Strategies for

Stimulating the Motivation To Learn

by John M. Keller

> *"I can hardly stay awake. I wish that flight last night hadn't been so late. When is this guy going to give us a break? My gosh, it's only 9:30 [a.m.]."*

Have you ever been preoccupied with thoughts like these when attending a course session? Who hasn't! What snapped you out of it? Think about a seminar, conference presentation, or training session that you attended recently. What were some of the specific things the instructor did that got or held your interest? Conversely, what were some of the things the instructor did that were irritating, boring, or both?

When asked these questions, people are almost always able to produce a good list of characteristics of motivating versus demotivating instruction. Yet, despite this personal knowledge resulting from years of attending courses and workshops, people usually feel that they do not have an adequate grasp of motivation, especially when they have to design or teach a course themselves.

Here, then, is a deficit, but what is the reason for it? When asked, people usually say one of two things:

1. "I don't have a good handle on motivation; a clear grasp of the specific factors involved. There are too many things to think about, and it's too fuzzy."
2. "I don't know how to determine what type of motivational strategies to use, how many to use, or how to design them into the lesson.

The ARCS Motivation Model (Keller, 1984) helps answer these questions. This article, which is the first in a two-part series, responds to the first question. It describes how to break the vague, general idea of motivation into four useful concepts. Each of these is supported by research, and each encompasses many practical strategies that you can use. The second article in the series (Note 1), responds to the second question. It explains what steps to follow in doing motivational design, and how these steps interface with instructional design.

The ARCS Model

The challenge of how to stimulate students' motivation to learn can be made more predictable and manageable by considering four basic human characteristics and the motivational dynamics associated with them. According to the ARCS Model, there are four general requirements (Table 1) to be met in order for people to be motivated to learn, and there are practical strategies to use in achieving each of the four requirements.

The first requirement is to obtain and sustain the student's **A**ttention. In the learning process, a student's attention has to be directed to the appropriate cues, but before it can be directed, it has to be acquired. The motivational concern is for getting and sustaining attention. It is not usually too difficult to get attention, but sustaining it is often a challenge.

After you have gotten the student's attention and begun to present the material, the student might ask the classic **R**elevance question: "Why do I have to study this?" An adult who was required to come to your training session might be thinking (or saying!), "I don't need this. It doesn't apply to my job, and besides, I already know it." In both of these examples, the students do not perceive any personal relevance for the instruction. Before they can be motivated to learn, they will have to believe that the instruction is related to important personal goals or motives.

If you have successfully established relevance, and are sustaining the audience's attention, you might still have less than appropriately motivated students due to too little or too much **C**onfidence, or expectancy for success. They could have well-established fears of the topic, skill, or situation that prevent them from learning effectively. Or, at the other extreme, they might be inappropriately cocky and overlook important details in the learning activities. For these situations you

Table 1.
Components of the ARCS Model

Major Categories & Definitions		Major Process Questions
Attention	Capturing the interest of learners; stimulating the curiosity to learn	*"How is this learning valuable and stimulating to my students?"*
Relevance	Meeting the personal needs/goals of the learner to effect a positive attitude	
Confidence	Helping the learners believe/feel that they will succeed and control their success	*"How can I (via instruction) help students succeed and allow them to control their outcomes?"*
Satisfaction	Reinforcing accomplishment with rewards (internal and external)	

have to design the learning materials and environment, including the instructor's behavior, to establish an appropriate level of confidence in regard to the learner's expectancy for success.

Finally comes the payoff. Or does it? To have a continuing desire to learn, the student must have a sense of **S**atisfaction with the process or results of the learning experience. Satisfaction can result from extrinsic and intrinsic factors. Extrinsic factors are very familiar to us. They include opportunities for advancement, certificates, and other material rewards. Intrinsic factors, although often overlooked, can also be very powerful. People like the feelings of self-esteem and achievement that result from interacting with other people, having their views heard and respected, and from successfully completing a meaningful learning activity.

In summary, the ARCS Model defines four major factors that influence the motivation to learn. These factors are related to two important questions (Table 1) that you must ask yourself as you are designing or preparing to teach a course. First, what will you do to make the instruction valuable and stimulating for your students? Second, how will you help your students succeed and feel that they were responsible for their success?

Research Support

The four motivational components are based on a general theory of motivation in relation to learning (Keller, 1983), and on supporting studies from many areas of research on human motivation. There are large numbers of specific strategies that can be used to achieve the appropriate motivational conditions. Many of these were identified in earlier studies and clustered into subsets within each of the four major categories.

