Designing to Motivate:
Motivational Techniques to Incorporate in E-Learning Experiences

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Abstract

This paper addresses the construct of motivation as it relates to learning. Questions that will be discussed are (a) What is motivation, (b), how can motivation be incorporated in the instructional design process, and finally, (c) what motivational techniques have been used successfully in e-learning settings? Some general background information on motivation will be discussed. Two instructional design models for motivation will be described and examples of best practices for Web-based learning will be supplied.

Any experienced teacher knows that without the proper motivation for students to engage in a learning experience, the otherwise best designed experiences will be unsuccessful. Dick and Carey (1996) state, "Many instructors consider the motivation level of learners the most important factor in successful instruction" (p. 92). "Motivation is not only important because it is a necessary causal factor of learning, but because it mediates learning and is a consequence of learning as well" (Wlodkowski, 1985, p. 4). In other words, students who are motivated to learn will have greater success than those who are not. Additionally, students who learn well will be more motivated to do so in the future.

Recent literature from the corporate training arena (Bonk, 2002; Moshinskie, 2001) states statistics of attrition rates as high as 80% ("Sloan E-Learning Course," 2001) in e-learning training courses. There are many possible reasons for this attrition. It is believed that one contributing factor is that the learners are not motivated or cannot sustain their motivation in the courses.

Despite the fact that motivation is a key component to instruction and learning, one standard definition for the hypothetical construct of motivation does not seem to exist. Initially, the study of motivation was linked to primitive drives and needs (Weiner, 1990). This is an antiquated view of motivation. Moshinskie (2001) uses the definition, "The attention and effort required to complete a learning task and then apply the new material to the work site" (p. 34). Moshinskie's definition gets the gist across to the casual reader, but is not detailed. Between these two ideas exists a body of research related to motivation. Bandura (1997) identifies three different forms of motivation around which different theories have been built. Those theories are attribution theory, expectancy-value theory, and goal theory.

Attribution Theory

Attribution theory is concerned with how a learner explains successes and failures. A learner may attribute the success or failure on an assignment to himself or to reasons external to him. The reasons for success or failure may be stable and or controllable over time. For example, a student may attribute a poor grade on an assignment by stating, "I should not expect to get a good grade since I am not a good student." This attribution is internal to the learner and perceived by the learner to be uncontrollable and stable over time. If that student had said, "I did not do well on that assignment because I did not study," then the attribution would be internal to the learner, but it is implied that the situation is not stable over time and is controllable. If the student had studied, that student might have done better on the assignment. A statement such as "I did poorly on the assignment because it was too difficult" is an example of an attribution that is external to the learner, not stable over time, and uncontrollable.

Attribution theory gives us at least one assumption regarding motivation. Instruction should make an effort to help learners attribute their learning outcomes to the controllable and unstable construct of effort. Learners will have no motivation to participate in a learning experience without the belief that change is possible.

Expectancy-Value Theory

The general notion of expectancy-value theory is that learners expect certain outcomes from behaviors and the more valued the outcomes, the more likely someone is to perform the necessary behavior. Consider the situation where a student wants to earn a good grade on a test and expects a good grade on a test, if the test is studied for extensively. If the student does study what the student considers to be an extensive amount and earns a grade that is satisfying, the expectation was met by the outcome. The student now sees that good grades are attainable and is likely to use this same strategy again. Note that expectancy-value theory depends heavily on the perceptions of what the learner can achieve.

Goal Theory

Goal theory assumes that establishing goals to be obtained motivates behavior. The goals set by the learners may be learning goals or performance goals. Performance goals are goals that center on some evaluation of one's competence in a specific area. For instance, a learner may set the following goal: "I want to get at least a 90% on my integration test." This is a performance goal. The learner wishes to meet a certain performance level compared to some set scoring standard. If the learner stated the goal, "I want to understand integration," that would be a learning goal. The goal is centered on the learner developing new skills, knowledge, or attitudes and is not aiming for some performance level or judgment.

Goals may be proximal or distal. Proximal goals are those that can be achieved in a reasonably short time period, whereas distal goals are those that will be met far into the future. Typically, proximal goals are associated with maintaining motivation. "Performance goals foster the implicit belief that intelligence is fixed, while learning

goals are associated with the belief that intelligence is malleable and can be developed" (Driscoll, 2000, p. 309). Hence, proximal learning goals are desired to maintain motivation. Setting goals, however, is not enough to maintain motivation. Learners will have no way to gauge their own progress toward success without some measure of progress toward the goal.

