situations. Even the most accurate content, related activities, and diligent preparation can be ineffective without the systematic incorporation of motivation.

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Application Questions

1. You see a room where learners are smiling and happy and the instructor is entertaining. Are the learners motivated? Why or why not, and how do you know?
2. Do you view motivation as being in the affective or cognitive domain? Support your answer.
3. Compare and contrast value-related and expectancy-related motivational constructs and concepts in terms of how they affect instructional design.
4. Research Wlodkowski's Time Continuum Model of Motivation. How would you apply each of the six categories to instructional design?
5. Compare and contrast Wlodkowski's Time Continuum Model with Keller's ARCS Model in terms of approaches to instructional design.
6. You have been hired to design a training course for a topic in your area of specialization. Using Table 6.2 as a template, what would you incorporate into each subcategory to motivate learners?

CHAPTER 7

INSTRUCTIONAL GOALS AND LEARNING STYLES: WHICH TAKES PRECEDENCE?

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Editors' Introduction

As discussed in Chapter 4, most theories of learning focus on the individual learner and recognize that different learners go about learning in ways that are unique to them. If this is the case, how important is it that we design and adapt our instructional strategies to match the various learning styles of our learners? Is it more important to base our strategies on the type of instructional goal we are trying to teach? These are some of the questions that David Merrill addresses in this chapter. He discusses the relative importance of these two factors and describes why he feels that instructional goals should be the main factors to consider when instructional strategies are being planned.