The extensive work of Wlodkowski (1985) provides concurrent validity in that it includes many similar strategies even though the general model is different. The practical utility of the ARCS Model has been supported in a field test (Keller, 1984), and in other settings in which it is being used. Over time, the strategies have been modified for specific kinds of instructional settings such as textual material (Keller & Kopp, 1987), and computer-based instruction (Keller & Suzuki, 1987). The following presentation applies primarily to instructor-led courses.

Attention-Getting Strategies

In getting and sustaining attention, we are dealing with human characteristics such as the orienting reflex, curiosity, and sensation seeking. Each of these represents a specialized area of research, but they share a common concern for factors affecting the orientation and span of attention.

One important aspect of attention is its opposite, otherwise known as boredom (Kopp, 1982). Sometimes, as reflected in the words of Dylan Thomas who said, "Someone is boring me. I think it's me," educators believe that the avoidance of boredom is primarily the student's responsibility. However, it is not totally up to the student to be self-motivated. No matter how interested the students are at the beginning of a class, it is possible to bore them if you try hard enough. Right? We've all seen professors or trainers who lecture "full bore." To avoid this condition, there are specific kinds of activities that will help, and they tend to cluster into three general categories (Table 2).

Perceptual arousal. The first of these, perceptual arousal, is one type of curiosity (Berlyne, 1965). Almost any sudden or unexpected change in the environment will activate a person's attention. A change in voice level, light intensity, or temperature, or a surprising piece of information will do it. Some people can use humor effectively to get attention. However, these events are usually transitory in that people adapt to the situation rather quickly.

Inquiry arousal. To sustain attention, a deeper level of curiosity may be activated by creating a problem situation which can be resolved only by knowledge-seeking behavior. Instructors often do this by using a warm-up activity that

engages the learners in a problem-solving, experiential situation, and by the use of questioning techniques. Environmental design factors that evoke a sense of mystery are also good curiosity arousers. Kaplan and Kaplan (1978) have shown how curving paths that disappear behind an obstacle, partially revealed objects, and interplays of light and dark can stimulate curiosity and exploratory behavior. In instruction, these effects can be incorporated in graphic design, furniture arrangements, and the use of presentation techniques such as progressive disclosure.

Variability. A third element in attention is variability. In some ways, it is closely related to the first two, but it is also important in its own right. Instructors who use the same instructional approach repeatedly, even though it is a "tried and true" method, will benefit from variation. Typically, trainers move from a warm-up activity into a short lecture which is followed by a demonstration and an exercise. This is an excellent sequence, but can become boring when used unvaryingly. To diverge with a mediated presentation or group processing activity would be a welcome change of pace.

Relevance-Producing Strategies

Relevance is a powerful factor in determining what we are motivated to learn, or what we are willing to continue paying attention to after our attention has been aroused or restimulated. "How," we consciously or unconsciously wonder, "does this material relate to my life?" If we have a good feeling about the personal meaningfulness of the material, or if we consciously recognize its importance, then we will be motivated to learn it.

Relevance, in its most general sense, refers to those things which we perceive as instrumental in meeting needs and satisfying personal desires, including the accomplishment of personal goals (Keller, 1983). Responding to people's perceived needs, which may or may not be congruent with their actual needs, is a cardinal principle of organizational success (Kaufman & Stone, 1983), especially in the fields of selling and marketing, and it is equally important in learning and instruction (Sperber, D. & Wilson, D., 1986). A successful instructor is able to build bridges between the subject matter and the learner's needs, wants, and desires.

Goal orientation. Strategies to generate relevance can be ends-oriented or means-oriented. For example, people will be motivated to learn if the new knowledge or skill will help them achieve a goal in the present or future. Goal orientation (Table 3) is frequently used by teachers and trainers who try to relate the benefits of their courses to college acceptance, getting a job, getting a raise, getting a promotion, avoiding getting fired, or improved job performance. This external goal orientation also applies to courses that are taken as prerequisites to other courses.

This type of utilitarian motivation is probably the single most important relevance factor, and it is appropriate to build on it when applicable. To do this, make sure the students understand how the concepts and skills are related to their goals. It might be clear to you, and it might become clear to them after they return to their jobs. However, to improve the perceived relevance of the instruction while taking the course, use job-related examples, explain the connections, and ask the students to describe their own perceptions of relevance.