While there is no single standard definition for the construct of motivation, there is one common element that exists throughout the theories just discussed. All three of these theories have links to self-efficacy involved with motivation. "Perceived self-efficacy refers to the beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Banudra, 1997, p. 3). In attribution theory, a learner attributing success to ability results in heightened beliefs of personal efficacy, which, in turn, predict the learner's future results. If one applies expectancy-value theory, once a success is achieved at learning a particular task, self-efficacy is increased and thus the likelihood of attempting the task in the future is increased. Goal theory has many connections to self-efficacy. Two connections between self-efficacy and goal theory are detailed as follows. One's perceived abilities will dictate what types of goals an individual sets. Also, as one works toward achievement of a goal, the successes and failures along the way will contribute to his or her beliefs of self-efficacy.

Within all of these theories are the concepts of intrinsic and extrinsic motivation. Intrinsic motivation refers to a learner's internal desire to perform a task for no reward other than the personal satisfaction or enjoyment. When a learner is motivated by rewards and incentives external to the learner's interest and satisfaction, these factors are termed extrinsic motivators. Clearly, the most desirable form of motivation is intrinsic. In fact, care must be taken with extrinsic rewards. Over time learners who are intrinsically motivated, but rewarded extrinsically, can devalue their intrinsic interest in learning in favor of the extrinsic rewards (Husen & Postlethwaite, 1994, p. 3941).

There are many theories regarding how and why students are motivated. When developing instruction, one wishes to incorporate strategies that will motivate students to learn. Alkin (1992) writes, "Motivational research has been hindered because of an unrealistic expectation that a cookbook can be provided telling educators how to motivate their students" (p. 864). There is no cookbook, but there are general principles of motivational design than can be considered when designing instruction. Wlodkowski (1985) and Keller (1987) provide motivational design models that have been well published.

Motivation Models

The Time Continuum Model

"The primary value of the Time Continuum Model of Motivation is that it is an organizational aid" (Wlodkowski, 1985, p. 67). The model is presented in the form of a handbook for developing instruction and draws on approaches from linguistics, cognitive psychology, and motivation research. The model is not based on any one scientific theory or philosophy. Wlodkowski's Time Continuum Model of Motivation identifies three critical periods in the learning process where motivation is most important. Those periods are the beginning of the learning process, during the learning process, and at the end of

the learning process. Each of those three periods has two distinct factors associated with it, yielding six basic questions to aid motivational planning.

The factors to be considered at the beginning of the learning process are attitudes and needs. When planning the beginning of a learning experience, the designer should consider how the instruction will best meet the needs of the learners, and how a positive learner attitude can be developed. Wlodkowski (1985) provides many strategies to address learner attitude. The strategies are centered on easing into the course with icebreaker activities, stating clear objectives for the course, and various strategies to help the learners develop a clear understanding of what will be required to be successful in the course. It is suggested that when possible, the instruction should focus on the physiological needs of the learners and experiences familiar or relevant to the learners. The instruction should allow for choice and self-direction in assignments. A needs assessment should be performed prior to developing the instruction to aid in appropriate planning. Stimulation and affect are to be considered during the learning experience. Wlodkowski suggests several ways to maintain stimulation of the learners during the instructional experience. To maintain a stimulating learning environment, learner participation via questions, humor, varying presentation style using body language and voice inflection, and the use of different modes of instruction from lecture to group work to class discussion are strategies suggested. Wlodkowski's primary strategy is to make the learning experience as personalized and relevant to the learner as possible.

Finally, competence and reinforcement are to be considered at the end of the learning experience. Frequent feedback and communicating learner progress are the author's main methods for developing confidence in the learners. Wlodkwoski (1985) addresses reinforcement by relating the natural consequences of learning to the learner and providing rewards in some instances.

The ARCS Model

The ARCS model (Keller, 1987) is a method for systematically designing motivation strategies into instructional materials. It consists of three parts: a set of four categories for concepts of human motivation, a set of strategies for enhancing motivation in instruction, and a design model for motivational design. The ARCS model works under the assumption that learners will be motivated if they feel they can be successful and that there is value in their learning. Hence, this model works within the boundaries of expectancy-value theory.

The acronym, ARCS, is a device used to summarize the four categories of motivation considered by Keller. The categories are attention, relevance, confidence, and satisfaction. Keller lists several strategies for sustaining attention, relevance, instilling confidence, and making people feel satisfied with their accomplishments. The main ideas of these strategies will be listed here. A complete listing of the strategies is given by Keller (1987), who suggests varying the delivery or format of the instruction and using humor, participation, and facts that contradict a learner's intuition to sustain attention. It is suggested that relevance be addressed by incorporating a choice in methods of accomplishing course goals into the instruction, or stating how the instruction relates to the learners at the present time, or how it will help them meet future goals. Also, it is suggested that having enthusiastic guest lectures given by those that have finished the

course, relating how the course helped them, would make the course more relevant. Clearly stating learning goals, organizing materials in order of increasing difficulty, helping students set realistic goals, attributing success to effort, and allowing students to become independent learners are all strategies for instilling confidence in the learners. Satisfaction strategies include verbal reinforcement, rewards, personal attention, feedback, and deliberate avoidance of negative influences. Negative influences include threats, external performance evaluations, and overt surveillance.