Sometimes, instructors will try to use goal-oriented or job-related relevance when it really is not appropriate. The connection between the instructional material and the student's future success may be loose and tenuous at best. Even in a job-skills course, the learners, or trainees, may have been assigned to the course, and do not particularly require it. In these situations, when the instructor cannot generate meaningful ends-oriented relevance, process-oriented relevance might help until an ends-relationship becomes apparent.

Motive matching. Process-oriented relevance is achieved by motive matching (Table 3). This refers more to the way in which something is taught than to the substance of what is taught. For example, people who are high in "need for achievement" enjoy defining goals and standards of excellence for themselves. They also like to have a great deal of

Table 2.
Components of Attention

Subcategories & Process Questions	Main Supporting Strategies
Perceptual Arousal	
What can I do to capture their interest?	Create curiosity, wonderment by using novel approaches, injecting personal and/or emotional material.
Inquiry Arousal	
How can I stimulate an attitude of inquiry?	Increase curiosity by asking questions, creating paradoxes, generating inquiry, and nurturing thinking challenges.
Variability	
How can I maintain their attention?	Sustain interest with variations in presentation style, concrete analogies, human interest examples, and unexpected events.

control over the means of achieving the goal, and to feel personally responsible for success. They are often uncomfortable in group work which requires consensus in planning and shared responsibility for the results.

In contrast, people high in "need for affiliation" enjoy being with other people in noncompetitive situations where there is more of an opportunity to establish friendly relationships. Some people may be high in both of these motives. The point is, that the use of teaching strategies such as cooperative work groups combined with individual competitive activities, such as games,will help make the instruction more appealing, independent of the content. In fact, the use of appealing methods of teaching can help stimulate interest in the topic.

Familiarity. The third category of strategies to generate relevance is a blend of ends and process elements. People enjoy more about things they already believe in or are interested in. At one level, familiarity (Table 3) can be as simple as including human interest language in textual information, or human figures in graphics. Text which includes the use of personal pronouns and people's names is more interesting to people than third person or references to mankind in general. At a higher level, instructional material that confirms the learner's preexisting beliefs and interests will be seen as relevant. In instruction, the use of concrete examples from settings familiar to the learner can help to achieve relevance, especially when teaching abstract material.

A simple but powerful method for building relevance is to stimulate personal involvement in the class. Learn and use the students' names. Ask for experiences and ideas from the students. Let them share "war stories" and "a-ha!" experiences.

Confidence-Building Strategies

The fear of failure and the attraction of achievement are opposing forces that have a huge influence on motivation. Both are complex and have been studied in many ways as reflected in the extensive literature on variables dealing with personal control and its opposite which is helplessness (see Keller, 1983, for a review).

Despite this research, we often underestimate both the fear of failure and desire to succeed in an audience, because the former tempers the latter, and this can make people appear more neutral than they really feel. This is one reason why it is important to provide meaningful success experiences for learners as soon as possible in a workshop or course. The success experience will be meaningful and will stimulate continued motivation if there is enough challenge to require a degree of effort to succeed, but not so much that it creates serious anxieties or threatens failure. There are several concepts and strategies that assist in building confidence (Table 4).

Learning requirements. Letting the learners know what is expected of them is one of the simplest ways to help instill confidence. Providing that the students have the required ability and prerequisites for a given course, they will have a much higher expectancy for success if the performance requirements and evaluative criteria are made clear. If not, the students will require assurance that the instructor will help them fill their gaps.

Sometimes the instructor will not want to "spill all the beans" at the beginning of a program. To create suspense, to use a progressive disclosure strategy, or simply to have some surprises in reserve, the instructor may want to give only limited information about the course. In this case, the instructor can establish confidence by beginning a session with a warm-up, performance exercise, or discussion of goals and expectations in order to build trust. Positive, considerate responses to student questions and concerns, as opposed to clipped, "cold," or sarcastic verbal and body language, also help generate trust. The bottom line is to remove fear and anxiety, but in so doing it is not necessary to also remove suspense and mystery.

Success opportunities. After creating an expectancy for success, it is important for the learners to actually succeed at challenging tasks that are meaningful. These success opportunities should be somewhat

Table 3.
Components of Relevance

Subcategories & Process Questions	Main Supporting Strategies
Goal Orientation	
How can I best meet my learner's needs? (Do I know their needs?)	Provide statements or examples of the utility of the instruction, and either present goals or have learners define them.
Motive Matching	
How and when can I provide my learners with appropriate choices, responsibilities, and influences?	Make instruction responsive to learner motives and values by providing personal achievement opportunities, cooperative activities, leadership responsibilities, and positive role models.
Familiarity	
How can I tie the instruction to the learners' experiences?	Make the materials and concepts familiar by providing concrete examples and analogies related to the learners' work.

different for people who are just learning new knowledge or skills than for people who have gotten the basics and are trying to achieve mastery. People who are learning something new generally like to have a fairly low level of challenge combined with frequent feedback that helps them succeed or confirms their successes. After mastering the basics, people are ready for a higher level of challenge, including competitions that help them exercise and sharpen their skills. The challenges to the instructor and designer are to move people quickly enough to avoid boredom, but not so quickly that they become anxious, and to adjust the pacing as the learners' competency levels change.

Personal control. Most people seem to enjoy feeling that they have some control over their lives and environment. Yet, in a learning setting, the control is often clearly in the hands of an instructor. To enhance motivation, the controlling influence of the instructor should be focused in the areas of leading the experience, and adhering to the standards that are expected. This provides a stable learning environment in which the learner should be allowed as much personal control over the actual learning experience as possible.

This can take many forms. The use of experiential learning activities and other methods that require the learner to do problem-solving provide situations in which the learner has to exercise personal control to succeed. Something as simple as using a short-answer test instead of a multiple-choice test gives the learner more control by showing that you are willing to consider a variety of responses.

Provide corrective feedback that helps the learners see the causes of their mistakes, and how to take corrective action. This helps the instructor and the students to maintain a task orientation in which it is perceived to be okay to make mistakes and learn from them. When students get no feedback until they see their final, summative, score or comments, the instructional culture shifts from task involvement to ego involvement. An ego-driven culture is one in which people want to avoid or hide errors so they will look as good as possible to the instructor and other students. On the surface, there might be a high level of accomplishment, but underneath there is usually an increase in anxiety, a decrease in confidence, and a decrease in real learning. Another simple strategy is to give the learner attributional feedback that supports effort and ability as the causes of success. Tell the learner such things as, "See! You did it on your own. I like the way you came up with a solution to this problem." Do not say things such as "You really lucked out on that one," which suggest that success (or failure) was due to things the learner could not control. Also be careful about body language. Both verbal and nonverbal messages will influence the learner's self-confidence.

Table 4.
Components of Confidence

Subcategories & Process Questions	Main Supporting Strategies
Learning Requirements	
How can I assist in building a positive expectation for success?	Establish trust and positive expectations by explaining the requirements for success and the evaluative criteria.
Success Opportunities	
How will the learning experience support or enhance the students' beliefs in their competence?	Increase belief in competence by providing many, varied, and challenging experiences which increase learning success.
Personal Control	
How will the learners clearly know their success is based upon their efforts and abilities?	Use techniques that offer personal control (whenever possible), and provide feedback that attributes success to personal effort.

Satisfaction-Generating Strategies

What is satisfying to you as a learner? To finish a course and have the satisfaction of being one step further along your goal-path? To receive an award or certificate for the achievement? To have acquired a useful set of skills or body of knowledge? To have enjoyed working and socializing with other people. To have received a tangible reward such as more pay, time off, gift certificates to the bowling alley? To have been stimulated by feelings of challenge and accomplishment?

All of the above can be satisfying for some learners, at least some of the time. However, the misuse of these outcomes can be very unrewarding. The final step in the motivational process is to create satisfaction so there will be continued motivation to learn, and recommendations of the course to other people. The three categories of strategies in this section (Table 5) provide guidance in determining what kinds of strategies to use to promote satisfaction.

Natural consequences. One of the most rewarding results of performance-oriented instruction is to use the newly acquired skills or knowledge. If the relevance of the course has been previously established, and the student has application opportunities, then the student's intrinsic motivation will be high and there will be less of a requirement for extrinsic rewards. Case studies, simulations, and experiential learning activities can

Table 5.
Components of Satisfaction

Subcategories & Process Questions	Main Supporting Strategies
Natural Consequences	
How can I provide meaningful opportunities for learners to use their newly-acquired knowledge/skill?	Provide problems, simulations, or work samples that allow students to see how they can now solve "real-world" problems.
Positive Consequences	
What will provide reinforcement to the learners' successes?	Use verbal praise, real or symbolic rewards, and incentives, or let students present the results of their efforts ("show and tell") to reward success.
Equity	
How can I assist the students in anchoring a positive feeling about their accomplishments?	Make performance requirements consistent with stated expectations, and provide consistent measurement standards for all learner's tasks and accomplishments.

be excellent vehicles for providing meaningful application opportunities.