A systematic design process is part of the ARCS model. The process is used to develop a motivational strategy for a specific instructional experience. The process has four steps: define, design, develop, and evaluate. When applying this process for motivation when developing an instructional experience, one should first define the problem formally. First determine if the problem is one of motivation. If motivation is an issue, analyze the learners, and prepare motivational objectives. Next, design your motivational strategies. Keller's suggestions can be used as an aid in this step. After selecting your motivational strategies, you must develop the instructional materials that will make use of them. Finally, evaluate the learning experience. Keller proposes that the evaluation be based on motivational as well as learning outcomes. "To judge motivational consequences, it is best to use direct measures of persistence, intensity of effort, emotion, and attitude" (Keller, 1987, p. 7).

Comparing the Time Continuum model and the ARCS model, one can see that they are similar. Both models recommend many of the same strategies. This is not surprising since they were each created using developments in motivation and related fields. Some may prefer the organized and systematic approach of Keller, but a deliberate use of either model would produce instructional experiences that would be similar where motivation is concerned. Whether these models were used specifically or not, the principles of these models are readily apparent in some current e-learning designs.

Best Practices

What motivational techniques have been used successfully in Web-based, or e-learning, settings? For this discussion, a list of the motivational strategies that have been shown to be successful was formed by collecting several articles on e-learning experiences. The articles cover corporate training and traditional public and private educational endeavors from all levels. The four categories of Keller's ARCS model will be used as scaffolding for the organization of these practices.

Relevance is by far the most reported successful motivator. Bonk (2002), Hardre (2001), Herndon (1987), Kontoghiorghes (2001, 2002), Moshinskie (2001), and Reeves (2001) all found that materials relevant to a learner in either a work capacity or in personal interests were successful motivators for learning. Strategies used for relevance that were successful were case studies and reflections on work experiences. A common word used to describe a relevant course component is that it is an "authentic" task.

In addition to relevance, Bonk (2002), Hardre (2001), and Moshinskie (2001) list meaningful feedback as an important element in an e-learning experience. Moshinskie along with Song and Keller (2001), suggest incorporating what Song and Keller refer to as motivationally adaptive feedback. Learners can learn to ignore overstated or novel feedback. Motivational feedback should be tied more to the specific learner's

performance level rather than to simple milestones or scores on assignments in the learning experience.

Other motivational practices reported in the literature include the forming of learning communities online (Hardre, 2001), varied presentation formats (Moshinskie, 2001), and a simple and easily understood navigation system within the learning experience (Hardre, 2001; Reeves, 2001). The strategy of varying the instructional delivery is stated as a strategy in both design models and it is listed as a practice for motivating learners. Bonk (2002) reports that blended approaches to training are being relied on in the corporate training realm. In fact, the term "blended learning" seems to be a current buzzword in the e-learning literature. This is perhaps yet another indicator that the design models of Wlodkowski (1985) and Keller (1987) are still valuable tools for instructional designers.

Conclusions

Reading the literature regarding the history and theories of motivation in the learning process informs one that there are still many unknown elements in this area. It is clear that self-efficacy is at the heart of motivation. When designing learning experiences, one should take this into consideration and make every effort to increase the students' self-efficacy.

It is apparent that an e-learning experience should be designed with relevant and authentic experiences for the learners. Other features of e-learning experiences that are motivating include feedback and navigation systems. Feedback mechanisms that are meaningful and adaptive, if possible, should be incorporated into the experience. Also, a simple, consistent, and easily understood navigation system should be incorporated into the materials.

Despite the fact that the Time Continuum model (Wlodkowski, 1985) and the ARCS model (Keller, 1987) were developed well before the boom of the World Wide Web and e-learning, the best practice findings indicate that they remain sound models for designing motivating instructional materials. In fact, all of the best practice suggestions cited herein easily fall into categories described in both of the design models addressed in this paper, with the exception of navigation design for the e-learning experience. Consideration for an effective navigation system for on-line course materials could easily be added to Keller's "satisfaction" category. Collectively, these factors that have influenced motivation for learning in the past, together with new factors that have arisen due to the nature of e-learning delivery media must be addressed for the enhancement of student learning in today's anytime, anywhere learning environments.

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