These same methods can be used to accomplish motivational goals other than satisfaction. The difference is in how they are used. If the primary goal of a case study, for example, is curiosity arousal or establishing relevance, then it would be used early in the learning process to introduce the topic and to provide learning exercises. Even at that time, learners would find satisfaction from their involvement in the problem-solving aspects of the case. In contrast, when used primarily for satisfaction, the case would be used as part of the application exercises toward the end of the lesson or the course. This would give students a chance to apply what they had learned, and help promote transfer from the classroom to the work setting.

However, it isn't always possible to put the new knowledge or skills to use immediately. There is sometimes a fairly long process of learning specific bits of knowledge and skills before they become a useful package.

Positive consequences. In these situations, a combination of positive reinforcements and extrinsic rewards can be helpful. The traditional material on the effective use of reinforcements to stimulate, shape, and maintain behavior is useful when the learner is not intrinsically motivated, and when the learning task is inherently monotonous as in drill and practice exercises. Using a combination of motivational and formative feedback as described by Tosti (1978) is very effective, and the use of certificates and awards provides external recognition of accomplishment.

Seldom, if ever, is it appropriate to use only intrinsic methods or only extrinsic methods. Even when people are intrinsically motivated to learn the material, there are likely to be benefits from extrinsic forms of recognition. For example, public acknowledgement of achievement, privileges, student presentations of products, and enthusiastically positive comments are generally welcome. A primary issue is control. Learners like to have some feeling of control over their situation, and to see the various pieces fitting into a whole. At the same time, people appreciate the external recognition that helps support the value of what they are doing.

Equity. A final and important point is that people do not look at rewards in isolation, or in terms of their absolute value, which is often difficult or impossible to assess anyway. People tend to make comparisons with other people, and with their own expectations. For example, a course could accomplish its goals very satisfactorily, but if the results were not what the student was expecting, student satisfaction would be low. Similarly, a student might achieve a new "personal best," a score that is higher than any he or she ever achieved before. But, if it is lower than someone else's with whom the student was making a personal comparison, satisfaction might still be low.

The best way to handle the problem of equity is to ensure that course outcomes are consistent with initial presentations and discussions concerning purpose and expectations, and to maintain consistent standards and consequences for task accomplishment. It is possible to make exceptions for people with unusual circumstances, but these people should not receive special recognition or awards at the expense of those who have excelled under the normal requirements.

Conclusion

The ARCS Model provides a typology that helps designers and instructors organize their knowledge about learner motivation and motivational strategies. Motivational interventions can be focused within a general category, or specific subcategory of the model, but they are not always limited in this way. More often a motivational activity will have several effects.

For example, in a course on quality improvement, let's assume that the designer and instructor decide to prepare a case study which allows the students to apply the abstract concepts and procedures to a concrete business situation. To enhance relevance, the case is built

around a hypothetical financial organization similar to the institution in which the students are employed. When the case exercise is finished, it has an attention-getting device at the beginning, it contains corrective feedback on the various decisions that are made, and the solution to the problem provides a satisfying sense of accomplishment. Thus, the primary concern for relevance has been served, but the other requirements of motivation have also been met.

Even though it is expected that any complete instructional method, lesson, or course will satisfy all of the motivational requirements, there will be some situations where a specific type of motivational intervention is required. For example, a technical course might be obviously relevant to newly-hired workers, and the course might be achievable. But, the content might be inherently boring, because it is highly procedural and involves very little problem-solving or human interaction. In this case, the designer and instructor will have to devise learning schedules, contests, unexpected events, and other activities that are focused almost exclusively on the problem of maintaining attention.

In summary, the four categories defined by the ARCS Model answer the first question posed at the beginning of this article. This aspect of the ARCS Model helps you think about motivation in terms of four specific areas of influence on the motivation to learn, and it helps you generate strategies for each category.

By themselves the categories do not tell you how many or what types of strategies to use, or how to design them into the instruction. These decisions are made during the systematic design process which is described in the second article in this series (Note 1).

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Notes

1. See Keller, J.M., "The systematic process of motivational design," in a following issue of *Performance and Instruction*.

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